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County Wexford, Ireland

WASTE LICENCE
PROPOSED DECISION

Waste Licence Register Number:	11
Applicant:	Wicklow County Council
Location of Facility:	Ballymurtagh Landfill, Tinnahinch, Co. Wicklow

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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 Wicklow County Council to carry on the waste activities listed below at Ballymurtagh Landfill, Tinnahinch, Co. Wicklow subject to eleven conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

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

Class 1.	Deposit on, in or under land (including landfill): This activity is limited to landfill of non-hazardous material.
Class 2.	Land treatment, including biodegradation of liquid or sludge discards in soils: This activity is limited to the disposal of treated sewage sludges.
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 the composting of green wastes.
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 the treatment of leachate generated on-site.
Class 13.	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced: This activity is limited to storage of Construction and Demolition waste prior to use as daily cover, in on site construction works or for restoration.

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

Class 2.	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes): This activity is limited to the use of green wastes for composting.
Class 3.	Recycling or reclamation of metals and metal compounds: This activity is limited to the recycling of glass and metals.
Class 4.	Recycling or reclamation of other inorganic materials: This activity is limited to recycling of materials.
Class 9.	Use of any waste principally as a fuel or other means to generate energy: This activity is limited to landfill gas utilisation.
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 construction/demolition waste including topsoil/subsoil for use as cover, in on-site construction works.
Class 13.	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced: This activity is limited to the storage of inert material prior to its use as cover, in on-site construction works and in capping and restoration.

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.
BAT	Best Available Technology
Commercial waste	As defined in Section 5 (1) of the Act.
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	8.00 a.m. to 10.00 p.m.
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.
Emission	As defined in Section 5 (1) of the Act.
Emission Limit Value	Those limits, including concentration limits and deposition levels established in Schedule F.
Environmental Pollution	As defined in Section 5 (1) of the Act.
European Waste	The EWC is a harmonised, non-exhaustive list of wastes drawn up by

Catalogue (EWC)	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
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°C and atmospheric pressure.
Licence	A Waste Licence issued in accordance with the Act.
Licensee	Wicklow County Council
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter
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.

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.
Specified Emissions	Those emissions listed in Schedule F: Emission Limits of this licence.
Specified Engineering Works	Those engineering works listed in Schedule D: 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	8.30 a.m. to 6.00 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 Part I: Activities Licensed and required by the licence.
- 1.2. Waste activities shall be restricted to the area of land outlined in red on **Drawing No. Figure No. 2 'Site Plan'** 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 nine months from the date of grant of this licence, submit to the Agency for its agreement a proposal for a documented Environmental Management System (EMS) for the facility. Following the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.
 - 2.1.2 The EMS shall include as a minimum those elements specified in the Conditions 2.2 to 2.7 below:

2.2 Schedule of Environmental Objectives and Targets

2.2.1 The licensee shall, within nine 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 six 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 A: 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 three 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 three 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 The management structure of the facility shall be as outlined in L5. Management Structure & Organisational Chart. Any proposed changes in the management structure shall be submitted to the Agency for its agreement. This includes changes in any of the following:

- a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence;
- b) details of the responsibilities for each individual named under a) above;
- c) details of the relevant experience, competence and qualifications held by each of the persons nominated under a) above; and
- d) contingency arrangements for the absences of the named persons from the facility.

2.7 Communications

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

- 2.8 Annual Environmental Report
- 2.8.1 The licensee shall submit to the Agency for its agreement, within thirteen months from the date of grant of this licence, and within one month of the end of each year thereafter, an Annual Environmental Report (AER).
- 2.8.2 The AER shall include as a minimum the information specified in Schedule B: Content of Annual Environmental Report and shall be prepared in accordance with any relevant written guidance issued by the Agency.
- 2.9 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a suitably qualified and experienced deputy, shall be present at all times during the operation of the facility.
- 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:
- any nuisance caused by the activity
 - any emission which does not comply with the requirements of this licence;
 - any trigger level specified in this licence which is attained or exceeded;
 - any indication that environmental pollution has, or may have, taken place; and,
 - any emergency.
- 3.2 The written record shall include all aspects described in Condition 10.7(a-e).
- 3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:
- 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;
 - submit the written record required by this condition to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident; and
 - 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.
- 3.4 Should any further actions be taken after the date of written notification, as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.

