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County Wexford, Ireland

WASTE LICENCE
LANDFILL FOR NON-HAZARDOUS WASTE

Waste Licence	32-1
Register Number:	
Licensee:	Waterford County Council
Location of Facility:	Dungarvan Waste Disposal Site, Ballynamuck Middle, Dungarvan, County Waterford.

INTRODUCTION

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

The facility includes an existing Landfill, a Civic Waste Facility and a Metal Recovery Compound. A Construction and Demolition Recovery area is proposed.

This licence is for the continued acceptance of municipal waste within the existing landfill footprint of the Dungarvan Landfill Facility at Ballynamuck Middle, Dungarvan, County Waterford up to 30 June 2003, the restoration of the landfill by 31 December 2005, the operation of the civic waste facility, materials recovery area and a construction and demolition waste recovery area. The licence requires the infrastructure to be upgraded, the restoration of the areas where waste has been deposited and monitoring of the impacts of the facility.

The acceptance of municipal waste for disposal at the facility will cease on 30 June 2003. There are no leachate or landfill gas management systems in place at the facility. The licence requires the introduction of leachate and landfill gas management systems and surface water and groundwater management programmes at the facility. The intake of inert waste at the facility is restricted to material suitable for use in site development and restoration works. The maximum height of the waste deposited at the facility prior to capping and restoration is 15m O.D Malin Head.

The licensee must manage and operate the facility to ensure that the activities do not cause environmental pollution. The licensee is required to carry out regular environmental monitoring and submit all monitoring results, and reports on the operation and management of the facility, to the Agency. The conditions of this licence set out in detail the legal constraints under which Waterford County Council is allowed to operate and manage the facility.

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DECISION & REASONS FOR THE DECISION

Reasons for the Decision

The Environmental Protection Agency (the Agency) is satisfied, on the basis of the information available, that the waste activity, or activities, licensed hereunder will comply with 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 and objections received from other parties and the reports of its inspectors.

The Agency decided to grant a licence to cease deposition of municipal waste in an orderly manner to cap and restore the existing facility, to prevent the pollution of groundwater and surface waters and to remediate, restore and close the facility. The grant of the licence will ensure that the facility is closed, remediated and restored in an orderly manner within the timescale set out in the licence.

The licence provides for phased closure and restoration of the landfill facility. Municipal waste acceptance at the facility shall cease by 30 June 2003. Inert waste for the capping and restoration of the facility may be accepted until 31 December 2005.

The licence includes for monitoring of the impacts of the facility and full restoration of the facility which must be completed by 31 December 2005. Aftercare monitoring will be required following closure as set out in the licence.

In coming to this decision the Agency also took account of Section 52(2)(e) of the Environmental Protection Agency Act, 1992.

Part I Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Agency, under Section 40(1) of the said Act hereby grants this Waste Licence to Waterford County Council to carry on the waste activities listed below at Dungarvan Waste Disposal Site, Ballynamuck Middle, Dungarvan, Co. Waterford subject to twelve conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

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

Class 1	Deposit, on in or under land. This activity is limited to the acceptance of municipal waste only, for disposal within the existing landfill footprint within the facility for the period up to 30 June 2003.
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 generated within the facility in a lined leachate storage lagoon and the storage of surface water run off in a surface water retention pond(s).
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 was produced. This activity is limited to the storage of rejected waste in the Waste Inspection and Quarantine Area and the Construction and Demolition Recovery Area prior to the removal of such waste offsite for disposal at an appropriate facility.

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 acceptance of organic waste including cardboard and paper at the civic waste facility only and the acceptance and storage of waste oils in appropriate containers at the civic waste facility prior to removal offsite.
Class 3.	Recycling or reclamation of metals and metal compounds: This activity is limited to the acceptance of white goods within a designated Metal Recovery Area, the acceptance and storage of beverage cans in appropriate containers at the civic waste facility prior to removal offsite.
Class 4.	Recycling or reclamation of other inorganic materials: This activity is limited to the acceptance and storage in appropriate containers of glass bottles, batteries and fluorescent tubes and the recovery of inert waste at the facility for use in site development and restoration works.
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 suitable inert waste in site development and restoration 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 wastes within designated areas and receptacles prior to recovery offsite and the storage of inert waste prior to restoration of the facility.

Part II: Activities Refused

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency, under Section 40(1) of the said Act hereby refuses the following classes of activities.

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

Class 2.	Land treatment, including biodegradation of liquid or sludge discards in soils. Reason: The continued disposal of sludges at the facility would result in environmental pollution.
Class 11.	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule. Reason: No relevant proposals were included in the licence application.
Class 12.	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule. Reason: No relevant proposal was included in the licence application. Recovery and recycling activities at the facility are allowed under Classes 2, 3 and 4 of the Fourth Schedule.

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

Class 8.	Oil re-refining or other re-uses of oil:
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Reason: No relevant proposals were included in the licence application.

INTERPRETATION

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

Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
Annually	At approximately twelve monthly intervals.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
Condition	A condition of this licence.
Construction and Demolition Waste	All wastes which arise from construction, renovation and demolition activities.
Containment boom	A boom which can contain spillages and prevent them from entering drains or watercourses.
Cover material	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed with the Agency.
Daily Cover	Is the term used to describe material spread (about 150mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible
Daytime	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 Limits	Those limits, including concentration limits and deposition levels established in Schedule C: <i>Emission Limits</i> of this licence.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC and any subsequent amendment published in the Official Journal of the European

Community.

Inert waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
Intermediate Cover	Refers to placement of material (minimum 300mm if soil is used) for a period of time prior to restoration or prior to further disposal of waste.
Landfill	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
Landfill Gas	Gases generated from the landfilled waste.
LEL (Lower Explosive Limit)	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
Licence	A Waste Licence issued in accordance with the Act.
Licensee	Waterford County Council
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Night-time	10.00 p.m. to 8.00 a.m.
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc, which may be recycled
Quarterly	At approximately three monthly intervals.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
Specified Emissions	Those emissions listed in Schedule C: <i>Emission Limits</i> of this licence.
Specified Engineering Works	Those engineering works listed in Schedule B: <i>Specified Engineering Works</i> of this licence.
Treatment	Treatment means the physical, thermal, chemical or biological processes, including sorting, that change the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery.
Trigger Level	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
White Goods	Refrigerators, cookers, ovens and other similar appliances.

