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WASTE LICENCE PROPOSED DECISION

Waste Licence Register Number:	70-1
Applicant:	Cork County Council
Location of Facility:	Benduff Landfill Site, Benduff, Rosscarbery, Co. Cork.

Table of Contents

	Page No.
REASONS FOR THE DECISION	1
<i>PART I ACTIVITIES LICENSED</i>	1
INTERPRETATION	3
<i>PART II CONDITIONS</i>	6
CONDITION 1 SCOPE	6
CONDITION 2 MANAGEMENT OF THE ACTIVITY	7
CONDITION 3 NOTIFICATION AND RECORD KEEPING	8
CONDITION 4 SITE INFRASTRUCTURE	11
CONDITION 5 WASTE MANAGEMENT	15
CONDITION 6 ENVIRONMENTAL NUISANCES	16
CONDITION 7 EMISSIONS AND ENVIRONMENTAL IMPACTS	18
CONDITION 8 RESTORATION AND AFTERCARE	19
CONDITION 9 ENVIRONMENTAL MONITORING	20
CONDITION 10 CONTINGENCY ARRANGEMENTS	21
CONDITION 11 CHARGES AND FINANCIAL PROVISIONS	22
SCHEDULE A : Content of the Environmental Management Programme	24
SCHEDULE B : Content of the Annual Environmental Report	24
SCHEDULE C : Recording and Reporting to the Agency	25
SCHEDULE D : Specified Engineering Works	26
SCHEDULE E : Monitoring	27
SCHEDULE F : Emission Limits	31
SCHEDULE G : Waste Acceptance	32

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

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

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

This activity is limited to normal landfilling operations up to a maximum of 12,000 tonnes per annum.

Class 2: Land treatment, including biodegradation of liquid or sludge discards in soils.

This activity is limited to the disposal of sludge at the landfill.

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 contaminated water pending its disposal at another appropriate facility.

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

This activity is limited to the temporary storage of waste which is unsuitable for deposit at this facility and which has been duly notified to the Agency.

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 trial composting of wastes accepted subject to a limit of 1000m³ at any one time at the facility, subsequent to prior written approval by the Agency.

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

This activity is limited to the acceptance and separation of beverage cans, white goods, scrap cars and other metals at the civic waste facility.

Class 4: Recycling or reclamation of other inorganic materials.

This activity is limited to the receipt, holding and recovery of glass and inert construction and demolition wastes (such as bricks, cement, ceramics, soils) to be sent off site for reprocessing or to be used in the restoration of the Benduff landfill site subject to the prior agreement of the Agency.

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 inert material diverted from the landfill to be used as cover material, intermediate cover or the formation of embankments at the site.

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 temporary storage of waste prior to recycling, recovery and/or reuse on-site.

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.
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 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.
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	Cork County Council, Court House, Skibbereen, Co. Cork.
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	Monday to Saturday (March to October) 8.30am – 6pm Monday to Saturday (November to February) 8.30am – 5pm
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. 98-00405 Fig.3 Rev. A entitled Site Plan (received 30th September 1998) 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 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 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 three months from the date of grant of this licence, the licensee shall submit written details of the management structure of the facility for the agreement of the Agency. Any proposed changes in the management structure shall be submitted in writing to the Agency for its agreement. Written details of the management structure shall include the following information:

- a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence;

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

2.7 Communications

2.7.1 Within 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.

2.8 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:

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

- f) any occurrence with the potential for environmental pollution; and,
 - g) any emergency.
- 3.2 The written record shall include all aspects described in Condition 10.6(a-e).
- 3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:
- a) notify the Agency as soon as practicable and in any case not later than 10.00 am the following working day after the occurrence of any incident;
 - b) submit the written record required by this condition to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident; and
 - c) in the event of any incident which relates to discharges to surface water, notify the Southwestern 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 All documentation and records required to be made under this licence shall be retained by the licensee, unless otherwise agreed with the Agency.
- 3.8 The licensee shall provide additional copies of any documentation and records referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.
- 3.9 The licensee shall keep the following documents at the facility office referred to in Condition 4.5.
- a) the current waste licence relating to the facility;
 - b) the current EMS for the facility;