- 3.5 Unless otherwise agreed by the Agency, all documentation submitted to the Agency shall:
- (a) be sent to the Agency's headquarters;
 - (b) comprise one original and three copies;
 - (c) be formatted in accordance with any written instruction or guidance issued by the Agency;
 - (d) include whatever information as is specified in writing by the Agency;
 - (e) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
 - (f) be submitted in accordance to the relevant reporting frequencies specified by this licence; and
 - (g) in the case of results of any environmental monitoring, be accompanied by a written interpretation setting out their significance.
- 3.6 Copies of all environmental monitoring data obtained by the licensee which relates to the facility shall be forwarded to the Agency at the frequencies set out in Schedule C: Recording and Reporting to the Agency of this licence.
- 3.7 Unless otherwise agreed with the Agency, the licensee shall retain all documentation and records required to be made under this licence.
- 3.8 The licensee shall provide additional copies of any documentation and records referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.
- 3.9 The licensee shall keep the following documents at the facility office referred to in Condition 4.5.
- a) the current waste licence relating to the facility;
 - b) the current EMS for the facility;
 - c) the previous year's AER for the facility;
 - d) all written procedures produced by the licensee which relate to the licensed activities.
- 3.10 For all loads of waste arriving at the facility, other than those arriving at the civic waste facility, the licensee shall record the following:
- a) the date;
 - b) the name of the carrier (including if appropriate, the waste carrier registration details);
 - c) the vehicle registration number;
 - d) the name of the producer(s)/collector(s) of the waste as appropriate;
 - e) a description of the waste including the associated EWC codes;
 - f) the quantity of the waste, recorded in tonnes
 - g) the name of the person checking the load; and,
 - h) 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 Provision shall be made for the transfer of environmental information specified by the Agency, in relation to the activities carried on under this licence, to the Agency's computer system within a timescale specified in writing by the Agency.

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 instructed by the Agency.
- 4.2 Site Notice Board
- 4.2.1 The licensee shall provide and maintain a Site Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the identification board shall be 1200 mm by 750 mm.
- 4.2.2 The board shall clearly show:
- a) the name and telephone number of the facility;

- b) the normal hours of opening;
- c) the name, address and telephone number of the licence holder;
- d) an emergency out of hours contact telephone number;
- e) the name, address and telephone number of the operator of the facility;
- f) the licence reference number;
- g) where and when environmental monitoring information relating to the facility can be obtained.

4.3 Site Security

4.3.1 Within three months of the date of the grant of the licence, all defects in the existing site gates and fences shall be temporarily rectified to prevent trespassing to the facility.:

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

- a) a temporary repair shall be made by the end of the working day; and,
- b) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days or as otherwise agreed with the Agency.

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

4.4 Site Roads and Hardstanding

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

4.5 The licensee shall provide and maintain an office on the facility, at the location shown in **Drawing No. Figure No. 3 'Site Plan'**. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.

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

4.7 Inspection

4.7.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at a location to be agreed with the Agency.

4.7.2 The licensee shall ensure that these areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be suitably and clearly segregated from each other.

4.8 The licensee shall maintain the weighbridge at the facility.

4.9 Wheelwash

4.9.1 The licensee shall maintain the wheelwash/dry wheel shake out at the facility.

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

- 4.10 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 4.11 Waste Water
- 4.11.1 Unless otherwise agreed in advance by the Agency, the licensee shall establish and maintain a septic tank and secondary treatment system at the facility for the treatment of all sewage arising on site. The sewage treatment works shall satisfy the recommendations set out in the Agency's guidance document "Wastewater Treatment Manuals – Treatment Systems for Single Houses".
- 4.12 Storage Areas
- 4.12.1 The licensee shall provide and maintain a bunded fuel storage area at the facility. Fuels shall only be stored at the agreed location.
- 4.12.2 All tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, tank and drum storage areas shall, as a minimum be bunded, either locally or remotely, to a volume not less than the greater of the following:
- (a) 110% of the capacity of the largest tank or drum within the bunded area; or
 - (b) 25% of the total volume of substance which could be stored within the bunded area.
- 4.12.3 All drainage from bunded areas shall be diverted for collection and safe disposal.
- 4.12.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 4.12.5 The integrity and water tightness of all the bunds, tanks and containers and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee and shall be reported to the Agency following its installation and prior to its use as a fuel 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.
- 4.12.6 All tanks and containers shall be labelled to clearly indicate their contents.
- 4.13 Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, details for the storage of fridges at the facility.
- 4.14 Specified Engineering Works
- 4.14.1 The licensee shall submit written proposals for all Specified Engineering Works, as defined in Schedule D: Specified Engineering Works, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.
- 4.14.2 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.
- 4.14.3 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.