EPA Working Day	Refers to the following hours; 9.00 a.m. to 5.30 p.m. Monday to Friday inclusive.
Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

PART III CONDITIONS

CONDITION 1 SCOPE OF THE LICENCE

- 1.1 Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2 The licensee shall submit to the Agency, within one month of the date of grant of licence, a map outlining the facility boundary in red. The facility boundary may only be amended, as shown in Drawing No. DUN-LF-010, Rev A (dated September 2000) entitled “Public Rights of Way through Dungarvan Landfill” and Drawing No. ENV-WDS/DL/01 (dated April 2002) entitled “Dungarvan Waste Disposal Site Access Road on South of Site”, in those areas where no deposited waste lies outside the facility boundary.
- 1.3 This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee’s statutory obligations or requirements under any other enactments or regulations.
- 1.4 The acceptance of waste for disposal at the facility shall cease on 30 June 2003. Suitable inert waste can, however, continue to be accepted at the facility for the purposes of site development works, remediation, rehabilitation, enhancement and restoration of the facility. The facility shall be capped and restored by 31 December 2005.
- 1.5 The total quantity of inert waste to be recovered at the facility to achieve the Restoration and Aftercare Plan shall be agreed with the Agency under Condition 4.1 of this licence.
- 1.6 Municipal Waste, Commercial Waste and Industrial Waste may be recovered at the civic waste facility subject to the maximum quantities and other constraints listed in Schedule A: *Waste Acceptance* of this licence unless otherwise agreed in advance with the Agency.
- 1.7 Waste Acceptance Hours and Hours of Operation
 - 1.7.1 Landfill
 - 1.7.1.1 Municipal waste, commercial waste and industrial non-hazardous waste may be accepted for disposal in previously filled areas within the existing landfill footprint subject to the maximum quantities and other constraints listed in Schedule A: *Waste Acceptance* of this licence and Condition 1.4 above.
 - 1.7.1.2 No hazardous waste, liquid waste, sludges, animal by-products or remains including in particular tannery fleshings, eggs and shellfish shells shall be disposed of at the facility.
 - 1.7.1.3 Suitable inert construction and demolition waste for use in site development works, remediation, rehabilitation, enhancement and restoration of the facility may be accepted at the facility.
 - 1.7.2 Landfill and Civic Waste Facility
 - 1.7.2.1 Waste may only be accepted at the landfill and the Civic Waste Facility between the hours of 09:00 to 17:00 Monday to Friday inclusive and 09:00 to 13:00 on Saturday.
 - 1.7.3 Hours of operation
 - 1.7.3.1 The facility may only be operated during the hours of 08:30 to 18:00 Monday to Friday inclusive and 08:30 and 14:00 on Saturday.

- 1.8 The following shall constitute an incident for the purposes of this licence:
- a) an emergency;
 - b) any emission which does not comply with the requirements of this licence;
 - c) any trigger level specified in this licence which is attained or exceeded; and
 - d) any indication that environmental pollution has, or may have, taken place.
- 1.9 Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying:
- 1.9.1. That only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice;
 - 1.9.2. That the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice; and
 - 1.9.3. That the licensee shall carry out any other requirement specified in the notice.
- When the notice has been complied with, the licensee shall provide written confirmation that the requirements of the notice have been carried out. No waste, other than that which is stipulated in the notice, shall be accepted at the facility until written permission is received from the Agency.
- 1.10 Every plan, programme or proposal submitted to the Agency for its agreement pursuant to any Condition of this licence shall include a proposed timescale for its implementation. The Agency may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary and shall notify the licensee in writing of any such modification or alteration. Every such plan, programme or proposal shall be carried out within the timescale fixed by the Agency but shall not be undertaken without the agreement of the Agency. Every such plan, programme or proposal agreed by the Agency shall be covered by the conditions of this licence

Reason: *To clarify the scope of this licence.*

CONDITION 2 MANAGEMENT OF THE FACILITY

2.1 Facility Management

- 2.1.1 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced, deputy shall be present on the facility at all times during its operation.
- 2.1.2 The Civic Waste Facility shall be supervised by an appropriately qualified and competent person at all times while waste may be accepted.
- 2.1.3 Both the facility manager and deputy, and any replacement manager or deputy, shall successfully complete both the FAS waste management training programme (or equivalent agreed with the Agency) and associated on site assessment appraisal within twelve months of appointment.

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

2.2 Management Structure

2.2.1 Within three months from the date of grant of this licence, the licensee shall submit written details of the management structure of the facility to the Agency. Any proposed replacement(s) in the management structure shall be notified in advance in writing to the Agency. Written details of the management structure shall include the following information

- a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence, in particular the name of the facility manager and any nominated deputies;
- b) details of the responsibilities for each individual named under a) above; and
- c) details of the relevant education, training and experience held by each of the persons nominated under a) above.

2.3 Environmental Management System (EMS)

2.3.1 The licensee shall establish and maintain an EMS. Within eighteen months from the date of grant of this licence, the licensee shall 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.

2.3.2 The EMS shall include as a minimum the following elements:

2.3.2.1 Schedule of Environmental Objectives and Targets

The objectives should be specific and the targets measurable. The Schedule shall address a five-year period as a minimum. The Schedule shall include a time-scale for achieving the objectives and targets and shall comply with any other written guidance issued by the Agency.

2.3.2.2 Environmental Management Plan (EMP)

The EMP shall include, as a minimum, the following:

- (i) the items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency;
- (ii) methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets;
- (iii) any other items required by written guidance issued by the Agency.

2.3.2.3 Corrective Action Procedures

The Corrective Action Procedures shall detail the corrective actions to be taken should any of the procedures detailed in the EMS not be followed.

2.3.2.4 Awareness and Training Programme

The Awareness and Training Programme shall identify training needs, for personnel who work in or have responsibility for the licensed facility.

2.4 Communications Programme

- 2.4.1 The licensee shall establish and maintain a Communications Programme to ensure that members of the public can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility. This shall be established within three months of the date of grant of this licence.

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

CONDITION 3 FACILITY INFRASTRUCTURE

- 3.1 The licensee shall establish all infrastructure referred to in this licence as required by the conditions of this licence.

3.2 Specified Engineering Works

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

3.3 Facility Notice Board

- 3.3.1 The licensee shall provide and maintain a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.
- 3.3.2 The board shall clearly show:
- a) the name and telephone number of the facility;
 - b) the normal hours of opening;
 - c) the name of the licence holder;
 - d) an emergency out of hours contact telephone number;
 - e) the licence reference number; and
 - f) where environmental information relating to the facility can be obtained.
- 3.4 Facility Security
- 3.4.1 Security and stockproof fencing 2.4m in height shall be installed and maintained around the facility boundary within nine months of the date of grant of this licence, except where fencing will be provided, in accordance with Condition 3.4.3.
- 3.4.2 The licensee shall remedy any defect in the gates and/or fencing as follows:
- a) a temporary repair shall be made by the end of the working day; and,
 - b) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days.
- 3.4.3 The licensee shall within twelve months of the date of grant of this licence install security fencing along the entire length of existing rights of existing way adjacent to the facility.
- 3.5 Facility Roads and Hardstanding
- 3.5.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
- 3.5.2 The facility entrance area, the access road to the Civic Waste Facility, the Civic Waste Facility itself, the Waste Inspection and Quarantine Area, the Metal Recovery Area and the Construction and Demolition Waste Recovery Area shall be paved and maintained within six months of the date of grant of this licence.
- 3.5.3 Within six months of the date of grant of this licence the licensee shall ensure that the approach road in the immediate vicinity of the facility entrance shall be maintained to an appropriate standard to facilitate the movement of landfill/civic waste facility related traffic.
- 3.6 Facility Office
- 3.6.1 The licensee shall provide and maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.
- 3.6.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.
- 3.7 Waste Inspection and Quarantine Areas

