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

WASTE LICENCE
PROPOSED DECISION

Waste Licence Register Number:	15-1
Applicant:	Dun Laoghaire - Rathdown County Council
Location of Facility:	Ballyogan Landfill Facility/Ballyogan Recycling Park, Ballyogan Road, Jamestown Townland, Carrickmines, Dublin 18

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Reasons for the Decision

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

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

Part I: Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency) proposes, under Section 40(1) of the said Act to grant this Waste Licence to Dun Laoghaire - Rathdown County Council, County Hall, Marine Road, Dun Laoghaire to carry on the waste activities listed below at Ballyogan Landfill Facility/ Ballyogan Recycling Park, Ballyogan Road, Jamestown Townland, Carrickmines, Dublin 18 subject to eleven conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

Licensed waste disposal activities, in accordance with the Third Schedule of the Waste Management Act, 1996

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

Class 4: Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.

Class 5. Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.

Class 6: Biological treatment not referred to elsewhere in this Schedule 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.

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.

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

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

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

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

Class 1: Solvent reclamation or regeneration.

Class 2: Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).

Class 3: Recycling or reclamation of metals and metal compounds.

Class 4: Recycling or reclamation of other inorganic materials.

Class 6: Recovery of components used for pollution abatement.

Class 9: Use of any waste principally as a fuel or other means to generate energy.

Class 10: The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.

Class 11: Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.

Class 12: Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.

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

INTERPRETATION

Act	The Waste Management Act, 1996 (No. 10 of 1996).
Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
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, including any other material submitted to the Agency in writing by the licensee between the date of the application and the date of grant of this licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BATNEEC	Best Available Technology Not Entailing Excessive Cost as defined in section 5 (2) of the Act.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard.
Bioaerosol	Micro-organisms and/or other tiny biological particles suspended in air (an aerosol of very tiny biological particles).
Commercial waste	As defined in Section 5 (1) of the Act.
Compost	A solid mature product resulting from composting and meeting the quality specified in Schedule J.
Composting	An aerobic treatment method for the decomposition of biodegradable waste.
Condition	A condition of this licence. In any case where this licence refers to a numbered condition, the reference shall be taken to mean the condition and any sub-condition therein which the context of the reference requires that reference is made to.
Containment boom	A boom which can contain spillages and prevent these from entering drains or watercourses.
Cover material	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed with the Agency.
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.
EIS	Environmental Impact Statement.
Emission	As defined in Section 5 (1) of the Act.
Emission Limit Value	Those limits, including concentration limits and deposition levels established in Schedule G.
Environmental Pollution	As defined in Section 5 (1) of the Act.
European Waste Catalogue (EWC)	The EWC is a harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 94/3/EC and any subsequent amendment published in the Official Journal of the European Community.
Facility	That area or areas defined under Condition 1.2.
Foreign matter	Any matter over a 2 mm dimension that results from human intervention and having organic or inorganic constituents such as metal, glass and synthetic polymers (e.g. plastic and rubber) that may be present in the compost but excluding mineral soils, woody material and rocks.
Green waste	Waste wood, plant matter and other vegetation.
Hazardous Waste	As defined in Section 4 (2) of the Act.
Household Waste	As defined in Section 5 (1) of the Act.
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.
Incident	Any reference to an incident in this licence means an incident as defined in Condition 3.1.
Industrial waste	As defined in Section 5 (1) of the Act.
Landfill	As defined in Section 5 (1) of the Act.
Landfill Gas	Gases generated from the landfilled waste.
Leachate	Any liquid percolating through the deposited waste and emitted from or contained within a landfill as defined in Section 5 (1) of the Act.
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^{o}C and atmospheric pressure

	atmospheric pressure.
Licence	A Waste Licence issued in accordance with the Act.
Licensee	Dun Laoghaire - Rathdown County Council, Marine Road, Dun Laoghaire, Co Dublin.
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.
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	At least 12 times per year, at approximately monthly intervals.
Municipal Waste	Municipal waste as defined in Section 5 (1) of the Act.
Night-time	10.00 p.m. to 8.00 a.m.
Non-hazardous waste	Non-Hazardous Waste is any waste which is not a hazardous waste as defined in the Act.
Putrescible waste	Biodegradable waste with the potential to give rise to an offensive odour.
Quarterly	A period of three calendar months, the first period of which commences on the date of grant of this licence
Recovery	As defined in Section 4 (4) of the Act.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
Soil improver	Materials sold as end user products for gardening to be added to the soil to improve at least its physical condition or its physical and biological condition without causing harmful effects.
Specified Emissions	Those emissions listed in Schedule G: Emission Limits of this licence.
Specified Engineering Works	Those engineering works listed in Schedule E: Specified Engineering Works of this licence.
Submit	Unless the context of this licence indicates otherwise, submit in writing to the Agency for its agreement.
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.
Trigger Level	A parameter value which when achieved or exceeded requires certain actions to be taken.
Waste	As defined in Section 4(1) of the Act.
Waste disposal activity	Includes the activities referred to in Section 4 of the Act and listed in the Third Schedule thereto.
Waste recovery activity	Includes the activities referred to in Section 4 of the Act and listed in the Fourth Schedule thereto.
White Goods	Refrigerators, cookers, ovens and other similar appliances.
Working Day	9.00 a.m. to 5.30 p.m. Monday to Friday.
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

1.1. Waste activities at the facility shall be restricted to those listed and described in Schedule A: Waste Activities and required by the licence.

1.2. Waste activities shall be restricted to the area of land outlined in red on Drawing No. BLS/EPA/02A "Ballyogan Waste Licence Application Site Plan", Volume 8 of the application. Any reference in this licence to "facility" shall mean the area thus outlined in red.

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

1.4. This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.

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

a) that only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice;

b) that the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice; and,

c) that the licensee shall carry out any other requirement specified in the notice.

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

Reason: To clarify the scope of this licence.

CONDITION 2 MANAGEMENT OF THE ACTIVITY

2.1 Environmental Management System

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

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

2.2 Schedule of Environmental Objectives and Targets

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

2.2.2 The Schedule shall address a five year period as a minimum and shall be reviewed and submitted annually to the Agency for its agreement.

2.3 Environmental Management Programme

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

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

2.4 Corrective Action

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

2.5 Awareness and Training

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

2.6 Management Structure

2.6.1 Within nine months from the date of grant of this licence and prior to commencement of waste activities at the Recycling Park, the licensee shall submit written details of the management structure of the facility for the agreement of the Agency. Any proposed changes in the management

structure shall be submitted in writing to the Agency for its agreement. Written details of the management structure shall include the following information:

a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence. This shall include details on the management and supervision of the landfill and all units associated with the Recycling Park;

b) a named contact person for communications with the Sanitary Authority;

c) details of the responsibilities for each individual named under a) above;

d) details of the relevant experience, competence and qualifications held by each of the persons nominated under a) above; and

e) contingency arrangements for the absences of the named persons from the facility.

2.7 Communications

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

2.7.2 The licensee shall make available all monitoring results required to be submitted to the Agency for public inspection at the office referred to in Condition 4.5 and in the interim at the offices of Dun Laoghaire - Rathdown County Council.

2.8 Annual Environmental Report

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

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

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

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

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

CONDITION 3 NOTIFICATION AND RECORD KEEPING

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

a) any nuisance caused by the activity

b) any emission which results in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any relevant enactment;

c) any emission which does not comply with the requirements of this licence;

d) any trigger level specified in this licence which is attained or exceeded;

e) any indication that environmental pollution has, or may have, taken place;

f) any occurrence with the potential for environmental pollution; and,

g) any emergency.

3.2 The written record shall include all aspects described in Condition 10.8(a-f).

3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:

a) notify the Agency as soon as practicable and in any case not later than 10.00 am the following working day after the occurrence of any incident;

b) submit the written record required by this condition to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident;

c) in the event of any incident which relates to discharges to surface water, notify the Eastern 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) In the event of any incident which relates to discharges to sewer or surface water, notify the Water Pollution Section of Dun Laoghaire - Rathdown County Council as soon as practicable and in any case not later than 10:00am on the following working day after such an incident.

3.4 Should any further actions be taken after the date of written notification, as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.

3.5 Unless otherwise agreed by the Agency, all documentation submitted to the Agency shall:

(a) be sent to the Agency's headquarters;

(b) comprise one original and three copies;

(c) be formatted in accordance with any written instruction or guidance issued by the Agency;

(d) include whatever information as is specified in writing by the Agency;

(e) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;

(f) be submitted in accordance to the relevant reporting frequencies specified by this licence; and

(g) in the case of results of any environmental monitoring, be accompanied by a written interpretation setting out their significance.

3.6 Copies of all environmental monitoring data obtained by the licensee which relates to the facility shall be forwarded to the Agency at the frequencies set out in Schedule D: Recording and Reporting to the Agency of this licence.

3.7 Unless otherwise agreed with the Agency, all documentation and records required to be made under this licence, shall be retained by the licensee.

3.8 The licensee shall provide additional copies of any documentation and records referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.

3.9 The licensee shall keep the following documents at the facility office referred to in Condition 4.5 and prior to its construction and operation at an office at the landfill.

a) the current waste licence relating to the facility;

b) the current EMS for the facility;

c) the previous year's AER for the facility;

d) all written procedures produced by the licensee which relate to the licensed activities.

3.10 The licensee shall maintain a written record for each load of waste arriving at or departing from the facility. The licensee shall record the following:

a) the name of the carrier;

b) the vehicle registration number (this is not necessary for waste delivered by the public to the civic waste facility);

c) the name of the producer(s)/collector(s) of the waste as appropriate and where appropriate the waste facility from which the waste comes;

d) whether the waste is for recovery or for disposal;

e) the location at the facility to or from which waste is delivered or removed and the process to which the waste is subjected to in the facility;

f) a description of the waste including the associated EWC codes;

g) the quantity of the waste, recorded in tonnes;

h) the name of the person checking the load; and,

i) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

3.11 The licensee shall maintain a written record of the type and quantity, recorded in tonnes, of all wastes recovered or disposed of at the facility.