4.15 Landfill Gas Management:

- 4.15.1 Within six months of the date of grant of this licence a proposal for the utilisation of landfill gas as an energy resource shall be submitted to the Agency for its agreement.
- 4.15.2 Flare unit efficiency shall be tested within six months of the date of grant of this licence and once every three years thereafter.
- 4.15.3 Within nine months of the date of grant of the licence, the open gas flare unit shall be upgraded to an enclosed flare unit.
- 4.15.4 The licensee shall maintain all gas wells, pipework, valves, pumps, flares and other infrastructure that form part of the landfill gas management scheme in a safe and fully operational manner.
- 4.15.5 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.

4.16 Capping

- 4.16.1 Within three months of the date of grant of the licence the licensee shall ensure that all previously deposited waste is covered by an intermediate cover of at least 300mm
- 4.16.2 Final capping shall consist of the following:
 - (i) top soil (150 -300mm);
 - (ii) subsoils, such that total thickness of top soil and subsoils is at least 1m;
 - (iii) drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s;
 - (iv) compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-9} m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and
 - (v) gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.

4.16.3 Filled cells shall be permanently capped to the specifications agreed with the Agency in accordance with Condition 4.16.2 within twelve months of the cells having been filled to the required level.

4.17 Surface Water Management

4.17.1 The licensee shall ensure effective control of surface water run off from the facility during operation and restoration.

4.17.2 Within six months of the date of grant of this licence the licensee shall establish a management plan for the control of surface water run off from the facility during construction, operation, restoration and potential contingency events. The plan as a minimum shall include

- (i) a storm water retention pond for the collection and storage of surface water from the facility prior to discharge to the perimeter streams via silt traps or a reed bed system,
- (ii) the installation of an outlet facility for preventing surface water discharges in the event that monitoring should indicate contamination of the surface water,
- (iii) the prevention of leachate seepage into the surface water drains; and
- (iv) the collection/diversion of run off arising from capped and restored areas.

4.17.3 Within twelve months of the date of grant of the licence, the licensee shall implement the surface water management plan.

4.18 Groundwater management.

4.18.1 Within six months of the date of grant of this licence, the licensee shall submit a proposal to the Agency for agreement which will consider the feasibility of controlling groundwater discharges to the Avoca river taking account of the GSI Hydrogeological Study, February 1994.

4.19 Civic Waste Facility

4.19.1 The licensee shall relocate the Civic Waste Facility from its temporary location to the location as outlined on **Figure BALL-EIS-005 Rev. A** within six months of the date of grant of this licence.

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

CONDITION 5 WASTE MANAGEMENT

5.1. No hazardous wastes shall be disposed of at the facility.

5.2. Subject to Condition 5.1, and any requirements of Condition 5.3, only those waste types and quantities listed in Schedule G: Waste Acceptance shall be recovered or disposed of at the facility unless the prior agreement of the Agency has been obtained.

5.3. Compost facility.

In the event of the licensee establishing a compost facility, subject to Condition 4.14, only green waste shall be composted at the facility unless otherwise agreed with the

Agency. The quantity of compost and waste held at the composting facility shall not exceed 1000 cubic metres at any one time.

5.4. Waste Acceptance Procedures and Waste Characterisation

5.4.1. Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement detailed written procedures for the acceptance and handling of all wastes

5.4.2. Testing shall be performed on a minimum of two samples per annum for all industrial sludges/solids being accepted at the facility and the results included in the AER.

5.4.3. Within three months of the date of grant of this licence, the licensee shall submit a proposal concerning the acceptance, handling and processing of wastes for deep burial. The proposal shall include provisions to ensure that excavations of waste to allow deep burial do not cause odour or other nuisances.

5.5. All wastes shall be checked at the working face to ensure that they comply with the requirements of the licence. Any wastes deemed to be in contravention of this licence and/or unsuitable for recovery or disposal at this facility shall be removed for recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area only.

5.6. The quantity of wastes to be accepted for disposal at the landfill, shall not exceed 42,000 tonnes per annum.

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

5.8. Scavenging shall not be permitted at the facility.

5.9. Waste shall only be accepted at the facility between the hours of 9.00 to 17.00 Monday to Friday inclusive and 9.00 to 13.00 on Saturdays with the exclusion of Bank Holidays.