- 3.7.1 Within nine months of the date of grant of this licence a Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.
- 3.7.2 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.
- 3.7.3 Drainage from these areas shall be directed to the leachate lagoon following its construction.
- 3.8 Weighbridge
- 3.8.1 The licensee shall provide and maintain a weighbridge at the facility.
- 3.9 Wheel Cleaning
- 3.9.1 Within three months of the date of grant of this licence, the licensee shall establish and maintain a wheelwash at the facility. The wheelwash shall be located so as to ensure that all vehicles using the landfill facility pass through the wheelwash prior to exiting the facility.
- 3.10 Waste Water Treatment Plant
- 3.10.1 The licensee shall provide and maintain a Wastewater Treatment plant at the facility for the treatment of wastewater arising on-site. The system shall satisfy the design criteria set out in the Agency's manual on "Small Scale Treatment Systems". The outlet from the treatment plant shall discharge to the leachate lagoon (following its commissioning). Any percolation area shall satisfy the criteria set out in the Wastewater Treatment Manual, "*Treatment Systems for Single Houses*", published by the Agency.
- 3.11 Tank and Drum Storage Areas
- 3.11.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.
- 3.11.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:
- (a) 110% of the capacity of the largest tank or drum within the bunded area; or
 - (b) 25% of the total volume of substance which could be stored within the bunded area.
- 3.11.3 All drainage from bunded areas shall be diverted for collection and safe disposal.
- 3.11.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.11.5 The integrity and water tightness of all the bunds and leachate tankers and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency following their installation and prior to their use as storage areas or for the removal of leachate.
- This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion
- 3.12 Lining System
- 3.12.1 The lining system for the leachate storage lagoon shall comprise the following (or equivalent): a composite liner consisting of at minimum a basal soil/clay layer of at

least 1m in thickness with a permeability of less than $1 \times 10^{-9} \text{ ms}^{-1}$ overlain by a 2mm thick high density polyethylene (HDPE) layer. The side walls shall be designed and constructed to achieve an equivalent protection.

3.13 Leachate Management Infrastructure

3.13.1 Within twelve months of the date of grant of this licence, the licensee shall install leachate management infrastructure at the facility. The infrastructure shall provide for the abstraction of leachate from the waste, the collection of leachate in a leachate collection drain around the entire perimeter of the landfill, leachate treatment at a suitable treatment works and the monitoring of the effectiveness of the leachate collection drain. The leachate collection drain shall be maintained in accordance with the details shown on Drawing No. Dun EIS-004 Rev.O dated March 1999 unless otherwise agreed in advance with or specified by the Agency.

3.13.2 Within twelve months of the date of grant of this licence the licensee shall provide and maintain a leachate storage lagoon at the facility to facilitate the storage of leachate abstracted/collected from the waste. The lagoon lining shall be as described in Condition 3.12.1.

3.13.3 Prior to the installation of all structures for the treatment and storage of leachate the licensee shall submit proposals regarding the feasibility of roofing such structures so as to minimise the ingress of rain. These proposals shall be reported in accordance with Condition 3.2.1 Specified Engineering Works.

3.13.4 All leachate collection, pumping, containment structures on-site shall be inspected and certified fit for purpose prior to being commissioned and on an annual basis thereafter by an independent and appropriately qualified chartered engineer. Any remedial works recommended in the inspection report must be implemented within a time-scale to be agreed with the Agency.

3.14 Landfill Gas Management

3.14.1 Landfill Gas Flare

3.14.1.1 Within eighteen months of the date of grant of this licence, infrastructure for the active collection and flaring of landfill gas shall be installed and commissioned at the facility. The flare shall be of an enclosed type design.

3.14.1.2 Flare unit efficiency shall be tested once it is installed and once every three years thereafter.

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

3.14.3 Until the operation of the landfill gas flare, passive landfill gas management at the facility shall be carried out. Landfill gas management and infrastructure shall meet the recommendations given in the Agency Manual on "Landfill Operational Practices". All vents installed to facilitate passive gas venting shall be fitted with an effective activated carbon filter.

3.15 Landfill Gas Combustion Plant

3.15.1 Within nine months of the date of grant of this licence, the licensee shall undertake an assessment of the feasibility of landfill gas utilisation at the facility. A report on this assessment shall be submitted to the Agency within twelve months of the date of grant of this licence. If assessed to be feasible, the licensee shall install and commission a system for the utilisation of landfill gas within eighteen months of the date of grant of

this licence. The licensee shall install continuous carbon monoxide monitors on the outlets of the gas engine(s) prior to their commissioning.

3.16 Surface Water Management

3.16.1 A surface water retention pond shall be constructed within eighteen months of the date of grant of this licence. Prior to construction of this pond the licensee must separate and divert the surface water and leachate systems. As a minimum, the infrastructure shall be capable of the following:

- a) the prevention of contaminated water and leachate discharges into surface water drains and watercourses in particular the River Colligan, Dungarvan Harbour Special Protection Area and Dungarvan Harbour proposed Natural Heritage Area; and
- b) the collection/diversion of run off arising from capped and restored areas.

3.16.2 Within six months of the date of grant of this licence the licensee shall ensure the surface water collection drain along the southern boundary of the facility is sealed and a new drain is constructed to facilitate the collection of surface run-off from the facility.

3.16.3 The licensee shall maintain a reinforced riverbank using gabions or other appropriate measures to ensure the protection, from erosion, of the facility boundary with the River Colligan.

3.16.4 The licensee shall maintain a flood barrier and related infrastructure along the boundary of the facility with the River Colligan to stop intrusion of surface water and tidal waters into the facility.

3.17 Groundwater Management

3.17.1 Effective groundwater management infrastructure shall be provided and maintained at the facility during construction, operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall protect the groundwater resources from contamination by the waste activities (including restoration of the facility) and the storage of leachate and contaminated surface water at the facility.

3.18 Construction and Demolition Waste Recovery Area.

3.18.1 Within nine months of the date of grant of this licence, the licensee shall provide and maintain a construction and demolition waste recovery area at a location to be agreed in advance with the Agency. This infrastructure shall at a minimum comprise the following:

- a) an impermeable concrete slab; and
- b) collection and disposal infrastructure for all run-off.

3.18.2 Drainage from this area shall be directed to the leachate lagoon following its construction.

3.19 Civic Waste Facility

3.19.1 Within nine months of the date of grant of this licence, the licensee shall provide and maintain a Civic Waste Facility at a location to be agreed in advance with the Agency.

3.19.2 The licensee shall provide and maintain appropriate receptacles for the storage of waste for recovery and or disposal at the Civic Waste Facility unless otherwise agreed with the Agency.

3.19.3 Drainage from these areas shall be directed to the leachate lagoon following its construction.

3.20 Metal Recovery Area

3.20.1 The licensee shall provide and maintain clearly segregated, fenced and screened metal recovery area/scrap metal compound for the acceptance of white goods and other metal wastes, at a location to be agreed in advance with the Agency, within twelve months of the date of grant of this licence.

3.20.2 The licensee shall submit a proposal to the Agency for agreement on the construction of a suitable paved area for handling end of life vehicles prior to the handling of same.