3.12 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.

3.13 The licensee shall assign and clearly label a unique reference code to each container at the Civic Waste Facility. A written record shall be kept for each load of waste departing from the facility. The following shall be recorded:

a) the date on which filling of the container commenced;

b) the date on which the container was filled;

c) the number of sealed containers being stored overnight;

d) the name of the carrier;

e) the vehicle registration number;

f) the destination of the waste (facility name and waste licence/permit number as appropriate);

g) a description of the waste (if recovered or rejected waste, the specific nature of the waste);

h) the quantity of waste, recorded in tonnes;

i) the name of the person checking the load; and,

j) the time and date of departure.

3.14 Unless otherwise agreed in advance in writing with the Agency, the licensee must give at least fourteen days notice to the Agency of the following events:

a) the cessation of waste disposal activities at the facility for a period in excess of twenty-eight days;

b) the re-commencement of waste disposal activities at the facility following a period of cessation referred to at a) above.

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

CONDITION 4 SITE INFRASTRUCTURE

4.1. The licensee shall establish all infrastructure referred to in this licence as agreed in advance in writing with the Agency.

4.2. Site Notice Board

4.2.1. Within three months of the date of grant of this licence, the licensee shall provide and maintain a Site Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the identification board shall be 1200 mm by 750 mm. A similar Site Notice Board shall be provided and maintained at the entrance to the Recycling Park prior to commencement of waste activities.

4.2.2. The board shall clearly show:

a) the name and telephone number of the facility;

b) the normal hours of opening;

c) the name, address and telephone number of the licence holder;

d) an emergency out of hours contact telephone number;

e) the name, address and telephone number of the operator of the facility;

f) the licence reference number;

g) where and when environmental monitoring information relating to the facility can be obtained.

4.3. Site Security

4.3.1. The licensee shall carry out a review of the site security arrangements and shall ensure that all active areas of the site are secured.

4.3.2. Unless otherwise agreed with the Agency, the licensee shall:

a) provide and maintain fencing (except the 1.5m high post and rail fence which is subject to agreement under Condition 4.27.2) and gates at the locations shown on Drawing No. BRP/EPA/07 'Ballyogan Recycling Park Details of Site Boundaries and Security Gates', Volume 13 of the application.

b) submit to the Agency for its agreement and prior to its construction, fencing and gate design details. This shall include a stone wall facade to the fencing designated by the: (i) 2.5m high concrete block wall; (ii) composite wall and rail; and (iii) composite wall and rail bays on Drawing No. BRP/EPA/07 'Ballyogan Recycling Park Details of Site Boundaries and Security Gates'.

4.3.3. The licensee shall remedy any defect in the gates and/or fencing as follows:

c) a temporary repair shall be made by the end of the working day; and,

d) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days or as otherwise agreed in writing with the Agency.

4.3.4. Gates shall be locked shut when the facility is unsupervised.

4.3.5. The licensee shall, prior to commencement of waste operations at the Recycling Park, install and maintain a CCTV monitoring system at the main entrance gate of the Recycling Park.

4.3.6. Unless otherwise agreed with the Agency, the licensee shall provide and maintain access control kiosks at the locations shown on Drawing No. BRP/EPA/08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13.

4.4. Roads and Hardstanding

4.4.1. Unless otherwise agreed with the Agency, the licensee shall provide and maintain circulation areas and internal access roads within the Recycling Park as described in Section 3.3 and as shown in Figure 3.3 of the EIS.

4.4.2. Unless otherwise agreed with the Agency, circulation areas and internal access roads, referred to in Condition 4.4.1 above, shall be either hardstanding or paved and shall at minimum consist of the following make-up or equivalent:

a) hardstanding areas shall be constructed to the following specification; 150mm concrete slab overlying 200 mm Clause 804 granular fill; and

b) roads shall be constructed of 40mm wearing course of macadam, 60mm base course of macadam and 200 mm Clause 804 granular fill

4.4.3. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, a proposal on the feasibility of providing a dedicated slip road or link between the Recycling Park and the planned Carrickmines Interchange of the South Eastern Motorway.

4.4.4. Prior to commencement of waste activities, the licensee shall place signs in the Recycling Park to indicate the location of each unit within the Recycling Park and shall provide prominently positioned signposts to direct traffic around the facility.

4.5. The licensee shall provide and maintain an office on the facility, at the location called 'Amenity/Admin Block' shown in Drawing No. BRP/EPA/08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13 of the application. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.

4.6. The licensee shall provide and maintain a working telephone and facsimile machine in the office specified in Condition 4.5 above.

4.7. Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, a drawing(s) detailing a Waste Inspection Area and a Waste Quarantine Area for waste accepted at Ballyogan Landfill.

4.8. Weighbridge

4.8.1. Unless otherwise agreed with the Agency, the licensee shall maintain a weighbridge at the landfill facility at the location shown on Drawing No. BLS/EPA/06B 'Ballyogan Landfill Site - Site Infrastructure', Volume 8 of the application.

4.8.2. Unless otherwise agreed with the Agency and prior to commencement of waste activities at the Recycling Park, the licensee shall provide and maintain weighbridges at the locations shown on Drawing No. BRP/EPA/08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13 of the application.

4.9. Wheelwash

4.9.1. Unless otherwise agreed with the Agency, the licensee shall maintain a wheelwash at the landfill at the location shown in Drawing No. BLS/EPA/06B 'Ballyogan Landfill Site – Site Infrastructure', Volume 8. The wheel wash shall be inspected on a daily basis and drained as required. Accumulated silt shall be removed and disposed of at the working face. The wheelwash water shall drain only to the leachate collection system or as otherwise agreed with the Agency.

4.9.2. Unless otherwise agreed with the Agency a vehicle washing area shall be provided and maintained at the location shown on Drawing No. BRP/EPA/08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13 of the application. Wash water shall drain only to foul sewer.

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

4.11. Sewage arising on-site at the landfill shall be collected and disposed of at a suitable Waste Water Treatment Plant or discharged to the foul sewer as shown on Drawing No. BRP/EPA/09 'Ballyogan Recycling Park Roads and Sewer Layout', volume 13, or as otherwise agreed with the Agency.

4.12. The licensee shall provide and maintain bunding/litter screens around the active landfill area during waste disposal operations.

4.13. Prior to commencement of waste operations at the Recycling Park, the licensee shall provide and maintain a meteorological station at a location to be agreed with the Agency.

4.14. Storage Areas

4.14.1 The licensee shall provide a bunded fuel storage area at a location to be agreed with the Agency. Fuels shall only be stored at this agreed location. Mobile tankers shall be kept in this bunded area. Prior to construction of this area no fuel shall be stored on site.

4.14.2 All tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, tank and drum storage areas shall, as a minimum be bunded, either locally or remotely, to a volume not less than the greater of the following:

(a) 110% of the capacity of the largest tank or drum within the bunded area; or

(b) 25% of the total volume of substance which could be stored within the bunded area.

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

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

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

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

4.15. Specified Engineering Works

4.15.1. The licensee shall submit written proposals for all Specified Engineering Works, as defined in Schedule E: Specified Engineering Works, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

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

4.15.3. 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) where relevant a drawing and sections showing the location of all samples and tests carried out;

e) where relevant daily records sheets/diary;

f) name(s) of contractor(s)/individual(s) responsible for undertaking the engineering works;

g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;

h) records of any problems and the remedial works carried out; and

i) any other information requested in writing by the Agency.

4.16. Surface & Foul Water Management

4.16.1. The licensee shall provide and maintain surface water and foul water infrastructure at the Recycling Park. The surface and foul water infrastructure shall be as detailed in Drawing No. BWMC/DRAIN/03 'Ballyogan Waste Management Centre Drainage Layout', Volume 11 and as described in 'Proposed Drainage Arrangements' Section 3.6 of the EIS but shall incorporate any agreed modifications arising from conditions of this licence. Prior to construction the licensee shall submit to the Agency for its agreement revised surface water and foul water infrastructure.

4.16.2. Unless otherwise agreed with the Agency, the licensee shall test and report on the integrity, in accordance with Condition 4.14, of the foul tank that collects contaminated water only from the civic waste facility. The tank shall be fitted with a level indicator.

4.16.3. The licensee shall prior to commencement of construction at the Recycling Park, install protective fencing on either side of the Ballyogan Stream as described in Section 7.7.1.1 of the EIS.

4.16.4. Unless otherwise agreed by the Agency, the licensee shall construct a Stormwater Attenuation Facility at the location shown on Drawing No. BRP/EPA 08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13.

The design of this unit shall incorporate:

a) the details described in Section 3.3.3 'Design Requirements for the Stormwater Wetlands', Volume 11;

b) details shown on Drawing No. BWMC/Drain/04 'Ballyogan Waste Management Centre Plan and Sections of Stormwater Wetlands', Volume 11;

c) details given on p8 'New Wetlands or Stormwater Ponds' of the 'Ecological Study on Flora', Volume 9 of the application;

d) the inlet(s) to the wetlands shall be located on the western side of the wetlands and shall be evenly distributed;

e) an adjustable discharge outlet to the Ballyogan stream; and

f) the liner of the stormwater wetlands shall be a composite liner consisting of either a basal mineral layer of at least 1m in thickness with a permeability of less than or equal to 1×10^{-9} m/s or an artificial barrier providing equivalent protection overlain by a 2mm thick high density polyethylene (HDPE) layer. The sidewalls shall be designed and constructed to achieve an equivalent protection. The integrity of the liner shall be tested prior to use and as agreed with the Agency.