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

- a) only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials;
- b) the working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3; 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.

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

5.12. 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. Within three 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.

- 5.13. The landfill shall be filled in accordance with a phase sequence to be agreed in advance with the Agency. The Agency shall be informed in writing at least one month prior to the licensee entering into a new phase.
- 5.14. Sludges
- Treated sewage sludges shall only be accepted at the facility between the hours of 9.00 a.m. and 2.00 p.m. Monday to Friday inclusive. The quantity of sludges to be accepted at the facility, shall not exceed 2,000 tonnes per annum. Sludges shall only be permitted to be disposed of at the facility from producers who hold a disposal permit issued by the licensee. Copies of such permits shall be available for inspection at the facility and shall be presented by the producer on delivery of the sludge consignment to the facility. All sludge shall be covered immediately with other waste.
- 5.15. 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.
- 5.16. In order to prevent the formation of voids, all large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.17. Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over with the exception of works associated with the construction and installation of the gas collection system or without the prior agreement from the Agency.
- 5.18. No smoking shall be allowed on the facility other than in the site offices as shown on **Figure No. 3 .”Site Plan”**.
- 5.19. Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, to be agreed by the Agency. The ultimate recovery or disposal facility for all wastes shall be agreed in advance with the Agency. All wastes removed off-site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.
- 5.20. Civic Waste Facility
- a) Unless the prior agreement of the Agency is given only household waste and waste for recovery shall be accepted at the Civic Waste Facility. The Civic Waste Facility shall only be used by private vehicles. The Civic Waste Facility shall not be used as a transfer station for disposal of waste by commercial waste disposal contractors or local authority waste collection vehicles.
 - b) The quantity of waste to be accepted at the Civic Waste Facility shall not exceed 10,000 tonnes per annum unless otherwise agreed with the Agency.
 - c) No hazardous waste (excluding waste oil collected for recovery), asbestos, liquid waste, sludge or offal shall be deposited at the Civic Waste 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
 - 6.3.1. The measures and infrastructure as described in F5 of the Waste Licence Application shall be applied to control litter at the facility.
 - 6.3.2. Notwithstanding Condition 6.3.1 prior to the disposal of any waste in any cell litter fencing shall be installed and maintained around the perimeter of the active tipping area
 - 6.3.3. All litter control infrastructure shall be inspected on a daily basis and the licensee shall remedy any defect in the litter netting as follows:
 - a) a temporary repair shall be made by the end of the working day; and,
 - b) a repair to the standard of the original netting shall be undertaken within three working days or as otherwise agreed with the Agency.
 - 6.3.4. Within three months of the date of grant of this licence the licensee shall submit to the Agency for its agreement proposals for the operation of the facility in adverse wind conditions.
 - 6.3.5. All loose litter accumulated within the facility and its environs, excluding that which is deposited on the working face, shall be removed subject to the agreement of the landowners and appropriately disposed of on a daily basis.
- 6.4. Any waste placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed by the licensee immediately and in any event by 10:00am of the next working day, after such waste is discovered. Such waste shall be disposed of at an appropriate facility.
- 6.5. The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 6.6. 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.
- 6.8. Prior to exiting the facility, all waste vehicles, other than cars exiting the Civic Waste Facility, shall use the wheelwash.
- 6.9. The licensee shall within three months, submit to the Agency for its agreement a programme for the control and eradication of vermin and fly infestations at the facility. This programme should include as a minimum, details on the rodenticide(s) and insecticide(s) to be used, operator training, mode and frequency of application and measures to contain sprays within the facility boundary.

Reason: To provide for the control of nuisance.

CONDITION 7 EMISSIONS AND ENVIRONMENTAL IMPACTS

- 7.1. No specified emission from the facility shall exceed the emission limit values set out in Schedule F: Emission Limits of this licence. There shall be no other emissions of environmental significance.
- 7.2. No recirculation of leachate or other contaminated water shall be undertaken.
- 7.3. 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.
- 7.4. 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. The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-
- a) in the case of landfill gas flare:
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
 - b) in the case of landfill gas combustion plant:
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 7.5.3. Emission limits for emissions to atmosphere in this licence shall be interpreted in the following way:-
- 7.5.3.1. Continuous monitoring
- (i) No 24 hour mean value shall exceed the emission limit value.
 - (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
 - (iii) No 30 minute mean value shall exceed twice the emission limit value.
- 7.5.3.2. Non-Continuous Monitoring

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

7.6. Emissions to Surface Water

7.6.1. Surface water discharges from the facility shall not result in any significant deterioration in the quality of the receiving waters.