- c) the previous year's AER for the facility;
 - d) all written procedures produced by the licensee which relate to the licensed activities.
- 3.10 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:
- a) the name of the carrier;
 - b) the vehicle registration number;
 - c) the name of the producer(s)/collector(s) of the waste as appropriate;
 - d) a description of the waste including the associated EWC codes;
 - e) the estimated quantity of the waste, recorded in tonnes;
 - f) the name of the person checking the load; and,
 - g) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.
- 3.11 The licensee shall maintain a written record of the type and quantity, recorded in tonnes, of all wastes recovered or disposed of at the facility.
- 3.12 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:
- a) the name of the carrier;
 - b) the date and time of removal of leachate from the facility;
 - c) the volume of leachate, in cubic metres, removed from the facility on each occasion;
 - d) the name and address of the Waste Water Treatment Plant to which the leachate was transported;
 - e) any incidents or spillages of leachate during its removal or transportation.
- 3.13 The licensee shall maintain a written record of all complaints relating to the operation of the activity. Each such record shall give details of the following:
- a) date and time of the complaint;
 - b) the name of the complainant;
 - c) details of the nature of the complaint;
 - d) actions taken on foot of the complaint and the results of such actions; and,
 - e) the response made to each complainant.

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

CONDITION 4 SITE INFRASTRUCTURE

- 4.1 The licensee shall establish all infrastructure referred to in this licence prior to the commencement of the licensed activities or 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 grant of this licence, fencing shall be installed and maintained as shown in Drawing No. 98-00405 Fig. A.2 Rev. B entitled Site Layout Plan (received 30th May 2000). The entrance gates shall comprise of steel security gates.

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 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. 98-00405 Fig. A.2 Rev. B entitled Site Layout Plan (received 30th May 2000). 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 Within six months of the date of grant of this licence, a Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained. The location and design of the Waste Inspection and Quarantine areas shall 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 Within six months of the date of grant of this licence, the licensee shall provide and maintain a weighbridge at the facility. The location of the weighbridge shall be agreed with the Agency.
- 4.9 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 4.10 The licensee shall provide and maintain a septic tank at the facility for the treatment of sewage arising on-site. The location of the septic tank shall be as shown on Drawing No. 98-00405 Fig. A.2 Rev. B entitled Site Layout Plan (received 30th May 2000), unless otherwise agreed with the Agency. Any percolation area shall satisfy the criteria set out in SR6 Septic Tank Systems (NSAI 1991).
- 4.11 Fuel/Waste oil storage.
- 4.11.1 No fuel shall be stored at the facility unless the prior agreement of the Agency has been obtained.
- 4.11.2 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:
- i) 110% of the capacity of the largest tank or drum within the bunded area; or
 - ii) 25% of the total volume of substance which could be stored within the bunded area.
- 4.11.3 All drainage from bunded areas shall be diverted for collection and safe disposal and all inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 4.11.4 The integrity and water tightness of all the bunds, tanks and containers and their resistance to penetration by water and other materials stored therein shall be tested and demonstrated by the licensee and shall be reported to the Agency within six months of the date of grant of this licence. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. The licensee shall submit to the Agency for its agreement in each case a written report on the storage of fuels on site. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 4.11.5 All tanks and containers shall be labelled to clearly indicate their contents.
- 4.12 Civic Waste Facility
- 4.12.1 Within three months of the date of grant of this licence the licensee shall submit a detailed drawing showing the layout of the Civic Waste Facility for the agreement of the Agency.
- 4.12.2 All receptacles at the Civic Waste Facility shall be clearly labelled to indicate their contents.
- 4.12.3 Within six months of the date of grant of this licence a bunded area for the storage of waste oils shall be provided.
- 4.13 Specified Engineering Works
- 4.13.1 The licensee shall submit written proposals for all Specified Engineering Works, as defined in Schedule D: Specified Engineering Works, to the Agency

for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

- 4.13.2 All specified engineering works shall be supervised by a competent person(s) agreed in advance by the Agency and that person, or persons, shall be present at all times during which relevant works are being undertaken.
- 4.13.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall include the following information;
 - a) a description of the works;
 - b) as-built drawings of the works;
 - c) records and results of all tests carried out (including failures);
 - d) where relevant a drawing and sections showing the location of all samples and tests carried out;
 - e) where relevant daily records sheets/diary;
 - f) name(s) of contractor(s)/individual(s) responsible for undertaking the engineering works;
 - g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
 - h) records of any problems and the remedial works carried out; and
 - i) any other information requested in writing by the Agency.