4.17. Landfill Leachate Management

4.17.1. Unless otherwise agreed by the Agency, the licensee shall not recirculate leachate over or into the waste body.

4.17.2. The licensee shall within twelve months of the date of grant of this licence, install a leachate management system for the landfill facility. This shall include (i) the implementation of the recommendations presented in Section 9 of the Leachate Management Plan, Interim Report submitted as Volume 4 of Article 16 information in August 1999 and (ii) methods to reduce leachate head throughout the landfill.

4.17.3. The licensee shall construct the Modified Leachate Lagoon referred to in Volume 11 of the application.

Design details shall incorporate:

a) how the proposed ground level for the organic waste and green waste compost area shall be reached;

b) soil testing in the lagoon area;

c) details on soil removal and any remediation works necessary;

d) the liner of the modified lagoon shall be a composite liner consisting of either a basal mineral layer of at least 1m in thickness with a permeability of less than or equal to 1×10^{-9} m/s or an artificial barrier providing equivalent protection overlain by a 2mm thick high density polyethylene (HDPE) layer. The sidewalls shall be designed and constructed to achieve an equivalent protection.

e) maintenance of a minimum freeboard of 0.75m in the modified lagoon; and

f) integrity testing of the lagoon.

4.17.4. The licensee shall within twelve months of the date of grant of this licence install plant to remove dissolved methane in effluent being discharged to sewer. In the interim the licensee shall put in place measures to reduce the level of dissolved methane in the effluent being discharged to sewer.

4.18. Landfill Gas Management:

4.18.1. Unless otherwise agreed with the Agency, the licensee shall, within twelve months of the date of grant of this licence, install systems for the collection and recovery or flaring of landfill gas in all areas of the landfill site not already covered by an active collection system. All landfill gas control systems shall be located in such a manner as to minimise the effect of noise and exhaust emissions on nearby residences.

4.18.2. In the event that landfill gas at former landfill areas is unsuitable for recovery or flaring, the licensee shall install active or passive venting systems.

4.18.3. Landfill Gas Flare

Within nine months of the date of grant of this licence, the licence shall upgrade open gas flare units to enclosed flare units.

4.18.4. Unless otherwise agreed with the Agency, condensate from the landfill gas management collection system shall be drained to the leachate collection system.

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

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

4.19. Capping

4.19.1. Unless otherwise agreeed with the Agency, final capping shall at minimum consist of the following:

- top soil (150 -300mm) and subsoils of at least 1m total thickness;
- drainage layer of 0.5m thickness having a minimum hydraulic conductivity of $1x10^{-4}$ m/s;
- compacted mineral layer of a minimum 0.6m thickness with a permeability of less than $1x10^{-9}$ m/s or a geosynthetic material (eg GCL) or similar that provides equivalent protection; and
- gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.

Consideration should be given to the inclusion of a flexible membrane liner in the capping system.

4.20. Soil Stripping/Storage

4.20.1. Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, the location at the facility for temporary storage of topsoil, stripped during the construction phase of the Recycling Park and to be used for landscaping/rehabilitation of verges and landfill.

4.21. Civic Waste Facility

4.21.1. Unless otherwise agreed with the Agency, within twelve months of the date of grant of this licence, the licensee shall provide and maintain a Civic Waste Facility at the location shown on Drawing No. BRP/EPA/08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13. Prior to commencement of waste operations, the licensee shall submit to the Agency for its agreement, location details of waste receptacles and storage area for household hazardous waste and end of life vehicles. All receptacles shall be clearly labelled to indicate their contents.

4.22. Green Waste Composting

4.22.1. Unless otherwise agreed with the Agency, the licensee shall within eighteen months of the date of grant of this licence, provide and maintain a green waste composting area and associated infrastructure at the location shown on Drawing No. BRP/EPA 08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13.

4.22.2. All leachate generated from this activity shall be collected and drained to the lagoon associated with the unit, unless otherwise agreed with the Agency.

4.23. Organic Waste Composting

4.23.1. Unless otherwise agreed with the Agency, the licensee shall within eighteen months of the date of grant of this licence, provide and maintain an organic waste composting unit and associated infrastructure at the location shown on Drawing No. BRP/EPA/08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13 and as described in Section 3.2.5 of the EIS.

4.23.2. Each sealed chamber shall be designed to operate independently.

4.23.3. All leachate generated shall be collected and drained to the lagoon associated with the unit, unless otherwise agreed with the Agency.

4.23.4. The licensee shall provide and maintain infrastructure necessary to remove contaminants from the compost after Stage 2 composting at a location in the unit to be agreed with the Agency.

4.23.5. Unless otherwise agreed with the Agency, the licensee shall provide and maintain an air extraction system (scrubber/ humidifier / biofilter). Prior to construction of this system, the licensee shall submit details on the biofilter of the following for the Agency's agreement:

a) loading rate;

b) empty bed detention time;

c) depth of media; and

d) contingency arrangements for removal of media.

4.24. Baling Station

4.24.1. Unless otherwise agreed with the Agency, the licensee shall provide and maintain a baling station:

a) at the location shown on Drawing No. BRP/EPA/08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13;

b) as detailed in Drawing No. BRP/EPA/13 'Ballyogan Recycling Park Detailed Baling Station Layout', Volume 13; and

c) as described in Section D.2.3 (a) Baling Station, 'Description of Facility', Volume 1B of the application.

4.24.2. Unless otherwise agreed with the Agency, the licensee shall provide two balers at the baling station.

4.24.3. Unless otherwise agreed with the Agency, the licensee shall provide and maintain an air extraction system within this unit as described in section 2.1 Baling Station, Volume 11 of the licence application, but which shall incorporate an odour control system.

4.25. Materials Recovery / Recycling

4.25.1. The licensee shall relocate the Materials Recovery/Recycling building within the facility so that it is at minimum 20m from the facility boundary. Within three months of the date of grant of this licence, the licensee shall submit to the Agency a drawing showing the revised location of this building. The feasibility of realigning ESB transmission lines should be examined if necessary.

4.26. Heat Energy

4.26.1. Within twelve months of the date of grant of this licence and prior to construction of the organic waste composting unit and green waste composting unit, the licensee shall submit proposals regarding the utilisation of heat energy from the:

a) Landfill Gas Combustion Plant;

b) Organic Waste Composting Unit; and

c) Green Waste Composting Unit.

at other premises/facilities at and in the vicinity of the facility.

4.27. Archaeology

4.27.1. Unless otherwise agreed with the Agency, the licensee shall implement the remedial and mitigation measures contained in the Environmental Impact Statement (Section 13.5, p206) and the recommendations contained in Article 16 Response - Volume 6 of 6.

4.27.2. Within six months of the date of grant of this licence and prior to commencement of construction works, the licensee shall submit to the Agency for its agreement, a pre-agreed proposal with Dúchas on the nature of the permanent barrier around the Pale Ditch, the method of maintaining this earthworks and details on an information notice relating to this monument.

4.28. Within six months of the date of grant of this licence and prior to commencement of construction works, the licensee shall submit to the Agency for its agreement, a pre-agreed feasibility proposal with Dúchas on the relocation of badgers within the facility.

4.29. Within nine months of the date of grant of the licence, the licensee shall install landscape features within and around the Recycling Park. This shall incorporate planting of trees and shrubs recommended in Section 5.2 Terrestrial Ecology, Volume 9 of the application.

4.30. The licensee shall employ an architect to apply an architectural finish to the building units in the Recycling Park.

4.31. Unless otherwise agreed with the Agency, the licensee shall not establish an electricity supply substation at the facility.

Reason: To provide for the protection of the environment

CONDITION 5 WASTE ACCEPTANCE AND HANDLING

5.1. No hazardous waste shall be accepted at the facility except for household hazardous waste which may be accepted at the Civic Waste Facility in the Recycling Park.

5.2. Waste quantities to be accepted at and removed from the facility shall be as set out below unless otherwise agreed with the Agency:

a) the quantity of waste to be accepted at and removed from the facility shall not exceed 400,000 tonnes per annum. This shall include materials used for the capping / restoration of the landfill;

b) waste for disposal to Ballyogan landfill shall not exceed 100,000 tonnes per annum;

c) the quantity of waste to be accepted at the Recycling Park shall not exceed 210,000 tonnes per annum;

d) the combined quantity of waste for disposal from the Baling Station and that to Ballyogan landfill shall not exceed 120,000 tonnes per annum;

e) the quantity of household hazardous waste accepted at the Civic Waste Facility shall not exceed 100 tonnes per annum; and

f) only waste quantities listed in Schedule H: Waste Quantities shall be recovered or disposed of at the individual units of the facility.

5.3. Each load of waste arriving at the facility shall be visually inspected prior to unloading in accordance with “Level 3: On-site Verification” outlined in the Agency’s Draft Manual on Waste Acceptance. Any wastes deemed to be in contravention of this licence and/or unsuitable for disposal at this facility shall be removed for recovery / disposal at an appropriate alternative facility.

5.4. Unless otherwise agreed with the Agency, waste acceptance and handling at the units in the Recycling Park shall be as described in Attachment E2 – Waste Acceptance Procedures and Attachment E3 - Waste Handling Procedures of Volume 1B.

5.5. Hours of Waste Acceptance and Removal

5.5.1. Hours of waste acceptance and removal at the facility shall be those set out in Schedule I: Hours of Waste Acceptance and Removal.

5.6. Scavenging shall not be permitted at the facility.

5.7. No smoking shall be allowed on the facility other than in the Amenity/Admin Building as shown on Drawing No. BRP/EPA/08 'Ballyogan Recycling Park Details of Infrastructure', Volume 13.