7.7. There shall be no direct emissions to groundwater.

7.8. Disposal of Leachate

Any leachate or other contaminated water removed from the facility shall be transported to a wastewater treatment plant whose name and location has been agreed in advance by the Agency.

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

CONDITION 8 RESTORATION AND AFTERCARE

- 8.1. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement a revised and updated Restoration and Aftercare Plan for the facility. The revised plan shall take into consideration the cessation of disposal activities at the landfill facility. The plan should be based on the plan submitted as part of the application. In preparing the Plan the licensee shall have regard to the requirements of the Landfill Directive (1999/31/EC) and the guidance published in the Agency's *Landfill Manual: "Landfill Restoration and Aftercare"*. A schedule detailing the various stages of restoration, including timescales, shall be included in the Plan. The Restoration and Aftercare Plan must include stability assessment of the slopes of the facility and proposed slope stabilisation measures.
- 8.2. The restored height of the completed landfill shall be as detailed on **Drawings No. 99.007 01 & No. 99.007 02**. The Restoration and Aftercare Plan required under Condition 8.1 above shall include for agreement a detailed drawing showing the proposed final profile of the facility and details of the quantities of inert waste and soil to be accepted at the facility for recovery and restoration purposes.
- 8.3. Within six months of the date of grant of this licence, the licensee shall submit proposals for landfilling and restoration to achieve the final contours defined in Condition 8.3 to the Agency for its agreement.
- 8.4. The storage of soils shall be in such a manner to maximise the preservation of the soil structure for future use within the facility. Soils removed during site preparation other than those to be reused for site construction purposes shall be stored at a location to be agreed with the Agency.

- 8.5. Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials.
- 8.6. No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels.
- 8.7. Where tree planting is proposed to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Topsoil and subsoil depths shall be a minimum of 1m unless otherwise agreed in advance with the Agency.
- 8.8. The restoration of the landfill facility shall be completed within two years of the date of grant of this licence, unless otherwise agreed with the Agency.
- 8.9. Within nine months of the date of grant of this licence a detailed landscaping plan shall be submitted to the Agency for its agreement. The plan shall contain proposals for the planting of trees and shrubs, seeding of other areas, details of leachate and gas management/monitoring points (including method of access), site security measures and any other matter notified in writing by the Agency. It shall include a timetable for the commencement and completion of such works.

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

CONDITION 9 ENVIRONMENTAL MONITORING

- 9.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in Schedule E: Monitoring and as specified in the Conditions of this licence.
- 9.2. Within six months from the date of grant of this licence, the licensee shall install additional monitoring locations to detect off-site migration of landfill gas where the facility boundary adjoins residential properties.
- 9.3. All private wells, subject to the agreement of the well owners, within 500m of the facility shall be included in the monitoring programme set out in Schedule E: Monitoring.
- 9.4. Within three months from the date of grant of this licence, the licensee shall implement a monitoring programme for leachate levels within the filled waste. The programme shall include a drawing showing all leachate monitoring locations. The drawing shall also contain a unique reference number and a twelve figure national grid reference for each monitoring point.
- 9.5. Within six months from the date of grant of this licence, the licensee shall implement a monitoring programme for both the surface water discharged from the facility (and the flow in the discharge streams and rivers) with reference to Condition 4.17. The programme shall, at minimum, include and fulfil the requirements of Schedule E.4: Surface Water Monitoring.
- 9.6. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and off-site points as required by the Agency. All ditches and drains located around the perimeter of the facility are to be kept clear such that monitoring can be carried out successfully.
- 9.7. 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.

- 9.8. 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.
- 9.9. 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.
- 9.10. 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 unless otherwise agreed with the Agency.
- 9.11. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of this licence.
- 9.12. 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.
- 9.13. An annual assessment of the ecology of the restored landfill and adjoining habitats shall be undertaken and submitted to the Agency. The scope, content and details of the contractor carrying out the assessment shall be submitted to the Agency for its agreement on an annual basis prior to the assessment.
- 9.14. 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.
- 9.15. All landfill gas monitoring equipment used for monitoring landfill gas under the requirements of this licence shall be certified as being intrinsically safe.
- 9.16. Within three months of the date of grant of this licence, the licensee shall submit to the Agency an updated appropriately scaled drawing(s) showing the location of all existing monitoring locations that are stipulated in this licence.
- 9.17. All on-site monitoring points as described in Condition 9.1 shall be tagged in situ with their agreed sampling point codes within ten months of the granting of this licence.