4.14 Leachate Management

- 4.14.1 Within three months of the date of grant of this licence, an additional borehole shall be installed on the western side of the landfilled area, in the waste, at a location to be agreed with the Agency. This borehole shall be used to facilitate the measurement of leachate levels and the removal of leachate.
- 4.14.2 If substantial levels of leachate are detected in the waste, then the licensee shall abstract that leachate and dispose of it at an agreed Waste Water Treatment Plant.
- 4.14.3 Recirculation of leachate or other contaminated water shall not be undertaken at the facility.

4.15 Landfill Gas Management

- 4.15.1 Within twelve months of the date of grant of this licence, a system for the active collection and flaring of landfill gas shall be installed at the facility. The flare shall be of an enclosed type design and shall comply with the emission limits in Schedule F. Details of the system to be installed shall be submitted to the Agency for its agreement within six months of the date of grant of this licence.
- 4.15.2 Flare unit efficiency shall be tested once it is installed and once every three years thereafter.

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

4.16 Capping

4.16.1 The licensee shall submit details of the proposed daily, intermediate and final capping systems to the Agency for its agreement within three months of the date of grant of this licence.

4.16.2 Unless otherwise agreed with the Agency final capping shall consist of the following:

- top soil (150 -300mm);
- subsoils, such that total thickness of top soil and subsoils is at least 1m;
- drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s;
- 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
- 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.

4.16.4 The licensee shall provide a six monthly report to the Agency on the quantity of capping materials stockpiled at the facility. In the event that the stockpile fails to contain the requisite volume of capping materials for the next twelve months, the report required by this condition shall contain a proposal for the Agency's agreement for alternative sources of capping materials or for the utilisation of geosynthetic materials.

4.17 Surface Water

4.17.1 Surface water run-off from the facility shall be collected and discharged so that it does not cause environmental pollution.

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

CONDITION 5 WASTE MANAGEMENT

5.1. Waste Acceptance

5.1.1 No hazardous waste or liquid waste shall be disposed of at the facility.

5.1.2 Inert waste including construction and demolition waste shall not be disposed of at the facility but can be accepted for recovery such as daily cover, site construction works and landfill restoration.

- 5.1.3 Only treated sludge shall be accepted at the facility, unless otherwise agreed with the Agency.
- 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 disposed of at the facility unless the prior agreement of the Agency has been obtained.
- 5.3. Waste Acceptance Procedures shall be carried out in accordance with Attachment E.2.1 Waste Acceptance Procedures for Benduff Landfill of the application, unless otherwise agreed with the Agency.
- 5.4 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 and may be stored for a maximum of forty eight hours.
- 5.5 The quantity of wastes to be accepted for disposal at the landfill, shall not exceed 12,000 tonnes per annum, unless otherwise agreed in advance with the Agency. The quantity of sewage sludge and industrial non-hazardous sludge to be accepted for disposal at the landfill shall not exceed 1,500 and 300 tonnes per annum, respectively.
- 5.6 Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.7 Scavenging shall not be permitted at the facility.
- 5.8 Waste shall only be accepted at the facility between the hours of 8.30am to 5.30pm Monday to Saturday (March to October) and 8.30am to 4.30pm Monday to Saturday (November to February) with the exclusion of Bank Holidays and Sundays unless otherwise agreed in advance with the Agency.
- 5.9 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.
- 5.10 The working face of the operational cell shall, at the end of each day, be covered with material suitable to minimise any nuisances occurring.
- 5.11 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.
- 5.12 Within three months of the date of grant of this licence, the licensee shall submit a drawing showing the phasing plan for the facility for agreement with the Agency.
- 5.13 Industrial/Sewage Sludge
- 5.13.1 Sludge shall only be accepted at the facility between the hours of 8.30am and 2.00pm Monday to Friday inclusive.

- 5.13.2 Within three months of the date of grant of this licence, the licensee shall submit procedures for the handling and disposal of sewage sludge for agreement with the Agency.
- 5.14 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.
- 5.15 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.
- 5.16 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over without prior agreement from the Agency.
- 5.17 No smoking shall be allowed on the facility (other than in the office as shown on Drawing No. 98-00405 Fig. A.2 Rev. B entitled Site Layout Plan (received 30th May 2000)).
- 5.18 Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor or an approved licensed facility as agreed by the Agency. The ultimate recovery or disposal facility for all wastes shall be agreed in advance with the Agency. All wastes removed off-site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.
- 5.19 Only the following wastes may be accepted at the Civic Waste Facility: waste oils; glass; beverage cans, scrap cars, white goods and any other recyclable wastes, as may be agreed with the Agency.