5.8. Ballyogan Landfill

5.8.1. Only those waste types listed in Table E.1.1 and Table E.1.3 of Volume 1A of the application shall be disposed of in the landfill unless prior agreement of the Agency has been obtained.

5.8.2. Unless otherwise agreed with the Agency, within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement procedures for the acceptance, handling and processing of wastes for deep burial. This shall include provisions to ensure that excavations of waste to allow deep burial do not cause odour or other nuisances.

5.8.3. Swill waste (from visiting vessels to ports in the Dublin area) shall be disposed of to landfill by deep burial in accordance with the licence granted by the Department of Agriculture Food and Forestry.

5.8.4. Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.

5.8.5. Unless the prior written agreement of the Agency is given, the following shall apply at the landfill:

a) only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials;

b) the working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3; and,

c) all waste deposited at the working face shall be compacted as soon as is practicable and at any rate prior to the end of the working day.

5.8.6. The working face of the operational cell shall, at the end of each day, be covered with material suitable to minimise any nuisances occurring. 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.

5.8.7. Within six months of the date of grant of this licence, cover material shall be placed across the whole landfill so that no waste other than cover material or material suitable for specified engineering works is exposed.

5.8.8. A steel wheeled compactor or other such vehicle as agreed with the Agency shall be used for compacting all waste other than that used for restoration or construction purposes.

5.8.9. In order to prevent the formation of voids, all hollow objects and large articles deposited on the site shall be crushed, broken up, flattened or otherwise treated.

5.8.10. Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over without prior agreement from the Agency.

5.9. Baling Station

5.9.1. Unless otherwise agreed with the Agency, only municipal waste shall be accepted at the baling station.

5.9.2. Unless otherwise agreed with the Agency only baled waste for disposal shall be removed from the baling station to Arthurstown Landfill.

5.9.3. All wastes accepted into the baling station for baling shall be baled within 48 hours.

5.9.4. At the end of the working week (16.00hrs Saturday) the floor of the baling station, the hopper and balers will be cleaned of all waste.

5.9.5. Unless subject to the prior written agreement of the Agency, a maximum of 8 enclosed waste containers, shall be stored on the facility overnight at the dedicated parking bays.

5.9.6. Unless otherwise agreed with the Agency, acceptance of waste for disposal to Ballyogan Landfill shall stop within six months of commencement of waste acceptance to the Baling Station.

5.10. Organic Waste Composting

5.10.1. Unless otherwise agreed with the Agency, only source segregated organic (i.e. kitchen and garden) waste, green waste and compost shall be used in the operation of the organic waste composting facility.

5.10.2. All wastes accepted to the organic waste composting unit shall be introduced into the compost process within 24 hours of delivery.

5.10.3. No waste shall be left on the floor of the reception area from the close of operation on Saturday until Monday morning opening unless otherwise agreed with the Agency.

5.10.4. The waste shall be maintained at operating conditions of 55°C or greater for a minimum of three days.

5.10.5. Unless otherwise agreed with the Agency, compost shall meet the quality criteria set out in Schedule J: Compost Quality.

5.11. Green Waste Composting

5.11.1. Green waste only shall be used in the green waste composting facility.

5.11.2. Putrescible waste shall be formed into a windrow within one working day of receipt at site.

5.11.3. The licensee shall maintain a daily written record of temperature and turning of the compost.

5.11.4. Unless otherwise agreed by the Agency, using the windrow composting method, the waste shall attain a temperature of 55°C or greater for at least 15

days during the composting period. During the high temperature period, the windrow shall be turned at least five times.

5.11.5. Unless otherwise agreed with the Agency, compost shall meet the quality criteria set out in Schedule J: Compost Quality.

5.12. Materials Recovery/Recycling Unit

5.12.1. Only source segregated waste or waste collected from Bring Centres or Kerb side collection shall be used in the Materials Recycling / Recovery Facility unless prior agreement of the Agency has been obtained.

5.12.2. The licensee shall prior to waste acceptance, submit to the Agency for its agreement, details of waste acceptance and handling procedures.

5.13. Civic Waste Facility

5.13.1. Only municipal waste shall be accepted at the Civic Waste Facility unless subject to the prior agreement of the Agency. The Civic Waste Facility shall only be used by private vehicles. The facility shall not be used as a transfer station for disposal of waste by commercial waste disposal contractors or local authority waste collection vehicles.

5.13.2. Green waste deposited at the civic waste facility shall be removed by the end of the day to the green waste composting unit.

5.13.3. The civic waste units at the landfill shall close on commencement of waste intake to the Civic Waste Facility in the Recycling Park.

5.13.4. The licensee shall de-gas or arrange for the de-gassing of CFC's from all refrigerators accepted at the facility.

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

CONDITION 6 ENVIRONMENTAL NUISANCES

6.1. The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by vermin, birds, flies, mud, dust and odours. Written records shall be made of all inspections and any actions taken as a result of these inspections.

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

6.3. Litter Control

All loose litter accumulated within the facility and its environs, excluding that which is deposited on the working face, shall be removed subject to the agreement of the landowners and appropriately disposed of on a daily basis. Within three months of the date of grant of this licence, a program for the removal of existing litter at the facility or the immediate area of the facility shall be submitted to the Agency for approval.

6.4. Any waste placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed by the licensee immediately and in any event by 10:00am of the next working day, after such waste is discovered. Such waste shall be disposed of at an appropriate facility.

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

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

6.7. The licensee shall ensure that vermin, birds, flies, mud, dust and odours do not give rise to nuisance at the facility or the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution or contravene any national statutory protection granted in respect of protected species.

6.8. The licensee shall submit proposals for road maintenance/improvements, traffic control and traffic management along the access roads to the Agency for its agreement within six months of the date of grant of this licence.

6.9. The licensee shall ensure the layout, orientation and type of lighting provided at the Recycling Park or any other part of the facility does not result in significant impairment of, or significant interference with adjoining properties.

Reason: To provide for the control of nuisances

CONDITION 7 EMISSIONS AND ENVIRONMENTAL IMPACTS

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

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

7.3. Noise & Vibration

7.3.1. Activities on-site shall not give rise to noise levels off-site, at noise locations set out in *Schedule F: Monitoring* or at the facility boundary, which exceed the following sound pressure limits (Leq,30 minutes):

Daytime:	55 dB(A)
Night-time:	45 dB(A).

7.3.2. There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.

7.3.3. Vibrations, which arise from activities on the facility, shall not give rise to peak particle velocity levels in excess of 8mm/s at or beyond the facility boundary.

7.4. 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.

7.5. Landfill Gas

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

a) Methane, greater than or equal to 1.0% v/v; and

b) Carbon dioxide, greater than or equal to 1.5% v/v.

7.5.2. Within 9 months of the date of grant of this licence, landfill gas flare units shall meet the emission limit values specified in *Schedule G: Emissions Limits*.

7.5.3. 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 at 5% oxygen.

7.6. Organic Waste Composting

7.6.1. Unless otherwise agreed with the Agency, emissions to the atmosphere shall only be made at emission point EP/9 (grid reference to be submitted to the Agency for its agreement prior to commencement of this waste activity).

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

7.7.1. 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.

7.7.2. 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.

7.8. The trigger level for PM_{10} from the facility measured at any location on the boundary of the facility is:

a) PM_{10} greater than 50µg/m^3 for a daily sample.

7.9. There shall be no direct emissions to groundwater.

7.10. Emissions to Surface Water

7.10.1. Unless otherwise agreed with the Agency, surface water shall only be discharged to the Ballyogan Stream via the Stormwater Wetlands at the location of the outfall shown on Drawing No. BWMC/DRAIN/03 'Ballyogan Waste Management Centre Drainage Layout', Volume 11 of the application.

7.10.2. In the event that the lowering of the water table is required for construction of the Recycling Park, the licensee may pump groundwater from the localised de-watering points into the Ballyogan Stream subject to the requirements of Condition 4.15.

7.10.3. No substance shall be discharged in a manner, or at a concentration which will result in the deterioration of the receiving water quality, or which following initial dilution causes tainting of fish or shellfish.

7.11. Emissions to Sewer

7.11.1. Unless otherwise agreed with the Agency and the Sanitary Authority, discharge of leachate to sewer shall be via the leachate discharge pipework indicated on Drawing No. BWMC/Drain/03 'Ballyogan Waste Management Centre Drainage Layout', Volume 11 of the application.

7.11.2. The effluent shall be screened prior to discharge to the sewer to remove gross solids which may give rise to blockages in the sewer.

7.11.3. No substance shall be present in emissions to sewer in such concentrations as would constitute a danger to sewer maintenance personnel working in the sewerage system, or as would be damaging to the fabric of the sewer, or as would interfere with the biological functioning of a downstream wastewater treatment works.

7.11.4. No discharge or emission to sewer shall take place which gives rise to any reaction within the sewer or to the liberation of by-products which may be of environmental significance.

7.11.5. The licensee shall ensure that the discharge shall not contain dissolved methane, petroleum spirits or organic solvents (including chlorinated organic solvents), at concentrations which would give rise to flammable or explosive vapours in the sewer.

7.11.6. The licensee shall permit authorised persons of the Agency and the Sanitary Authority to inspect, examine and test, at all reasonable times, any works and apparatus installed, in connection with the discharge or emission, and to take samples of the discharge or emission.

7.11.7. Non-trade effluent wastewater (e.g. firewater, accidental spillage) which occurs on-site shall not be discharged to the sewer without the prior authorisation of the Sanitary Authority.

7.11.8. The licensee shall provide and maintain an inspection chamber in a suitable position in connection with each pipe through which a discharge or emission is being made. Each such inspection chamber or manhole shall be constructed and maintained by the licensee so as to permit the taking of samples of the discharge.

7.11.9. The licensee shall submit monitoring results to the Sanitary Authority (Drainage Section of Dun Laoghaire-Rathdown County Council) on a quarterly basis.