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

CONDITION 10 CONTINGENCY ARRANGEMENTS

- 10.1. The licensee shall, within six months of the date of grant of this licence, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment.
- 10.2. Unless otherwise agreed with the Agency, Contingency Arrangements for the facility shall be as detailed in Attachment K.1 "Contingency Arrangements" of the waste licence application.

- 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 9.3) 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 provide an alternative adequate and safe supply of water to those affected.
- 10.7. 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.
- 10.8. In the event that monitoring of the side 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 £11,425 (euro 14,506)
- 11.1.2 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 Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 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.
- 11.1.3 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased or decreased the licensee shall contribute such sums as determined by the Agency to defraying its costs.

11.2 Financial Provision for Closure, Restoration and Aftercare

- 11.2.1 The licensee shall 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 Restoration and Aftercare Plan required by Condition 8.1. 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 and Aftercare Plan.
- 11.2.3 The licensee shall revise the cost of restoration 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:

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

Where:

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

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

SCHEDULE A :Content of the Environmental Management Programme

Environmental Management Programme

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

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

Designation of Responsibility for Achieving Targets and Objectives

Other items specified by the Agency

SCHEDULE B :Content of the Annual Environmental Report

Annual Environmental Report Content ^{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.

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

Methods of deposition of waste.

Summary report on emissions.

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

Resource and energy consumption summary.

Proposed development of the facility and timescale of such development.

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

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

Report on restoration of completed cells/ phases.

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

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

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Monthly water balance calculation and interpretation.

Schedule of Environmental Objectives and Targets for the forthcoming year.

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

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

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Review of Nuisance Controls.

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

Any other items specified by the Agency.

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

SCHEDULE C :Recording and Reporting to the Agency

Table C.1 Recurring Reports

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

Note 1: Unless altered at the request of the Agency

SCHEDULE D :Specified Engineering Works

Specified Engineering Works

Development of Phases and future Cells of the facility including preparatory works and lining.

Landfill cap installation, including temporary and intermediate capping, installation and all other containment works (including any containment works relating to leachate control).

Fencing and site security works.

Bunding of fuel and oil storage areas.

Installation of Civic Waste Facility

Installation of Waste Inspection and Waste Quarantine Areas

Installation of landfill gas management and monitoring systems.

Installation of leachate management, detection, storage, treatment, monitoring and control systems.

Installation of alternative drinking water supplies.

Surface water management works.

Restoration and Aftercare Works.

Nuisance control measures

Any future composting of organic wastes

Any component separation on site

Any other works notified in writing by the Agency.

SCHEDULE E :Monitoring

Monitoring to be carried out as specified below.

E.1 Landfill Gas

Landfill gas monitoring locations shall be those as set out in Ball-Mon-001 Rev. B and Ball-EIS-004 of the application.

Table E.1.1 Perimeter Monitoring Locations

STATION
G1
G2
G3.
G4
G5
MW
86/9 (V5)
Deep Ballygahan Adit
Ballymurtagh Road Adit

Table E.1.2 Landfill Gas Monitoring Frequency and Technique

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

Note1: All monitoring equipment used should be intrinsically safe.

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

E.2 Dust

Dust monitoring locations to be agreed with the Agency

Table E.2.2 Dust Monitoring Frequency and Technique

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

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

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

E.3 Noise

Noise monitoring locations to be agreed with the Agency.

Table E.3.1 Noise Monitoring Locations

STATION
NSL 1
NSL 2
NSL 3
NSL 4

Table E.3.1 Noise Monitoring Frequency and Technique

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

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

E.4 Surface Water, Groundwater and Leachate

Surface water monitoring locations shall be those as set out in Figure Ball-Mon-001 Rev. B of the application and of the parameters and frequencies outlined in Table E.4.4.

Table E.4.1 Surface Water Monitoring Locations

STATION
SW 1
SW2
SW3
SW4
SW5

Groundwater monitoring locations shall be those as set out in Figure Ball-Mon-001 Rev. B of the application and of the parameters and frequencies outlined in Table E.4.4.