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. Litter netting shall be installed and maintained around the perimeter of the active tipping area. The netting installed shall meet the guidance given in the Agency's Manual on "Landfill Operational Practices". The netting shall be kept tidy and litter trapped in the netting shall be removed as soon as practicable.
- 6.3.2. 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.

- 6.3.3 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.
- 6.3.4 All loose litter accumulated within the facility and its environs, excluding that which is deposited on the working face, shall be removed subject to the agreement of the landowners and appropriately disposed of on a daily basis.
- 6.4. Any waste placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed by the licensee immediately and in any event by 10:00am of the next working day, after such waste is discovered. Such waste shall be disposed of at an appropriate facility.
- 6.5. The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 6.6. 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. Within six months from the date of grant of this licence the licensee shall submit to the Agency for its agreement, an assessment of the effectiveness of the bird control measures at the facility. This assessment shall include, where required:
- a) proposals for additional bird control measures;
 - b) method for assessing the effectiveness of such additional measures; and
 - c) timescales for the implementation of such measures.
- 6.9 Within three months of the date of grant of this licence the licensee shall submit to the Agency for its agreement a programme for the control and eradication of vermin and fly infestations at the facility. These proposals should include as a minimum, details on the rodenticide(s) and insecticide(s) to be used, operator training, mode and frequency of application and measures to contain sprays within the facility boundary.

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

CONDITION 7 EMISSIONS & ENVIRONMENTAL IMPACTS

- 7.1. No specified emission from the facility shall exceed the emission limit values set out in Schedule F: Emission Limits of this licence. There shall be no other emissions of environmental significance.
- 7.2. All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the licensee.

- 7.3. The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 7.4. Landfill Gas
- 7.4.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:
- a) Methane, greater than or equal to 1.0% v/v; and
 - b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 7.4.2. 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
- 7.4.3. Emission limits for emissions to atmosphere in this licence shall be interpreted in the following way:-
- 7.4.3.1. 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.
- 7.4.3.2. 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.
- 7.5 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. Permission for the disposal of leachate at that wastewater treatment plant shall be obtained from the Sanitary Authority on an annual basis. Disposal procedures for the leachate at the waste water treatment plant shall be in accordance with any written requirements of the Sanitary Authority.

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, detailed Restoration and Aftercare Plans for the facility shall be submitted for the agreement of the Agency. These shall have regard to the requirements of Conditions 8.2 and 8.3, the Landfill Directive (1999/31/EC) and the guidance published in the Agency's Landfill Manual: "*Landfill Restoration and Aftercare*".
- 8.2. Unless otherwise agreed in advance the final post-settlement height of the facility shall not exceed 95m O.D. at any location.
- 8.3. Notwithstanding Condition 8.2, within three months of the date of grant of this licence, the licensee shall submit a drawing of the final contours of the facility for the agreement of the Agency.
- 8.4. 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.
- 8.5. 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. 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.
- 8.6. Preservation of the chimney and related ruinous structures at the facility shall be carried out as outlined in *Attachment H.3 - Cultural Heritage* 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 E: Monitoring and as specified in the Conditions of this licence.
- 9.2. Within three months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement details of the permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.
- 9.3. Within three months of the date of grant of this licence the licensee shall make arrangements for representative meteorological data to be collated for the facility to fulfil the requirements of Schedule E.6: Meteorological Monitoring.
- 9.4. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and off-site points as required by the Agency. All ditches and drains located around the perimeter of the facility are to be kept clear such that monitoring can be carried out successfully.
- 9.5. The licensee shall maintain all sampling and monitoring points, and clearly label and name (including national grid number) all sampling and monitoring locations, so that they may be used for representative sampling and monitoring.
- 9.6. Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers instructions (if any) so that all monitoring results accurately reflect any emission or discharge or environmental parameter.

- 9.7 The licensee shall amend the frequency, locations, methods and scope of monitoring, sampling, analyses and investigations only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.
- 9.8 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.
- 9.9 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.
- 9.10 All environmental monitoring shall commence no later than two months after the date of grant of this licence, unless otherwise specified by this licence or agreed by the Agency.
- 9.11 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, unless otherwise agreed in advance with the Agency.
- 9.12 Within three 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 Within nine months of the date of grant of this licence, the licensee shall submit a report on previous landfilling on lands adjacent to the facility and measures to prevent environmental pollution arising from these wastes, to the Agency.
- 9.14 All landfill gas monitoring equipment used for monitoring landfill gas under the requirements of this licence shall be certified as being intrinsically safe.
- 9.15 Within six months of the date of grant of this licence, the licensee shall submit to the Agency an updated appropriately scaled drawing(s) showing the location of all the monitoring locations that are stipulated in this licence.
- 9.16 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 granting of this licence.