7.11.10. Within twelve months of the date of grant of this licence dissolved methane in effluent being discharged to sewer shall meet the emission limit value specified in *Schedule G: Emissions Limits*.

7.12. Emission limit values for emissions to sewer in this licence shall be interpreted in the following way:-

7.12.1. Continuous monitoring

(i) No flow value shall exceed the specified limit

7.12.2. Non-Continuous monitoring

(i) Eight out of ten consecutive results, calculated as daily mean concentration or mass emission values on the basis of flow proportional composite sampling shall exceed 1.2 times the emission limit value.

(ii) No grab sample shall exceed 1.2 times the emission limit value.

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

CONDITION 8 RESTORATION / DECOMMISIONING AND AFTERCARE

8.1. Unless otherwise agreed with the Agency, the final profile of the Ballyogan landfill shall be as shown in Drawing No. BLS/EPA/10A "Ballyogan Landfill Site Final Capping Contours" Volume 8 of the Application but shall incorporate any modifications agreed by the Agency under Condition 10.9 in relation to side slopes.

8.2. Within six months of the date of grant of the licence, the licensee shall submit for the Agency's agreement revised Restoration and Aftercare Plans for Ballyogan landfill incorporating the details given in Attachments G.1 and G.2 of Volume 1a of the application. The revised plan shall include time scales for the implementation of these details and shall include afteruse details of areas not already designated with an afteruse.

8.3. Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate.

8.4. No material or object that is incompatible with the proposed restoration of the site shall be present within one metre of the final soil surface levels.

8.5. In areas where tree planting is proposed to be carried out above waste filled areas a synthetic barrier shall be used to augment the clay cap and topsoil and subsoil depths shall be a minimum of 1m unless otherwise agreed in advance in writing with the Agency.

8.6. Unless agreed otherwise with the Agency, the decommissioning and aftercare of the Recycling Park shall be as detailed in Attachments G.1 'Decommissioning' and G.2 'Aftercare', Volume 1B of the application.

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

CONDITION 9 ENVIRONMENTAL MONITORING

9.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in Schedule F: Monitoring and as specified in the Conditions of this licence.

9.2. Landfill Gas

9.2.1. Prior to commencement of waste operations in the Recycling Park, the licensee shall submit to the Agency for its agreement details of the permanent gas monitoring system to be installed in site buildings.

9.2.2. All landfill gas monitoring equipment used for monitoring landfill gas under the requirements of this licence shall be certified as being intrinsically safe.

9.2.3. Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, details on the location, grid references and installation time scale of gas monitoring wells denoted by P in Drawing No. BLS/EPA/12B 'Ballyogan Landfill Site Monitoring Points', Volume 8.

9.2.4. Landfill Gas Flare

a) Flare unit efficiency shall be tested within six months of the date of grant of this licence and once every three years thereafter.

9.2.5. Landfill Gas Combustion Plant

a) Within four months of the date of grant of licence, the licensee shall install continuous carbon monoxide monitors on the outlets of the two gas engines.

9.3. Groundwater

9.3.1. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, details of all private wells within 500m of the facility. The licensee shall monitor any such wells, subject to the agreement of the well owners, in accordance with the monitoring programme set out in *Schedule F: Monitoring*.

9.3.2. Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement details, on the location, grid references and installation time scale of monitoring wells MW5, MW6, and MW7 shown in Drawing No. BLS/EPA/12B 'Ballyogan Landfill Site Monitoring Points', Volume 8.

9.4. The licensee shall inspect on a daily basis leachate sumps. Written records shall be made of all inspections and any actions taken as a result of these inspections.

9.5. Within three months of the date of grant of this licence, the licensee shall submit a report on the present state of monitoring infrastructure. Any damaged monitoring infrastructure must be replaced within six months of the date of grant of licence.

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

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

9.8. The licensee shall amend the frequency, locations, methods and scope of monitoring, sampling, analyses and investigations only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested

in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.

9.9. Unless otherwise agreed with the Agency, a written record shall be kept of the names, qualifications and a summary of relevant experience of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring.

9.10. The licensee shall maintain all sampling and monitoring points, and clearly label and name (including national grid number) all sampling and monitoring locations, so that they may be used for representative sampling and monitoring.

9.11. Unless otherwise agreed in advance with the Agency, monitoring infrastructure which proves to be unsuitable for its purpose shall be replaced within three months of monitoring results indicating that the monitoring infrastructure is damaged or unsuitable.

9.12. Within six months of the date of grant of this licence, and annually thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility and provide a report on that assessment to the Agency.

9.13. All on-site monitoring points as described in Condition 9 shall be tagged in site with their agreed sampling point codes within ten months of the date of grant of this licence.

9.14. A topographical survey including the void space shall be carried out within three months of the date of grant of this licence. It shall be repeated annually thereafter. The survey shall be in accordance with any written instructions issued by the Agency.

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

CONDITION 10 CONTINGENCY ARRANGEMENTS

10.1. The licensee shall, within twelve months of the date of grant of this licence, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment.

10.2. Fire Control

10.2.1. The licensee shall ensure that appropriate fire safety and protection measures are incorporated at the facility. This shall include measures (ii) to (viii) detailed in Section 3.7.2.1 of the EIS ((ii) Sprinkler System – Baling Station, (iii) Automatic Fire Detection and Alarm Systems, (iv) Fire Brigade Access to Buildings and Site Infrastructure, (v) Passive Fire Protective Features, (vi) Manual Fire Fighting Equipment, (vii) Security Measures, (viii) Fire Safety Management) and those described in Section 3.7.2.3 of the EIS relating to fire water retention in the Stormwater Wetlands.

10.2.2. Within nine months of the date of grant of this licence and prior to construction of the Materials Recovery / Recycling unit, the licensee shall submit a report to the Agency for its agreement in respect of the firewater requirements available at the facility.

10.3. 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.

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

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

10.6. In the event that monitoring of local wells (identified in Condition 9) indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an incident. The licensee shall submit to the Agency for its agreement and within a time specified in writing by the Agency, written proposals for the provision of an alternative supply of water to those affected.

10.7. In the event that monitoring should indicate contamination of water in the stormwater wetlands, the outlet penstock shall be closed and the contaminated water shall be pumped to the leachate lagoon or other agreed location, until such time as the source of the contamination has been identified and appropriate measures introduced to prevent further contamination of suffice water.

10.8. Unless otherwise notified in writing by the Agency, in the event that any monitoring, sampling, complaints or observations indicate that an incident has, or may have, taken place, the licensee shall immediately:

a) identify the date, time and place of the incident;

b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission;

c) isolate the source of the emission;

d) evaluate the environmental pollution, if any, caused by the incident;

e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;

f) provide a proposal to the Agency for its agreement within one month to:

i) identify and put in place measures to avoid reoccurrence of the incident; and

ii) identify and put in place any other appropriate remedial action.

10.9. In the event that monitoring of the slide slopes of the facility indicate that there may be a risk of slope failure, this will be treated as an incident and a proposal for remediation action submitted to the Agency for its agreement within one month of the date of the monitoring being carried out.

Reason: To provide for the protection of the environment.

CONDITION 11 CHARGES AND FINANCIAL PROVISIONS

11.1 Agency Charges

11.1.1 The licensee shall pay to the Agency an annual contribution of £22,753 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2001 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Consumer Price Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2000 the licensee shall pay a pro rata amount from the date of this licence to 31st December 2000. This amount shall be paid to the Agency within one month of the date of grant of this licence.

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

11.2 Financial Provision for Closure, Decommissioning, Restoration and Aftercare

11.2.1 The licensee shall from a date to be set by the Agency establish and maintain a fund or written guarantee, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Decommissioning, Restoration and Aftercare Plans required by Condition 8. The type of fund and means of its release/recovery shall be agreed by the Agency prior to its establishment.

11.2.2 The fund shall be maintained in an amount always sufficient to underwrite the current Restoration, Decommissioning and Aftercare Plan.

11.2.3 The licensee shall revise the cost of restoration, decommissioning and aftercare annually and any details of the necessary adjustments to the fund 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.

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

$$Cost = (ECOST \times WPI) + CiCC$$

Where:

Cost = Revised restoration, decommissioning and aftercare cost

ECOST = Existing restoration, decommissioning 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.

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

SCHEDULE A :Waste Activities

Activities authorised by the licence shall be restricted to those described below.

Waste Management Act, 1996: Third Schedule [Note 1]	
Class 1.	**Deposit on, in or under land (including landfill):**
	This activity is limited to the landfilling of Non-hazardous Waste at the facility
Class 4.	**Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:**
	This activity is limited to the storage of leachate and stormwater
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 engineering works on the landfill
Class 6.	**Biological treatment not referred to elsewhere in this Schedule 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 disposal of biofilter material used in the purification of waste air streams
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 wastes arising from the purification of air and water
Class 11.	**Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.**
	This activity is limited to the mixing and blending of waste at the baling station and composting units
Class 12.	**Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.**
	This activity is limited to the baling of waste
Class 13.	**Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.**
	This activity is limited to the storage of waste at the facility

Note 1: Any reference to an activity Class is to be taken as being from the Third Schedule of the Waste Management Act, 1996, unless otherwise stated.