3.20.3 The licensee shall submit a proposal to the Agency for agreement on the decontamination of end of life vehicles prior to handling of same.

3.21 Telemetry

3.21.1 A telemetry system shall be installed and maintained at the facility within eighteen months of the date of grant of this licence. This system shall be linked to the leachate, landfill gas, surface water and groundwater management systems at the facility. All facility operations linked to the telemetry system shall also have a manual control which will be reverted to in the event of break in power supply or during maintenance.

3.22 Monitoring Infrastructure

3.22.1 Landfill Gas

(i) Within nine months from the date of grant of this licence, the licensee shall install a minimum of three additional perimeter landfill gas monitoring points along the boundary of the facility with the River Colligan. These monitoring points shall be located so as to monitor effectively the occurrence of offsite migration of landfill gas.

(ii) Within six months from the date of grant of this licence, the licensee shall install an effective permanent gas monitoring system in the site office and any other enclosed structures at the facility.

3.22.2 Groundwater

(i) Within six months from the date of grant of this licence, the licensee shall, subject to the agreement of the relevant landowners, install one groundwater monitoring point upgradient and two groundwater monitoring points downgradient of the facility to allow for the sampling and analyses of groundwater.

(ii) Within six months of the date of grant of the licence, the licensee shall install a series of monitoring boreholes along the length of the leachate collection drain. The monitoring boreholes shall be designed and located so as to monitor the effectiveness of the leachate collection drain required by Condition 3.13.1.

3.22.3 Leachate

(i) Within twelve months from the date of grant of this licence, the licensee shall install an additional leachate monitoring point within Landfill Area 2 (Drawing No. DUN- LF-003, dated 05 May 2000) to allow for the sampling and analyses of leachate in the southwest section of the facility.

3.23 Replacement of Monitoring Infrastructure

- 3.23.1 Monitoring infrastructure which is damaged or proves to be unsuitable for its purpose shall be replaced within three months of it being damaged or recognised as being unsuitable.

3.24 Upgrading of Infrastructure associated with Recovery Activities

Within three months of the date of grant of this licence, the licensee shall submit to the Agency for agreement a proposal for upgrading the infrastructure associated with the recovery activities (including the Construction and Demolition Waste Recovery area, the Civic Waste Facility and the Metal Recovery Area) at the facility.

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

CONDITION 4 RESTORATION AND AFTERCARE

- 4.1. The licensee shall restore the facility on a phased basis. Within three months of the date of grant of this licence, the licensee shall submit to the Agency for agreement a Restoration and Aftercare Plan for the facility. The restoration plan shall, inter alia, provide for a method statement for the emplacement of the final capping/restoration layer(s), landscaping plans, seeding, tree planting, the ecological monitoring of restored cells and the restoration of the facility. The plan 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"*.
- 4.2. The Restoration and Aftercare Plan required under Condition 4.1 shall include the following:
- 4.2.1. A proposal for perimeter planting;
- 4.2.2. A schedule detailing the various stages of restoration, including timescales;
- 4.2.3. Details of the ongoing protection from any impacts of the landfill of the habitats immediately adjoining, upstream and downstream of the River Colligan, Dungarvan Harbour Special Protection Area and proposed Natural Heritage Area (developed in consultation with Dúchas); and,
- 4.2.4. The quantity of inert waste material to be used in site restoration.
- 4.3. Prior to the placement of the final capping system required in Condition 4.4, the maximum height of the waste deposited at the facility shall be 15m O.D Malin Head.
- 4.4. Final Capping
- 4.4.1. The 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 or a geocomposite drainage layer of equivalent transmissivity agreed in advance with the Agency;
 - compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-9} m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and

- e) gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 4.5. 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.
- 4.6. Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.
- 4.7. The restoration of the landfill facility shall be completed by 31 December 2005.
- 4.8. Soil Storage
 - 4.8.1. All soils for use in the restoration of the facility shall be stored to preserve the soil structure for future use.

Reason: To provide for the restoration of the facility

CONDITION 5 FACILITY OPERATIONS

5.1 Waste Acceptance and Characterisation Procedures

- 5.1.1 Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement written procedures for (i) the acceptance and handling of waste for disposal at the active tip (ii) the acceptance and handling of agreed wastes at the Civic Waste Facility, (iii) construction and demolition waste at the Construction and demolition waste recovery area (iv) metal waste and white goods in the Metal Recovery Area and (v) degassing of CFC's from refrigerators accepted at the Metal Recovery Area.
- 5.1.2 All waste shall be checked at the working face. Any wastes not suitable for acceptance shall be removed for recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area only. No waste shall be stored in the Waste Quarantine Area for more than three months.

5.2 Immediate Cover

- 5.2.1 Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.
- 5.2.2 The active landfill area(s) and the areas/pits used for the disposal of animal wastes operated at the facility shall be covered with a minimum of 500mm of suitable inert cover material within one month of the date of grant of this licence.
- 5.2.3 Within three months of the date of grant of this licence, an intermediate cover, to a minimum depth of 500mm of suitable inert material shall be placed across the whole landfill so that no waste, other than waste suitable for specified engineering works is exposed.

5.3 Landscaping

- 5.3.1 A detailed proposal for landscape planting at the facility shall be submitted to the Agency for agreement within six months of the date of grant of this licence. These proposals shall incorporate mixtures of appropriate species in keeping with the existing native vegetation in the area. The proposals shall be developed in

consultation with Dúchas and shall incorporate appropriate screening of the facility from the surrounding road network and private property.

- 5.3.2 The licensee shall provide a new screening hedgerow along the southern boundary of the facility. The construction and planting of this hedgerow shall commence within six months of the date of grant of this licence. The licensee shall consult Dúchas on the construction and planting of this hedgerow.

5.4 Operational Controls

- 5.4.1 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.4.2 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over with the exception of works associated with the construction and installation of the leachate and landfill gas management systems and associated monitoring infrastructure or in the event of the occurrence of a fire within the waste unless otherwise agreed in advance with the Agency.
- 5.4.3 Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials.
- 5.4.4 All areas of the landfill shall be permanently capped by 31 December 2005.
- 5.4.5 Scavenging shall not be permitted at the facility.
- 5.4.6 Gates shall be locked shut when the facility is unsupervised.
- 5.4.7 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.4.8 Fuels shall only be stored at appropriately bunded locations on the facility.
- 5.4.9 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.4.10 No smoking shall be allowed on the facility (other than in site office as shown on Drawing No. DUN –EIS-01 Rev.A. dated May 2000).

5.5 Waste Handling

5.5.1. Inert Waste

5.5.1.1. Inert waste accepted at the facility for use as intermediate cover in site development works, capping and restoration works shall comply with the standards set out in Schedule F: *Criteria for the Acceptance of Inert Waste* of this licence. Analysis of such waste shall be in accordance with the requirements of that Schedule. The licensee shall ensure that inert waste accepted at the facility is subject to treatment where technically feasible.