Table E.4.2 Groundwater Monitoring Locations

STATION
BH86/9 (V5)
BH96/3
BH96/5A
BH96/6
MW
Twin Shafts
RC1
RC2
RC3
RC4
RC5
RC6

Leachate monitoring locations shall be agreed with the Agency and of the parameters and frequencies outlined in Table E.4.4.

Table E.4.3 Leachate Monitoring Locations

LEACHATE INSPECTION MANHOLES
RC2
RC3
RC4
RC5
V9

Table E.4.4 Water and Leachate - Parameters /Frequency

Parameter ^{Note 1}	SURFACE WATER	GROUNDWATER	LEACHATE
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Quarterly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Weekly
Ammoniacal Nitrogen	Quarterly ^{Note 6}	Quarterly	Quarterly
BOD	Quarterly ^{Note 6}	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly ^{Note 6}	Quarterly	Quarterly
pH	Quarterly ^{Note 6}	Quarterly	Quarterly
Total Suspended Solids	Quarterly ^{Note 6}	Not Applicable	Not Applicable
Temperature	Quarterly ^{Note 6}	Quarterly	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	Quarterly	Annually
Lead	Annually	Annually	Annually
List I/II organic substances ^{Note 3}	Note 8	Annually	Note 8
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Potassium	Annually	Quarterly	Annually
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Annually
Total Alkalinity	Annually	Annually	Annually ^{Note 5}
Total Phosphorus / orthophosphate	Annually ^{Note 6}	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	Quarterly	Annually
Total Coliforms ^{Note 4}	Not Applicable	Quarterly	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: In the case where groundwater is extracted for drinking water, if there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.
- Note 5: Only to be analysed in instances of on-site treatment of leachate.
- Note 6: Discharge of diverted surface water/groundwater, at a monitoring location to be agreed in accordance with Condition 9.8, shall be monitored on a monthly basis for these parameters unless flow in that month does not allow such monitoring.
- Note 8: Once off for List I/II organic substances and thereafter as required by the Agency.

E.5 Meteorological Monitoring

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

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

E.6 Landfill Gas Flare / Combustion Plant

Monitoring of the landfill gas flare or combustion plant under Condition 4.17 shall be carried out at monitoring points to be agreed with the Agency prior to the operation of the plant.

Table E.6.1 Landfill Gas Flare / Combustion Plant Monitoring

Parameter	Monitoring Frequency	Analysis Method ^{Note1} /Technique ^{Note2}
Inlet		
Methane (CH ₄) % v/v	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO ₂)%v/v	Weekly	Infrared analyser/ flame ionisation detector
Oxygen (O ₂) %v/v	Weekly	Infrared analyser
Outlet		
Volumetric Flow rate	Biannually	Pitot Tube Method
SO ₂	Biannually	Flue gas analyser
NO _x	Biannually	Flue gas analyser
CO	Continuous	Flue gas analyser
Particulates	Annually	Isokinetic/Gravimetric
TA Luft Class I, II, III organics	Annually	Adsorption/Desorption / GC /GCMS ^(Note 3)
Hydrochloric acid	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	Annually	Impinger / Ion Chromatography

Note1: All monitoring equipment used should be intrinsically safe.

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

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

SCHEDULE F : Emission Limits

F.1 Noise Emissions: (Measured at the monitoring points to be agreed with the Agency).

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

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

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

F.3 Dust Deposition Limits: (Measured at the monitoring points to be agreed with the Agency).

Level (mg/m ² /day) ^{Note 1}
350

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

F.4 Surface Water Discharge Limits: Measured at the monitoring points identified on Drawing BALL-MON-002

Level (Suspended Solids mg/l)
35 mg/l

F.5 Emission Limits Values for Landfill Gas Flare and/or Utilisation Plant

Emission Point reference nos: (to be agreed with the Agency)

Location: Landfill Gas Combustion Plant and flarestacks

Volume to be emitted: 3000m³/hr

Minimum discharge height: 5m

Parameter	Emission Limit Value
Nitrogen oxides as (NO ₂)	500 mg/m ³
CO	650 mg/m 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.

SCHEDULE G : Waste Acceptance

Table G.1 Waste Categories and Quantities

WASTE TYPE	MAXIMUM TONNES PER ANNUM
Household	40,000
Treated Sludges	2,000
TOTAL	42,000

Signed on behalf of the said Agency
on the 22nd day of November, 2000

_____ Breda Sheehan

Authorised Person