Waste Management Act, 1996: Fourth Schedule [Note 1]	
Class 1.	**Solvent reclamation or regeneration:**
	This activity is limited to the recovery of solvents in household hazardous waste
Class 2.	**Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):**
	This activity is limited to composting of municipal and green waste
Class 3.	**Recycling or reclamation of metals and metal compounds:**
	This activity is limited to recovery of metals at the civic waste facility and materials recovery/recycling unit
Class 4.	**Recycling or reclamation of other inorganic materials:**
	This activity is limited to the recovery of inorganic waste metals at the civic waste facility and materials recovery/recycling unit
Class 6.	**Recovery of components used for pollution abatement:**
	This activity is limited to the recovery of biofilters
Class 9.	**Use of any waste principally as a fuel or other means to generate energy:**

Waste Management Act, 1996: Fourth Schedule [Note 1]	
	This activity is limited to the utilisation of landfill gas to generate energy
Class 10.	**The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system:**
	This activity is limited to spreading of partially composted waste on the landfill
Class 11.	**Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:**
	This activity is limited to the use of shredded tree roots as constituent materials in the biofilter
Class 12.	**Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule:**
	This activity is limited to exchange of waste at the civic waste facility
Class 13.	**Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:**
	This activity is limited to the storage of waste for recovery off site

Note 1: Any reference to an activity Class is to be taken as being from the Fourth Schedule of the Waste Management Act, 1996, unless otherwise stated.

SCHEDULE B :Content of the Environmental Management Programme

Environmental Management Programme
Items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency, or otherwise as agreed in writing with the Agency
Timescale for achieving the objectives and targets listed in the Schedule of Objectives and Targets
Designation of Responsibility for Achieving Targets and Objectives
Other items as specified in writing by the Agency

SCHEDULE C :Content of the Annual Environmental Report

Annual Environmental Report Content [NOTE 1]
Reporting Period.
Waste activities carried out at the facility.
Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year.
Summary report on emissions.
Summary of results and interpretations of environmental monitoring, including plans and any updates of all monitoring locations including 12 digit grid references.
Resource and energy consumption summary.
Proposed development of the facility and timescale of such development.
Volume of leachate produced and volume of leachate transported / discharged off-site.
Report on development works undertaken during the reporting period, and a timescale for those proposed during the coming year.
Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.
Methods of deposition of waste.
Report on restoration of completed cells/ phases.
Site survey showing existing levels of the facility at the end of the reporting period.
Estimated annual and cumulative quantities of landfill gas emitted from the facility.
Monthly water balance calculation and interpretation.
Estimated annual and cumulative quantity of indirect emissions to groundwater.
Report on Environmental Management Programme.
Schedule of Environmental Objectives and Targets for the forthcoming year.
Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.
Full title and a written summary of any procedures developed by the licensee in the year which relates to the operation of the facility.
Tank, pipeline and bund testing and inspection report.
Reported incidents summary.
Complaints summary.
Review of Nuisance Controls.
Reports on financial provision made under this licence.
Report on management and staffing structure of the facility.
Report on programme for public information.
Any other items specified by the Agency.

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

SCHEDULE D :Recording and Reporting to the Agency

Table D.1 Recurring Reports

Report	Reporting Frequency Note1	Report Submission Date
Environmental Management System Updates	Annually	Eighteen months from the date of grant of licence and one month after the end of each year thereafter.
Annual Environment Report (AER)	Annually	Thirteen months from the date of grant of licence and one month after the end of each year thereafter.
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Prior to use and one month after end of the three year period being reported on.
Specified Engineering Works reports	As they arise	Prior to the works commencing.
Monitoring of landfill gas	Quarterly	Ten days after end of the quarter being reported on.
Noise Monitoring	Annually	One month after end of the year being reported on.
Monitoring of Emissions to Atmosphere & Air Quality	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.
Monitoring of Stormwater Wetlands	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Emissions to Sewer	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Organic & Green Waste Composting	Quarterly	Ten days after end of the quarter being reported on.
Ecological Monitoring	Annually	One month after end of the year being reported on.
Meteorological Monitoring	Annually	One month after end of the year being reported on.
Slope Stability	Annually	Six months from the date of grant of licence and one month after the end of each year thereafter.
Topographical survey	Annually	three months from the date of grant of licence and one month after the end of each year thereafter.
Compost Quality	Quarterly	Ten days after end of the quarter being reported on.

Note 1: Unless altered at the request of the Agency

SCHEDULE E : Specified Engineering Works

Specified Engineering Works
Fencing and site security works.
Roads and hardstanding.
Waste Inspection and Quarantine areas.
Weighbridge.
Wheelwash.
Meteorological Station.
Integrity of storage areas.
Bunding of fuel and oil storage areas.
Installation of groundwater control and/or monitoring systems.
De-watering of the water table if required during the construction of the Recycling Park.
Surface & foul water drainage infrastructure.
Protective fencing on either side of the Ballyogan Stream.
Stormwater wetlands.
Installation of leachate management, detection, storage, treatment, monitoring and control systems.
Modified leachate lagoon.
Interim arrangements to deal with dissolved methane in effluent being discharged to sewer.
Installation of plant to remove dissolved methane from leachate.
Installation of landfill gas management and monitoring systems including installation of landfill gas combustion plant, flares and vents.
Landfill cap installation, including temporary and intermediate capping, installation and all other containment works (including any containment works relating to leachate control).
Restoration and Aftercare Works.
Civic waste Facility & associated infrastructure.
Green Waste Composting Facility & associated infrastructure. (Including leachate storage and leachate treatment as referred to in Section 3.2.6.5 of the EIS). Integrity testing of the lagoon.
Organic Waste Composting Facility & associated infrastructure (including leachate storage tank incorporating the details given in Section 3.2.1 'Leachate Storage Tank for Organic Waste Composting Facility' of Volume 11. Integrity testing of the tank.
Baling Station & associated infrastructure.
Materials Recovery Recycling Facility & associated infrastructure (including operational equipment).
Barrier around the Pale Ditch.
Landscaping of Recycling Park.
Architectural finish to buildings within Recycling Park.
Fire control infrastructure
Installation of alternative drinking water supplies.
Any other works notified in writing by the Agency.

SCHEDULE F : Monitoring

F.1 Landfill Gas

Landfill gas monitoring locations shall be those as set out in Table F.1.1.

Table F.1.1 Landfill Gas Perimeter Monitoring Locations

Station	Easting	Northing
GW1-GW57	See Note 1	See Note 1
As required under Condition 9.2		

Note 1: Grid References as set out in Attachment J4, Volume 1a of the Application.

Table F.1.2 Landfill Gas Monitoring

Parameter	Monitoring Frequency		Analysis Method[Note1]/Technique[Note2]
	Gas Boreholes/ Vents/Wells	Site Office [Note 3]	
Methane (CH_4) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO_2)%v/v	Monthly	Weekly	Infrared analyser
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 with the Agency.
Note 3: Unless otherwise agreed with the Agency, this monitoring shall include all new buildings in the Recycling Park.

F.2 Landfill Gas Combustion Plant

Landfill gas monitoring locations shall be those as set out in Table F.1.1.

Table F.2.1 Landfill Gas Combustion Plant / Flare Monitoring Locations

Station	Easting	Northing
BN01	320719	224044
BN02	320717	224036
As required under Condition 4.18		

Table F.2.2 Landfill Gas Combustion Plant [Note 1]/ Flare Monitoring

Parameter	Monitoring Frequency	Analysis Method[Note2]/Technique[Note3]
Inlet		
Methane (CH_4) % v/v	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO_2)%v/v	Weekly	Infrared analyser
Oxygen (O_2) %v/v	Weekly	Electrochemical cell
Outlet		
Volumetric Flow rate	Biannually	Pitot Tube Method
SO_2	Biannually	Flue gas analyser
NOx	Biannually	Flue gas analyser
CO	Continuous [Note 4]	Flue gas analyser
Particulates	Annually	Isokinetic/Gravimetric
TA Luft Class I, II, III organics	Annually	Adsorption/Desorption / GC /GCMS [Note 5]
Hydrochloric acid	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	Annually	Impinger / Ion Chromatography

Note 1: Monitoring location to be installed within three months of the date of grant of this licence.
Note 2: All monitoring equipment used should be intrinsically safe.
Note 3: Or other methods agreed in advance with the Agency.
Note 4: Biannually for flares
Note 5: Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachlorethylene and vinyl chloride as a minimum.

F.3 Noise

Noise monitoring locations shall be those as set out in Table F.3.1.

Table F.3.1 Noise Monitoring Locations.

Station	Easting	Northing
NSL1-NSL5 inclusive [Note 1]	Note 2	Note 2
Note 3	Note 3	Note 3

Note 1: As shown on Drawing No BRP/EPA/21 'Ballyogan Recycling Park Monitoring Points' subject to the agreement of landowners.
Note2: Grid references (12 digit) to be submitted to the Agency for its agreement within three months of the date of grant of licence.
Note 3: Noise Monitoring points denoted by X on Drawing No BLS/EPA/12B 'Ballyogan Landfill Site Monitoring Points' shall be renumbered with the prefix NSL. A Drawing showing the revised numbers to be submitted to the Agency for its agreement within three months of the date of grant of licence.

Table F.3.2 Noise Monitoring Frequency and Technique:

Parameter	Monitoring Frequency	Analysis Method/Technique
$L(A)_{EQ}$ [30 minutes]	Annual [Note 2]	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."
Note2: In addition to annual monitoring, noise shall be monitored within one month of commencement of operation of the Recycling Park and within three months of full operation.

F.4 Emissions to Atmosphere & Air Quality Monitoring

Air Quality monitoring locations shall be those as set out in Table F.4.1.

Table F.4.1 Dust, PM_{10}, odour and micro-organisms monitoring locations

Station	Easting	Northing
Dust Monitoring Locations		
D1	320174	223682
D2	320562	224338
D3	320920	224270
D4	320786	223627
D5 Note 1	Note 2	Note 2
PM_{10}		
All dust monitoring locations as set out above	As above	As above
P/3 Note 4	Note 3	Note 3
P/7a Note 5	Note 3	Note 3
P/7b Note 5	Note 3	Note 3
EP/9 Note 6	Note 3	Note 3
Odour Monitoring Locations		
EP/9 Note 6	Note 3	Note 3
Micro-organisms Monitoring Locations Note 7		
Mesophilic Bacteria	Note 7	Note 7
Aspergillus fumigatus	Note 7	Note 7

Note 1: Monitoring point numbered D1 on Drawing No. BRP/EPA/21 'Ballyogan Recycling Park Monitoring Points' to be renumbered D5. A Drawing showing the revised numbers to be submitted to the Agency for its agreement within three months of the date of grant of licence.