5.6 Off-site Disposal and Recovery

- 5.6.1 Waste accepted at the Civic Waste Facility, the materials recovery area and the Construction and Demolition Waste Recovery Area sent off-site for recovery or disposal shall only be conveyed by a waste contractor agreed by the Agency;
- 5.6.2 All waste transferred from the facility shall only be transferred to an appropriate facility agreed by the Agency;

5.6.3 All wastes removed off-site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.

5.7 Working Face

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

- a) Only one working face shall exist at the landfill at any one time for the deposit of waste other than the deposit of cover or restoration materials;
- b) The working face for the deposit of loose waste 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.
- c) All waste deposited at the working face(s) shall be compacted, using a steel wheeled compactor and covered with suitable material as soon as is practicable and at any rate prior to the end of the working day.

5.8 Civic Waste Facility

5.8.1 The Civic Waste Facility shall only be used by private vehicles. The facility shall not be used as a transfer station for disposal of waste by commercial waste disposal contractors or local authority waste collection vehicles.

5.8.2 All waste deposited in the Civic Waste Facility shall be deposited either:

- a) into a skip;
- b) into a receptacle for recovery; or
- c) in the case where inspection is required, into the designated Waste Inspection/Quarantine Area.

5.8.3 The licensee shall assign and clearly label each container at the Civic Waste Facility to indicate their contents.

5.9 Construction and Demolition Waste Recovery Area

5.9.1. Construction and Demolition waste only shall be accepted at this area. Wastes which are capable of being recovered shall be separated and shall be stored temporarily in this area prior to being subjected to other recovery activities (i.e for use as intermediate cover, in site development works and site restoration works) at the facility or transport off the facility.

5.9.2. All stockpiles of construction and demolition waste shall be maintained so as to minimise dust generation.

5.10 Metal recovery Area/Scrap Metal Compound

5.10.1. Apart from beverage cans (to be stored in the appropriate containers in the civic waste facility) waste metals including white goods shall only be stored within the metal recovery area following its construction. Prior to the construction of the metal recovery area, white goods and other metals, other than beverage cans, shall only be stored in a clearly defined area. White goods shall be clearly segregated from other metal wastes.

5.10.2. Abandoned cars shall not be accepted at the facility from the date of grant of the licence. Within six months of the date of grant of the licence, the licensee shall ensure

that all abandoned vehicles stored at the facility are removed for recovery at an appropriate facility.

5.11 Leachate Management

- 5.11.1. The frequency of leachate removal from the leachate lagoon shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon at all times.
- 5.11.2. Leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers to a waste water treatment plant agreed in advance with the Agency.
- 5.11.3. Recirculation of leachate or other contaminated water shall not be undertaken at the facility.

5.12 Maintenance

- 5.12.1. All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the licensee.
 - 5.12.2. All lagoon structures on the facility shall be inspected and certified fit for purpose every three years by an independent and appropriately qualified chartered engineer.
 - 5.12.3. The licensee shall maintain and clearly label and name all sampling and monitoring locations.
 - 5.12.4. The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face or to a skip.
- 5.13 The licensee shall, from a timescale to be agreed with the Agency implement a Conditioning Plan for the facility as required by Council Directive 1999/31/EC on the landfill of waste and agreed in advance by the Agency.

Reason: *To provide for appropriate operation of the facility to ensure protection of the environment.*

CONDITION 6 EMISSIONS

- 6.1. No specified emission from the facility shall exceed the emission limit values set out in Schedule C: *Emission Limits* of this licence. There shall be no other emissions of environmental significance.
- 6.2. The licensee shall ensure that all activities undertaken at the facility shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 6.3. Landfill Gas
 - 6.3.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:

- a) Methane, greater than or equal to 1.0% v/v; and
- b) Carbon dioxide, greater than or equal to 1.5% v/v.

6.3.2. The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-

a) in the case of landfill gas flare:

Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and

b) in the case of landfill gas combustion plant:

Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.

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

6.3.3.1. Continuous monitoring

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

6.3.2.2. Non-Continuous Monitoring

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

6.4. Emissions to Surface Water

6.4.1. No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.

6.5. Disposal of Leachate

6.5.1. No leachate shall be discharged to the Colligan River.

6.5.2. All leachate or contaminated water tankered from the facility shall be transported for treatment to a Waste Water Treatment Plant agreed in advance with the Agency.

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

CONDITION 7 NUISANCE CONTROL

7.1 The licensee shall ensure that vermin, birds, flies, mud, dust, litter and odours do not give rise to nuisance at the facility or in the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.

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

7.3 Litter Control

7.3.1 Litter fencing shall be installed and maintained around the perimeter of the active tipping area prior to the disposal of any waste in any part of the landfill.

7.3.2 All litter control infrastructure shall be inspected on a daily basis. The Licensee shall remedy any defect in the litter netting as follows:-

- a) A temporary repair shall be made by the end of the working date; and
- b) A repair to the standard of the original netting shall be undertaken within three working days.

7.3.3 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licences, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working date after such waste is discovered.

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

7.3.5 Within one month of the date of grant of this licence the licensee shall carry out a thorough clean up of any litter and waste accumulated around the facility and its immediate surrounds. This clean up shall include collecting and properly disposing of (a) any wind blown litter accumulated in the adjacent fields, hedgerows, scrub, trees, other vegetation, and ditches, subject to the agreement of the landowners, (b) litter accumulated around the perimeter of the facility, (c) any litter accumulated along Colligan River/Estuary in the immediate vicinity of the facility and (d) any litter accumulated along the local road network in the immediate vicinity of the facility. Confirmation that this post closure clean up has been carried out shall be submitted to the Agency within two months of the date of grant of this licence.

7.4 Dust Control

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

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

7.6 Prior to exiting the facility, all waste vehicles shall use the wheelwash following its installation. Prior to the installation of the wheelwash appropriate facilities shall be provided to ensure the wheels and undercarriage of all vehicles are appropriately washed prior to exiting the facility.

7.7 Bird Control

7.7.1 Birds shall be prevented from gathering on and feeding at the facility by the implementation of a site specific Bird Control Programme. This programme shall

incorporate the use of birds of prey, (subject to consultation with Dúchas), and other bird scaring techniques. The birds of prey and/or other techniques shall be in place on the facility from the date of grant of the licence and their presence shall be maintained every day, from before dawn to after dark, until the disposal of municipal waste ceases and all the waste is capped to the written satisfaction of the Agency. The licensee shall ensure that Bird Control Programme does not impact on the use of the Dungarvan Harbour Special Protection Area and adjoining estuarine mudflats in the vicinity of the facility by the natural population of estuarine birds. The use of gas operated bird scaring devices is prohibited at the facility.