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

CONDITION 10 CONTINGENCY ARRANGEMENTS

- 10.1. The licensee shall, within six months of the date of grant of this licence, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment.
- 10.2. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.

- 10.3. All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.
- 10.4. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency. Immediate action shall be taken to extinguish it and the appropriate authorities notified.
- 10.5. In the event that monitoring of local wells (identified in Condition 9.1) and livestock water supplies indicates that the facility is having a significant adverse effect the quantity and/or quality of the water supply this shall be treated as an incident. The licensee shall submit to the Agency for its agreement and within a time specified in writing by the Agency, written proposals for the provision of an alternative supply of water to those affected.
- 10.6. Unless otherwise notified in writing by the Agency, in the event that any monitoring, sampling, complaints or observations indicate that an incident has, or may have, taken place, the licensee shall immediately:
- a) identify the date, time and place of the incident;
 - b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission;
 - c) isolate the source of the emission;
 - d) evaluate the environmental pollution, if any, caused by the incident;
 - e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
 - f) provide a proposal to the Agency for its agreement within one month to:
 - i) identify and put in place measures to avoid reoccurrence of the incident; and
 - ii) identify and put in place any other appropriate remedial action.
- 10.7. In the event that monitoring of the slide slopes of the facility indicate that there may be a risk of slope failure, this will be treated as an incident and a proposal for remediation action submitted to the Agency for its agreement within one month of the date of the monitoring being carried out.
- 10.8. The licensee shall carry out a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities and shall, within six months from the date of grant of this licence submit a report, including recommendations on the risk assessment to the Agency for its agreement. The Fire Authority shall be consulted by the licensee during this assessment.

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

CONDITION 11 CHARGES & FINANCIAL PROVISIONS

11.1 Agency Charges

- 11.1.1 The licensee shall pay to the Agency an annual contribution of £9,630 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.

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

11.2 Financial Provision for Closure, Restoration and Aftercare

- 11.2.1 The licensee shall from a date to be set by the Agency establish and maintain a fund, or other form of approved security, 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 changes, 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 twelve 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.

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.

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	Annually	Within three months of the date of grant of the licence and one month after end of each year thereafter.
Topographical survey	Annually	Within three months of the date of grant of the licence and one month after end of each year thereafter.
Flare Unit Efficiency	Every three years	Once when installed and one month after end of three year being reported on.
Capping Material Stockpile	Twice a year	One month after six monthly reporting period.
Any other monitoring	As they occur	Within ten days of obtaining results.

Note 1: Unless altered at the request of the Agency

Schedule D: Specified Engineering Works

Specified Engineering Works

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 waste oil storage areas.

Installation of Civic Waste Facility.

Installation of weighbridge, waste inspection and quarantine area.

Installation of landfill gas management and monitoring systems.

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

Installation of alternative drinking water supplies.

Installation of groundwater control and/or monitoring systems.

Surface water management works.

Restoration and Aftercare Works.

Nuisance control measures

Any other works notified in writing by the Agency.

Schedule E: Monitoring

Monitoring to be carried out as specified below. Grid references of all monitoring locations are to be submitted within three months of the date of grant of this licence.

E.1 Landfill Gas

Landfill gas monitoring locations shall be those as set out in Table E.1.1 and Drawing No. 98-00405 Fig. 6 Rev. A entitled Location plan of environmental monitoring points (received 30th September 1998) of the application.

Table E.1.1 Landfill Gas Monitoring Locations

STATION
MW1
MW2
MW3
MW4
L1
Site office
Landfill Gas Flare

Table E.1.2 Landfill Gas Monitoring Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method ^{Note1} /Technique ^{Note2}
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH₄) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO₂)%v/v	Monthly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O₂) %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 Landfill Gas Flare

Monitoring of the landfill gas flare required to be installed under Condition 4.15 shall be carried out as set out in Table E.2.1. Monitoring points to be agreed with the Agency prior to the operation of the plant.