Note2: Grid references (12 digit) to be submitted to the Agency for its agreement within three months of the date of grant of licence.

Note 3: Grid references (12 digit) to be submitted to the Agency for its agreement prior to commencement of waste activities.

Note 4: P/3 emission point from Baling Station Air extraction and filtration system.

Note 5: P/7 a and b emission points from Materials Recovery and Recycling Facility Air extraction and filtration system.

Note 6: EP/9 emission point from Organic waste composting facility.

Note 7: Three monitoring locations with grid references (upwind and downwind of composting operations and adjacent to Ballyogan Road) to be agreed with the Agency prior to waste acceptance for composting.

Table F.4.2 Dust, PM_{10} , Odour Monitoring Frequency and Technique

Parameter Note 1	Monitoring Frequency	Analysis Method/Technique
Dust ($mg/m^2/day$)	Quarterly Note 2	Standard Method Note 3
PM_{10}($\mu g/m^3$)	Quarterly	See Note 4
Odour	Quarterly Note 5	See Note 5
Bacteria	Bi-annually	Grab sample Note 6
Aspergillus fumigatus	Bi-annually	Grab sample Note 6

Note 1: Meteorological monitoring to be carried out concurrently with all above monitoring.

Note 2: Twice during the period May to September, or as otherwise specified in writing by the Agency.

Note 3: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute)

Note 4: As described in prEN12341 "Air Quality - field test procedure to demonstrate reference equivalence of sampling methods for PM10 fraction of particulate matter" or an alternative agreed in writing with the Agency.

Note 5: Odour measurements shall be by olfactometric measurement and analysis for mercaptans, hydrogen sulphide, ammonia, amines as set out in Table F.4.3.

Note 6: Enumeration of colonies to be carried out as described in 'Standardised Protocol for the Sampling and Enumeration of Airborn Micro-organisms at composting Facilities' the Composting Association 1999.

Emissions to Atmosphere: Abatement/Treatment Control at Organic Waste Composting Plant

Emission Point Reference No.: EP9 (emission point from organic waste composting unit).
Description of Treatment: Scrubber / Humidifier / Biofilter(s)

Unless agreed otherwise with the Agency, the Loading Rate shall not exceed 100 $m^3/hr/m^3$ of biofilter media and Monitoring and Backup Equipment at the Organic Waste Composting Plant shall be as set out in Table F.4.3below:

Table F.4.3

Control Parameter	Monitoring Required Note 4	Monitoring Equipment	Backup Equipment
Scrubber			
pH	Daily	pH probe	Spare probe
Biofilter			
Inlet Gas			
Gas loading	Monthly	Flow meter	-
Differential Pressure Drop across the filter	Daily	Manometer	Spare manometer
Temperature	Daily	Temperature sensor	-
Relative Humidity	Weekly	Hygrometer	-
Inlet and Outlet Gas			
Ammonia	Weekly	Colorimetric Indicator Tubes Note 1	Spare tubes
Hydrogen sulphide	Weekly	Colorimetric Indicator Tubes Note 1	Spare tubes
Mercaptans	Weekly	Colorimetric Indicator Tubes Note 1	Spare tubes
Amines	Bi – annually	NIOSH method 2010 Note 1	-
Bed Media			
Depth of biofilter	Daily		
Condition Note 2	Daily	Visual Inspection	-
Moisture content	Quarterly	Standard laboratory method Note 1	-
pH	Quarterly	pH probe	-
Ammonia	Quarterly	Standard laboratory method Note 1	-
Total viable counts	Quarterly	Standard laboratory method Note 1	-
General			
Sprinkler System	Check operation Daily	Visual Inspection	-
Fan	Check operation Daily	Visual Inspection	
Negative Pressure Note 3	Monthly	Air current tubes Note 1	Spare tubes

All measurements shall be made at peak bed loading.

Note 1: Or an equivalent method acceptable to the Agency.

Note 2: The biofilter shall be examined to ensure that no channelling is evident. Turning, restructuring and the addition of supplementary bed materials, or total bed replacement shall be carried out, as required, subject to bed performance.

Note 3: To be carried out on all buildings under negative pressure. A log shall be kept on - site with records of the date and time of analysis, building tested and weather on date of testing.

Note 4: Records shall be kept at the facility of all monitoring and visual checks.

F.5 Surface Water, Groundwater and Leachate

Surface water monitoring locations shall be those as set out in Table F.5.1 and as shown on Drawing No. BLS/EPA/12B 'Ballyogan Landfill Site Monitoring Points', Volume 8 of the Application.

Table F.5.1 Surface Water Monitoring Locations

STATION	EASTING	NORTHING
SW1	320239	224375
SW2	320326	224245
SW3	321098	224065
SW4	321959	224130
SW5	320390	223793
SW6 Note1	320345	223414
SW7	320518	223334
SW8	321010	223666
As required under Condition 4.16		

Note1: Monitoring to be carried out at SW6 when water available in the ditch/stream.

Groundwater monitoring locations shall be those as set out in Table F.5.2 and as shown on Drawing No. BLS/EPA/12B 'Ballyogan Landfill Site Monitoring Points', Volume 8 of the Application.

Table F.5.2 Groundwater Monitoring Locations

STATION Note1	EASTING	NORTHING
MW1	320250	223400
MW2	320720	224220
MW3	321040	224130
MW4	320980	224000
MW13	320820	224340
MW14	321060	224280
MW15	321220	224090
Wells as required under Condition 9.3		

Note 1: Monitoring to be undertaken on all nested standpipes.

Leachate monitoring locations shall be those as set out in Table F.5.3 and as shown on Drawing No. BLS/EPA/12B 'Ballyogan Landfill Site Monitoring Points', Volume 8 of the Application.

Table F.5.3 Leachate Monitoring Locations

LEACHATE INSPECTION MANHOLES	EASTING	NORTHING
MW8	320610	224090
MW9	320440	223870
MW11	320740	223540
MW12	320860	223850
Wells as required under Condition 4.17		

Table F.5.4 Water and Leachate - Parameters /Frequency

Parameter [Note 1]	SURFACE WATER Monitoring Frequency	GROUNDWATER Monitoring Frequency	LEACHATE 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	Monthly	Quarterly
BOD	Quarterly	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Monthly	Quarterly
pH	Quarterly	Monthly	Quarterly
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Monthly	Quarterly
Boron	Not Applicable	Annually	Annually
Cadmium	Annually	Annually	Annually
Calcium	Annually	Annually	Annually
Chromium (Total)	Annually	Annually	Annually
Copper	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
Iron	Annually	Annually	Quarterly
Lead	Annually	Annually	Annually
List I/II organic substances [Note 3]	Note 6	Annually	Note 6
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Potassium	Annually	Quarterly	Quarterly
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Quarterly
Total Alkalinity	Annually	Annually	Annually [Note 5]
Total Phosphorus / orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly	Quarterly
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Zinc	Annually	Annually	Annually
Phenols	Not Applicable	Quarterly	Not Applicable
Faecal Coliforms [Note 4]	Not Applicable	Annually	Annually
Total Coliforms [Note 4]	Not Applicable	Annually	Annually

Note 1: All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures. The testing laboratory and the testing procedures shall be agreed with the Agency in advance.

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

Note 3: Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and

80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (US Environmental Protection Agency method 525 or equivalent, and pesticides (US Environmental Protection Agency method 608 or equivalent).

Note 4: If there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.

Note 5: Only to be analysed in instances of on-site treatment of leachate.

Note 6: Once off for List I/II organic substances and thereafter as required by the Agency.

F.6 Monitoring of Stormwater Wetlands

Grid Reference: Grid References of the inlets and outlet from the wetlands to be submitted to the Agency for its agreement prior to construction of the drainage infrastructure.

Table F.6.1 Monitoring of Stormwater Wetlands.

Location / Parameter	Monitoring Frequency	Analysis Method/Technique Note 2
Inlets Note 1		
Flow	Continuous	Flow meter / recorder
TOC	Continuous	TOC meter / recorder
pH	Continuous	pH meter / recorder
Conductivity	Continuous	Conductivity Meter / recorder
Suspended Solids	Weekly Note 3	Gravimetric
Ammonia	Weekly Note 3	Standard Methods
Outlet Note 1		
Flow	Continuous	Flow meter / recorder
Visual inspection	Daily	Not applicable
Suspended Solids	Weekly Note3	Gravimetric

Note 1: Monitoring location (inspection chamber/manhole) and grid reference to be agreed with the Agency prior to construction.
Note 2: Or an equivalent method acceptable to the Agency.
Note 3: Frequency may be reduced depending on results.

F.7 Monitoring of Emissions to Sewer

Monitoring of emissions to sewer shall be those locations set out in Table F.7.1 and as indicated on Drawing No.BRP/EPA/21 'Ballyogan Recycling Park Monitoring Points' Volume 13 of the Application.

Table F.7.1 Sewer monitoring locations

Station	Easting	Northing
F12	Note 1	Note 1
F17	Note 1	Note 1
F1.15A	Note 1	Note 1

Note 1: Grid References to be submitted to the Agency for its agreement prior to construction of the drainage infrastructure.