Reason: *To provide for the control of nuisances*

CONDITION 8 MONITORING

- 8.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in Schedule D: *Monitoring* of this licence and as specified in this licence. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of this licence.
- 8.2. The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.
- 8.3. Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.
- 8.4. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 8.5. Landfill Gas
 - 8.5.1. All landfill gas monitoring equipment, other than permanent monitoring systems within buildings, shall be certified as being intrinsically safe.
- 8.6. Groundwater Monitoring
 - 8.6.1. Subject to the agreement of the well owners, all private wells within 500m of the facility shall be included in the monitoring programme set out in Schedule D: *Monitoring* of this licence.
- 8.7. Leachate Monitoring
 - 8.7.1. Leachate levels within the filled waste shall be monitored at the locations as shown on Drawing No. DUN EIS-002, dated March 2000 of the application and the additional monitoring point required by Condition 3.22.3 of this licence.
- 8.8. Surface Water Monitoring
 - 8.8.1. Within two months from the date of grant of this licence, the licensee shall initiate a monitoring programme for the surface water discharged from the facility (and the flow in the Colligan River). The programme shall, at minimum, fulfil the requirements of Schedule D.5.1: Water and Leachate – Parameters/Frequency.
- 8.9. Meteorological Monitoring

8.9.1. The licensee shall make arrangements for representative meteorological data to be collated for the facility to fulfil the requirements of Schedule D.6: Meteorological Monitoring.

8.10. Topographical Survey

8.10.1. A topographical survey shall be carried out within three months of the date of grant of this licence. The survey shall include a measurement of the remaining available void space for the acceptance of inert material to facilitate the restoration of the facility in accordance with the Restoration and Aftercare Plan required by Condition 4.1. This survey shall be repeated six monthly thereafter until the final restoration of the facility has been completed to the satisfaction of the Agency. The survey shall be in accordance with any written instructions issued by the Agency.

8.11. Biological Assessment

8.11.1. An ecological assessment of Dungarvan Harbour Special Protection Area and the Dungarvan Harbour proposed NHA and the Colligan River and associated habitats in the vicinity of, including upstream and down stream of the facility, shall be undertaken within twelve months of the date of grant of this licence and annually thereafter unless otherwise instructed by the Agency. This assessment shall include the use of appropriate biological methods such as the EPA Q-rating system for the assessment of the Colligan River and its tributaries. The ecological survey shall include as a minimum the monitoring and an assessment of the following

- i) habitat quality including an assessment of the usage of the intertidal areas by estuarine birds;
- ii) an assessment of the toxicity of leachate using appropriate organisms which reflect the habitats estuarine/ riverine habitats in the vicinity of the facility
- iii) estuarine/ river water quality and chemical analysis of estuarine sediments;
- iv) flora including macro algae;
- v) macroinvertebrate fauna (including bivalves) of sediments and shoreline(hard substrate);
- vi) heavy metal contamination of macroinvertebrates; and,
- vii) salmonids.

The monitoring programme shall be produced in consultation with Dúchas. The methodology used in the surveys shall be described in the ecological report submitted to the Agency. The monitoring programme for macroinvertebrates, macroalgae, water quality and sediments should include as a minimum the sampling locations used in the investigation of the Colligan River undertaken in March 1999 as part of the application shown on Drawing No. DUN-MON –001, dated March 1999 - *Sampling Locations on the Colligan River for invertebrates and indicator organisms.*

8.12. Stability Assessment

8.12.1. Within three months of the date of grant of this licence, and as directed by the Agency thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility.

8.13. Nuisance Monitoring

- 8.13.1. The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.

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

CONDITION 9 CONTINGENCY ARRANGEMENTS

- 9.1. In the event of an incident the licensee shall immediately:
- a) identify the date, time and place of the incident;
 - b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
 - c) isolate the source of any such emission;
 - d) evaluate the environmental pollution, if any, caused by the incident;
 - e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
 - f) provide a proposal to the Agency for its agreement within one month of the incident occurring to:
 - i) identify and put in place measures to avoid reoccurrence of the incident; and
 - ii) identify and put in place any other appropriate remedial action.
- 9.2. The licensee shall, within three 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. This shall include a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities. The Fire Authority shall be consulted by the licensee during this assessment.
- 9.3. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.
- 9.4. Emergencies
- 9.4.1. All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.
 - 9.4.2. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.
 - 9.4.3. In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an emergency and the licensee shall provide an alternative supply of water to those affected.

- 9.4.4. 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 emergency.

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

CONDITION 10 RECORDS

- 10.1 The licensee shall keep the following documents at the facility office.
- a) the current waste licence relating to the facility;
 - b) the current EMS for the facility;
 - c) the previous year's AER for the facility;
 - d) all written procedures produced by the licensee which relate to the licensed activities.
- 10.2 The licensee shall maintain a written record for each load of waste arriving at the facility, excluding those arriving at the Civic Waste Facility. The licensee shall record the following:
- a) the date;
 - b) the name of the carrier;
 - c) the vehicle registration number;
 - d) the name of the producer(s)/collector(s) of the waste as appropriate;
 - e) the source of the waste;
 - f) a description of the waste including the associated EWC codes;
 - g) the quantity of the waste, recorded in tonnes
 - h) the name of the person checking the load; and,
 - i) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.
- 10.3 **Written Records**
- The following written records shall be maintained by the licensee:
- a) the types and quantities of waste recovered and disposed of at the facility each year. These records shall include the relevant EWC Codes;
 - b) all training undertaken by facility staff;
 - c) results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
 - d) details of all nuisance inspections; and
 - e) the names and qualifications of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring.
- 10.4 The licensee shall maintain a written record of all complaints relating to the operation of the activity. Each such record shall give details of the following:
- a) date and time of the complaint;

- b) the name of the complainant;
 - c) details of the nature of the complaint;
 - d) actions taken on foot of the complaint and the results of such actions; and,
 - e) the response made to each complainant.
- 10.5 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:
- a) the name of the carrier;
 - b) the date and time of removal of leachate from the facility;
 - c) the volume of leachate, in cubic metres, removed from the facility on each occasion;
 - d) the name and address of the Waste Water Treatment Plant to which the leachate was transported;
 - e) any incidents or spillages of leachate during its removal or transportation.
- 10.6 A written record shall be kept for each load of waste departing from the Civic Waste Facility. The following shall be recorded:
- a) the name of the carrier;
 - b) the vehicle registration number;
 - c) the destination of the waste (facility name and waste licence/permit number as appropriate);
 - d) a description of the waste (if recovered or rejected waste, the specific nature of the waste);
 - e) the quantity of waste, recorded in tonnes;
 - f) the name of the person checking the load; and,
 - g) the time and date of departure.
- 10.7 A written record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. These records shall include as a minimum the following:
- a) the date and time during which spraying of insecticide is carried out;
 - b) contractor details;
 - c) contractor logs and site inspection reports;
 - d) details of the rodenticide(s) and insecticide(s) used;
 - e) operator training details;
 - f) details of any infestations;
 - g) mode, frequency, location and quantity of application; and,
 - h) measures to contain sprays within the facility boundary.
- 10.8 A written record shall be kept at the facility of the Bird Control Programme implemented at the facility. This shall include a record of the daily bird control activities, the contractor details and the species and the approximate numbers of birds observed within the facility.

Reason: To provide for the keeping of proper records of the operation of the facility

CONDITION 11 REPORTS AND NOTIFICATIONS

11.1 Unless otherwise agreed by the Agency, all reports and notifications submitted to the Agency shall:

- a) be sent to the Agency's headquarters;
- b) comprise one original and three copies unless additional copies are required;
- c) be formatted in accordance with any written instruction or guidance issued by the Agency;
- d) include whatever information as is specified in writing by the Agency;
- e) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
- f) be submitted in accordance to the relevant reporting frequencies specified by this licence, such as in Schedule E: *Recording and Reporting to the Agency* of this licence;
- g) be accompanied by a written interpretation setting out their significance in the case of all monitoring data; and
- h) be transferred electronically to the Agency's computer system if required by the Agency.