Table E.2.1 Landfill Gas Flare

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
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

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

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

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

E.3 Dust

Dust monitoring locations shall be those as set out in Table E.3.1 and Drawing No. 98-00405 Fig. 6 Rev. A entitled Location plan of environmental monitoring points (received 30th September 1998) of the application.

Table E.3.1 Dust monitoring locations

STATION
ST1
ST2
ST3

Table E.3.2 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.4 Noise

Noise monitoring locations shall be those as set out in Table E.4.1 and Drawing No. 98-00405 Fig. 6 Rev. A entitled Location plan of environmental monitoring points (received 30th September 1998) of the application.

Table E.4.1 Noise Monitoring Locations

STATION
N1
N2
N3
N4
S1
Noise sensitive locations ^{Note 1}

Note 1: To be located at residences numbered 1, 2 & 4 as shown on Drawing No. 98/00405 Fig. 4 Rev. A entitled 500m Site boundary offset (received 30th September 1998).

Table E.4.2 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.5 Surface Water, Groundwater and Leachate

Surface water, ground water and leachate monitoring locations shall be those as set out in Table E.5.1 and Drawing No. 98-00405 Fig. 6 Rev. A entitled Location plan of environmental monitoring points (received 30th September 1998) of the application.

Table E.5.1 Surface water, ground water and leachate monitoring locations

Surface water station	Groundwater station	Leachate station
SW1	MW1	L1
SW2	MW2	Note 2
SW3	MW3	-----
SW4	MW4	-----
SW5 ^{Note 1}	SPJ1	-----
-----	SPM2	-----

Note 1: At point of discharge of surface water from site at a location to be agreed with the Agency.

Note 2: Other locations agreed with or instructed by the Agency, such as referred to in Condition 4.14.1.

Table E.5.2 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}	Not applicable	Annually	Note 5
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Potassium	Annually	Quarterly	Quarterly
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Quarterly
Total Alkalinity	Annually	Annually	Not applicable
Total Phosphorus / orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly	Quarterly
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Zinc	Annually	Annually	Annually
Phenols	Not Applicable	Quarterly	Not Applicable
Faecal Coliforms ^{Note 4}	Not Applicable	Annually	Annually
Total Coliforms ^{Note 4}	Not Applicable	Annually	Annually
Biological Assessment	Annually ^{Note 6}	Not Applicable	Not Applicable

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

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

- Note 3: Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (US Environmental Protection Agency method 525 or equivalent, and pesticides (US Environmental Protection Agency method 608 or equivalent)
- Note 4: If there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.
- Note 5: Once off for List I/II organic substances and thereafter as required by the Agency.
- Note 6: To be undertaken at WQ1 and WQ2 as shown on Drawing No. 98-00405 Fig. 6 Rev. A entitled Location plan of environmental monitoring points (received 30th September 1998) of the application. Grid references are to be submitted within three months of the date of grant of this licence. Appropriate biological methods (such as EPA Q-Rating System to be used for the assessment of rivers and streams).

E.6 Meteorological Monitoring

Data to be obtained from the meteorological station at Cork Airport.

Table E.6.1 Meteorological Monitoring

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

Schedule F: Emission Limits

F.1 Noise Emissions: (Measured at any noise sensitive location).

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 indicated in Table E.3.1).

Level (mg/m ² /day) ^{Note 1}
350

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

F.4 Emission Limit Values for Landfill Gas Flare

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

Location: Landfill Flarestacks

Volume to be emitted: 3000m³/hr

Minimum discharge height: 5m

Parameter	Emission Limit Value ^{Note 1}
Nitrogen oxides as (NO ₂)	150mg/m ³ for Flare Stacks
CO	50mg/m ³ for Flare Stacks
Particulates	130 mg/m ³
TA Luft Organics Class I ^{Note 2}	20 mg/m ³ (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II ^{Note 2}	100 mg/m ³ (at mass flows > 2 kg/hr)
TA Luft Organics Class III ^{Note 2}	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: Dry gas referenced to 5% oxygen by volume.

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

Schedule G: Waste Acceptance

Table G.1 Waste Categories and Quantities

WASTE TYPE	MAXIMUM TONNES PER ANNUM
Municipal waste	10,200
Treated sewage sludge	1500
Industrial non-hazardous sludge	300
TOTAL	12,000

Given by the Agency on the 16th day of August 2000.

Signed on behalf of the said Agency _____

on the 16th day of August 2000

B. Sheehan Authorised Person