Table F.7.2 Sewer Monitoring - Parameters /Frequency

Parameter	Monitoring Frequency	Sampling Method	Analysis Method/Technique Note 1
Flow	Continuous	On-line	Flow meter / recorder
Methane	Continuous	On-line	Headspace methane monitor Note 2
Temperature	Continuous	On-line	-
pH	Continuous	On-line	pH meter/recorder
Ammoniacal nitrogen	Monthly	24 hour composite	Standard Method Note 3
Biochemical Oxygen Demand	Monthly	24 hour composite	Standard Method Note 3
Chemical Oxygen Demand	Monthly	24 hour composite	Standard Method Note 3
Detergents Note 4	Monthly	24 hour composite	Standard Method Note 3
Extractable oils, grease & fats	Monthly	24 hour composite	Standard Method Note 3
Sulphates	Monthly	24 hour composite	Standard Method Note 3
Suspended Solids	Monthly	24 hour composite	Standard Method Note 3 Gravimetric

Note 1: Or an equivalent method acceptable to the Agency.
Note 2: Exact details of monitor to be agreed with the Agency.
Note 3: "Standards Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F) 19th Ed. 1995, American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA".
Note 4: Concentration of detergents as Methylene Blue Active Substances (MBAS).

F.8 Monitoring of Organic & Green Waste Composting

Table F.8.1 Monitoring of Composting Process.
The organic and green waste composting processes shall be monitored for the following parameters.

Parameter	Monitoring Frequency	Analysis Method/Technique
Moisture Content	Continuous Note 1	Standard
Temperature (min/max.)	Continuous Note 2	Standard
Oxygen	Continuous Note 1	Standard

Note 1: Weekly intervals for green waste composting unit
Note 2: Daily intervals for green waste composting unit

F.9 Meteorological Monitoring

Table F.9.1 Meteorological Monitoring:
At a location on the facility to be agreed with the Agency.

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

F.10 Ecological Monitoring

Monitoring Locations are as outlined in Table F.10.1 below and as shown on Map1 'Invertebrate Sampling Sites in the Vicinity of the Landfill', Appendix I, Monitoring, Flora/fauna, Article 16 Response - Volume 1.

Table F.10.1 Ecological Monitoring: Monitoring Locations

Monitoring Location	Eastings	Northings
Site 3	Note 1	Note 1
Site 4	Note 1	Note 1
Site T1	Note 1	Note 1
Site T2	Note 1	Note 1
Site 4A	Note 1	Note 1
Site 5	Note 1	Note 1
Site 6	Note 1	Note 1

Note 1: Grid references (12 digit) to be submitted to the Agency for its agreement within three months of the date of grant of licence.

Table F.10.2 Ecological Monitoring: Method/Technique

Monitoring Location	Monitoring Frequency	Analysis Method / Technique [Note 1]
Monitoring sites in Table F.10.1	Annual	Kick Sample

Note 1: Appropriate biological methods (such as EPA Q-Rating System to be used for the assessment of rivers and streams).

SCHEDULE G :Emission Limits

G.1 Noise Emission Limits:

Measured at monitoring points indicated in Table F.2.1.

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

G.2 Dust Deposition Limits:

(Measured at the monitoring points indicated in Table F.2.1.

Level (mg/m^2 /day)[Note 1]
350

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

G.3 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

G.4 Emission Limit Values for Landfill Gas Combustion Plant & Flares

Location: Landfill Gas Combustion Plant and flarestacks
Volume to be emitted from each stack: $3000m^3/hr$
Minimum discharge height for each stack: 5m

Parameter	Emission Limit Value [Note 2]
Nitrogen oxides as (NO_2)	500 mg/m^3 (150mg/m^3) [Note 3]
CO	650 mg/m^3 (50mg/m^3) [Note 3]
Particulates	130 mg/m^3
TA Luft Organics Class I [Note 1]	20 mg/m^3 (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II [Note 1]	100 mg/m^3 (at mass flows > 2 kg/hr)
TA Luft Organics Class III [Note 1]	150 mg/m^3 (at mass flows > 3kg/hr)
Hydrogen Chloride	50 mg/m^3 (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m^3 (at mass flows > 0.05 kg/h)

Note 1: In addition to the above individual limits, the sum of the concentrations of Class I, II and III shall not exceed the Class III limits.

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

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

G.5 Emission Limit Values for Organic Waste Composting

Emission Point Reference No. EP9 (emission point from organic waste composting unit)
Grid Reference: Grid references (12 digit) to be submitted to the Agency for its agreement prior to commencement of this waste activity

Parameter	Emission Limit Value (ppm v/v)
Ammonia	50
Amines	5
Hydrogen Sulphide & Mercaptans	5

G.6 Emission Limits for Effluent Being Discharged to Sewer

Emission Point Reference Nos. As per Table F.7.1
Volume to be emitted: Maximum in any one day: 8640m^3
Maximum rate per hour: 108m^3/hr

Parameter	Emission Limit Value		
	Daily Mean Conc. (mg/l)	Daily Total Loading (kg/day)	Daily Max. Conc. (mg/l)
Temperature	-	-	42 °C
BOD	10,000	1400	12,500
COD	30000	8500	37500
Suspended solids	2000	4000	2500
Ammonia	300	130	-
Detergents Note 1	-	170	100
Extractable oils, grease & fats	-	170	200
Sulphate	-	550	500
PH	5-10	-	-
Dissolved Methane Note 2	0.14	-	-

Note 1: Concentration of detergents as Methylene Blue Active Substances (MBAS).
Note 2: Dissolved methane to be calculated by calculation. Exact method to be agreed with the Agency.

G.7 Surface Water Discharge Limits

Emission Point Reference No.: - Outlet from stormwater wetlands to the Ballyogan Stream.
Grid Reference: As per F.6.
Maximum discharge: 0.097m^3/sec

Parameter	Emission Limit Value
	Daily Mean Concentration (mg/l)
Suspended solids	35

SCHEDULE H :Waste Quantities

Unit	Maximum Quantity (Tonnes per Annum)
Ballyogan Landfill & Recycling Park	**400,000** Note 1
Ballyogan Landfill	**400,000** Note 2
Ballyogan Recycling Park	**210,000**
Baling Station	120,000
Green Waste Composting	5,000
Materials Recovery / Recycling	30,000
Organic Waste Composting	45,000
Civic Waste Facility (Recycling Park & Landfill)	10,000

Note 1: Unless otherwise agreed with the Agency the maximum quantities of waste to be accepted at or removed from the facility shall not exceed 400,000 tonnes per annum.
Note 2: Waste for disposal to Ballyogan landfill shall not exceed 100,000 tonnes per annum.

SCHEDULE I :Hours of Waste Acceptance / Removal

Facility	Day	Hours of Waste Acceptance/Removal [Note 1]
Landfill	Monday – Friday Saturday / Bank Holiday Sunday	08.00 – 18.00 08.00 – 16.00 Closed
Baling Station	Monday – Friday Saturday / Bank Holiday Sunday	08.00 – 18.00 [Note 2] 08.00 – 16.00 [Note 3] Closed
Green Waste Composting	Monday – Friday Saturday / Bank Holiday Sunday	08.00 – 18.00 08.00 – 16.00 Closed
Materials Recovery / Recycling	Monday – Friday Saturday / Bank Holiday Sunday	08.00 – 18.00 08.00 – 16.00 Closed
Organic Waste Composting	Monday – Friday Saturday / Bank Holiday Sunday	08.00- 18.00 08.00 – 16.00 Closed
Civic Waste Facility (Recycling Park & Landfill)	Monday – Saturday Sunday / Bank Holiday	08.00 – 18.00 08.00 – 18.00

Note 1: Hours of operation relate to that for waste acceptance at or waste removal from the facility and may be altered subject to the agreement of the Agency.
Note 2: Unless otherwise agreed with the Agency baled waste may be removed from this facility for transport to Arthurstown Landfill commencing at 07.00.
Note 3: Unless otherwise agreed with the Agency baled waste may be removed from this facility for transport to Arthurstown Landfill commencing at 08.00.

SCHEDULE J :Compost Quality

Unless otherwise agreed with the Agency, the licensee shall monitor the compost product, at least monthly, from the organic waste composting unit and green waste composting unit to ensure it meets the following criteria.

The following criteria are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH_4-N, NO_3-N, pH and dry matter content should also be measured.

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

1. Maturity

Compost shall be deemed to be mature if:

it meets two of the following requirements:
- C/N ratio ≤ 25
- oxygen uptake rate ≤ 150 mg O_2/kg volatile solids per hour; and
- germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90 percent of the germination rate of the control sample, and

the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample.

- Elimination of the following test organisms (used to evaluate composting system efficiency in removing plant pathogens and weed seeds during the composting process): *Plasmodiophora brassicae*, tobacco-mosaic-virus (TMV) and tomato seeds. Guidance on test may be obtained from the German document LAGA M10 'Quality Criteria and Application Recommendations for Compost'.

OR

- Compost must be cured for at least 21 days; and
- Compost will not reheat upon standing to greater than 20°C above ambient temperature.

OR

- Compost must be cured for at least 21 days; and
- Reduction of organic matter must be > 60 percent by weight.

OR

- If no other determination of maturity is made, the compost must be cured for a six month period. The state of the curing pile must be conducive to aerobic biological activity. The curing stage begins when the pathogenic reduction process is complete and the compost no longer reheats to thermophilic temperatures.

2. Foreign Matter

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

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

3. Trace Elements

Maximum Trace Element Concentration Limits for Compost

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

Note 1: Monitoring of these parameters required if waste from an industrial source.
Note 2: The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

4. Pathogens

Pathogenic organism content must not exceed the following limits:

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

5. Monitoring
The licensee shall monitor the compost product at least monthly. The licensee shall submit to the Agency for its agreement, prior to commencement of compost operations, details of methods of analyses and sample numbers.

Given by the Agency on the 30th day of March, 2000.

Signed on behalf of the said Agency
on the 30th day of March, 2000 Breda Sheehan **Authorised Person**