11.2 In the event of an incident occurring on the facility, the licensee shall:

- a) notify the Agency as soon as practicable and in any case not later than 10.00 am the following working day after the occurrence of any incident;
- b) submit a written record of the incident, including all aspects described in Condition 9.1(a-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident; and
- c) in the event of any incident which relates to discharges to surface/sewer water, notify the Southern 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.
- d) Should any further actions be taken as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.

11.3 Waste Recovery Reports

Within six months of the date of grant of this licence, a report examining waste recovery options shall be submitted to the Agency for its agreement. This report shall address methods to contribute to the achievement of the recovery targets stated in national and European Union waste policies and shall include the following:

- a) the recovery of Construction and Demolition Waste;
- b) the recovery of metal waste and white goods including written procedures for the de-gassing of CFC's from refrigerators;
- c) the recovery of commercial waste, including cardboard;
- d) the recovery of inert waste to be used for cover/restoration material at the facility;

11.4 Reports relating to Facility Operations

11.4.1. Leachate Handling Procedures

11.4.1.1 The licensee shall submit to the Agency for its agreement prior to the use of the leachate storage lagoon Leachate Handling Procedures for the handling of leachate on the facility and during removal from the lagoon and subsequent transport to the Waste Water Treatment Plant.

11.5 Vermin and Flies

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

11.6 Monitoring Locations

11.6.1. Within six months of the date of grant of this licence, the licensee shall submit to the Agency an appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing(s) shall include the reference code of each monitoring point.

11.7 Annual Environmental Report

11.7.1 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).

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

Reason: *To provide for proper reports to and notifications to the Agency.*

CONDITION 12 CHARGES AND FINANCIAL PROVISIONS

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €16,213 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2003 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2002, the licensee shall pay a pro rata amount from the date of this licence to 31st December, 2002. This amount shall be paid to the Agency within one month of the date of grant of this licence.

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

12.2 Financial Provision for Closure, Restoration and Aftercare

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

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

Where:

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

- 12.3 The licensee shall ensure the costs in the setting up, operation of, provision of financial security and closure and aftercare for a period of at least 30 years shall be covered by the price to be charged for the disposal of waste at the facility.

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

SCHEDULE A : Waste Acceptance

A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities

WASTE TYPE	MAXIMUM (TONNES)
Municipal Waste	15,347
Total Quantity of Inert Waste to be used for the purposes specified in Condition 1.4.	Note 1
Waste for recovery and recycling at Civic Waste Facility ^{Note 2} .	1,000 per annum ^{Note 3}
Metal waste including white goods for acceptance at the Metal Recovery Area	1,000 per annum ^{Note 3}
Construction and Demolition Waste for acceptance at the Construction and Demolition Waste Recovery Area	3,000 per annum

Note 1: To be agreed with the Agency under Condition 4.1. of the licence.

Note 2: Cardboard, beverage cans, bottles, paper, waste oils, batteries, fluorescent tubes and other household hazardous waste as agreed with the Agency for storage in appropriate receptacles at the civic waste facility.

Note 3: Unless otherwise agreed in advance with the Agency under Condition 1.6 of the licence.

SCHEDULE B : Specified Engineering Works

Specified Engineering Works
Final capping.
Construction of Civic Waste Facility Infrastructure
Construction of Waste Inspection and Waste Quarantine Area Infrastructure
Construction of Construction and Demolition Waste Recovery Area
Construction of Metal Recovery Area
Installation of Landfill Gas Management Infrastructure
Installation of Leachate Management Infrastructure
Installation of Groundwater Control Infrastructure
Installation of Surface Water Management Infrastructure
Restoration and Aftercare Works
Site security fencing.
Construction of end of life vehicle area.
Any other works notified in writing by the Agency.

SCHEDULE C : Emission Limits

C.1 Noise Emissions: (Measured at the monitoring points indicated in *Table D.1.1*).

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

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

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

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

Level (mg/m ² /day) ^{Note 1}
350

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

C.4 Surface Water Discharge Limits: Measured at the monitoring point(s) of discharge from the proposed surface water retention pond.

Parameter	Emission Limit Value
Suspended Solids	25mg/l

C.5 Emission Limits Values for Landfill Gas Flare and Combustion Plant^{Note 1}

Emission Point reference no's: (to be agreed with the Agency)

Location: Landfill Gas flarestack(s) and Utilisation Plant

Volume to be emitted: Combustion Plant :3000m³/hr. Each Flare :to be agreed

Minimum discharge height: Combustion Plant 5m

Parameter	Emission Limit Value ^{Note 2}
Nitrogen oxides as (NO ₂)	500 mg/m ³ (150mg/m ³) ^{Note 3}
CO	650 mg/m ³ (50mg/m ³) ^{Note 3}
Particulates	130 mg/m ³
TA Luft Organics Class I ^(Note 4)	20 mg/m ³ (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II ^(Note 4)	100 mg/m ³ (at mass flows > 2 kg/hr)
TA Luft Organics Class III ^(Note 4)	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: Subject to the outcome of the assessment required by Condition 3.15.1.

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

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

Note 4: 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 D : Monitoring

Monitoring to be carried out as specified below. The monitoring frequency and locations will be subject to review following the completion of the restoration of the facility in accordance with the conditions of the licence

D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1.

Table D.1.1 Monitoring Locations

LANDFILL GAS	DUST	NOISE	SURFACE WATER	GROUND WATER	LEACHATE
STATIONS Note 1	STATIONS Note 1	STATIONS Note 1	STATIONS Note 3	STATIONS Note 3	STATIONS Note 3
L1-L5 inclusive	B1, B2, ^{Note 2} B3 ,B4, D1	B1,B2, ^{Note 2} B3, B4 , D1	SW1, SW2	GW1, GW2, RC1,RC3, RC4,RC6	L1,L2,L3,L5 ^{Note 5}
RC1, RC2, RC3, RC4, RC6, GW1, GW2		NSL1	EPA Station 280, EPA Station 300	Monitoring Locations required by Conditions 3.22.2 and 8.6.1	Monitoring location required by Condition 3.22.3.
Perimeter monitoring locations required by Condition 3.22.1(i)			Surface Water Retention Pond Outlet from Surface water Retention Pond		Leachate Storage Lagoon required by Condition 3.13.2
Site office and other enclosed structures required by Condition 3.22.1(ii)			Invertebrate Sampling: S1,S2,S4,S5		Effectiveness of leachate collection drain as required by Condition 3.13.1
			Indicator Organisms: M1,M2,M3 ^{Note 4}		

Note 1:Locations shown on Drawing No.DUN-EIS-003 –Monitoring Programme for Gas, Noise and Dust dated March 1999.

Note 2:B2 to be relocated to a point in line with B2 (on Drawing No.DUN-EIS-003 –Monitoring Programme for Gas, Noise and Dust dated March 1999) and within the facility boundary.

Note 3:Locations as shown on Drawing No. DUN-EIS-002 Monitoring programme for Groundwater, Surface Water and Leachate, dated March 1999.

Note 4:Invertebrate Sampling Sites and Indicator organisms as shown on Drawing No. Dun-MON-001-Sampling Locations on the River Colligan for invertebrates and indicator organisms as required by Condition 8.11.1.

Note 5:Frequency to be reviewed following submission of results from two sampling suites.

D.2 Landfill Gas

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

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

Note1: All monitoring equipment used should be intrinsically safe.

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

D.3 Dust

Table D.3.1 Dust Monitoring Frequency and Technique

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

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

Note 2: Twice during the period May to September.

D.4 Noise

Table D.4.1 Noise Monitoring Frequency and Technique

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

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

D.5 Surface Water, Groundwater and Leachate

Table D.5.1 Water and Leachate - Parameters /Frequency

Parameter ^{Note 1}	SURFACE WATER Monitoring Frequency	GROUNDWATER Monitoring Frequency	LEACHATE Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Quarterly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Monthly
Ammoniacal Nitrogen	Quarterly ^{Note 5}	Quarterly	Quarterly
BOD	Quarterly	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly ^{Note 5}	Quarterly	Quarterly
pH	Quarterly ^{Note 5}	Quarterly	Quarterly
Total Suspended Solids	Quarterly ^{Note 5}	Not Applicable	Not Applicable
Temperature	Quarterly ^{Note 5}	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	Quarterly	Annually
Lead	Annually	Annually	Annually
List I/II organic substances ^{Note 3}	Note 7	Annually	Note 7
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	Not Applicable
Total Phosphorus / orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly	Quarterly
Total Organic Carbon	Quarterly ^{Note 5}	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
Biological Assessment	Annually ^{Note 6}	Not Applicable	Not Applicable

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

Note 2: Where there is evident gross contamination 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:** These parameters shall be monitored at the inlet and outlet from the surface water retention pond following its construction.
- Note 6:** Appropriate biological methods (such as EPA Q-Rating System to be used for the assessment of freshwater rivers and streams and other approved method for estuarine waters where appropriate).
- Note 7:** Once off for List I/II organic substances for two surface water samples and two leachate samples at locations to be agreed with the Agency.

D.6 Meteorological Monitoring

Table D.6.1 Meteorological Monitoring:

Data to be obtained from a suitable location as required by Condition 8.9.

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

D.7 Landfill Gas Flare and Combustion Plant

Monitoring to be obtained at locations to be agreed with the Agency prior to the commissioning of the landfill Gas Flare and Combustion Plant.

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 E : Recording and Reporting to the Agency

Report	Reporting Frequency ^{Note1}	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	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.
Topographical Survey	Three/Six monthly Note 2	Ten days after the period being reported on.
Slope Stability	Three monthly Note 2	Ten days after the period being reported on
Ecological monitoring	Annually ^{Note3}	One month after end of the year being reported on.
Any other monitoring	As they occur	Within ten days of obtaining results.

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

Note 2: Initially three months following the date of grant of the licence and as directed by the Agency thereafter.

Note 3: The frequency of the Ecological monitoring Programme is to be reviewed following the submission of two ecological reports. Subject to the results of the ecological assessment the frequency may be changed to biennial.

SCHEDULE F : Criteria for the Acceptance of Inert Waste

F.1 Acceptable Waste

Recovery

Only the inert wastes in Table F.1.1 are acceptable for use in restoration and for recovery at the facility, unless otherwise agreed with the Agency. In addition the waste in Table F.2.1 below must satisfy the criteria in F.2 Acceptance Criteria and F.3 Limit values for pollutant content for inert waste landfills, of this licence.

Table F.1.1 Waste for Recovery

WASTE	
Topsoil	Solid Road Planings, Solid Tarmacadam, Solid Asphalt
Subsoil	Brickwork
Stone, Rock and Slate	Natural Sand
Clay	Concrete
Pottery and China	Timber
Metals	

F.2 Acceptance Criteria

The general characterisation and testing must be based on the following three level hierarchy:

Level 1: Basic Characterisation

This constitutes a through determination, according to standardised analysis and behaviour testing methods, of the short and long-term leaching behaviour and/or characteristic properties of the waste.

Level 2: Compliance Testing

This constitutes periodical testing by simpler standard analysis and behaviour-testing methods to determine whether a waste complies with condition and /or specific reference criteria. The tests focus on key variables and behaviour identified by basic characterisation.

Level 3: On-site verification

This constitutes rapid check methods to confirm that a waste is the same as that which has been subjected to compliance testing and that which is described in the accompanying documents. It may merely consist of a visual inspection of a load of waste before and after unloading at the landfill site.

All waste loads must provide the following information (if available) :

Waste owner	Amount of waste
Source and origin of waste	Existing data on the waste
Description of the waste	Physical form
Waste Type and EWC code	Colour
Type of process producing the waste	Odour

All wastes accepted for disposal at the landfill shall undergo the Level 3: On-site verification at a minimum.

In addition to the above a representative load from every excavation/demolition/waste removal works is subjected to a comprehensive assessment which must satisfy Level 1 characterisation.

The comprehensive assessment must at a minimum include the following:

1. A chemical analysis of a representative sample. At least one sample per 1,500 tonnes or portion thereof must be taken for chemical analysis for each excavation or demolition works. However, if the comprehensive assessment is undertaken prior to the commencement of excavation or clearance

activity, the licensee may reduce the number of samples for chemical analysis to one for each 7,5000 t or portion thereof. The sampling location must be identified on a sampling grid and enclosed in the comprehensive assessment.

2. An evaluation of the acceptability of the disposal of the waste at the landfill including observance of limits for total pollutants contents in Schedule F.3 below.
3. A statement of any pre-treatment requirement (if any).
4. Evidence that the waste displays no hazardous properties upon disposal.

If as a result of examinations undertaken in the course of excavation or clearance activity, the suspicion of contamination should arise, the type and concentration of the contamination must be determined, and its extent established through additional sampling.

Wastes of unknown origin or with insufficient waste description must be subjected to a chemical analysis.

In addition to the assessment above representative samples upon delivery of wastes must be taken for compliance testing purposes (Level 2). The tests shall focus on key variables and behaviour identified by the chemical analysis.

A representative sample shall be taken from one in every 100 loads of waste accepted at the facility. This sample shall be subjected to Level 2 testing. Part of this sample shall be retained at the facility for three months and be available for inspection/analysis by the Agency.

F.3 Limit values for pollutant content for inert waste landfills.

The following limit values relate to the average amount of constituent substances in the waste. The mean value of all individual measuring values from one bulk sample must not exceed the limit value concerned.

Table F.3.1 Limit Values

Parameter	Limit Value (mg/kg dry mass, not including pH value and Electrical Conductivity)	
	Total Pollutant Contents	Eluate
pH		6 –13
Electrical conductivity		300
Dry residue		25,000
Arsenic (as As)	200	0.75
Aluminium (as Al)		20.0
Barium (as Ba)		20.0
Lead (as Pb)	500	2.0
Boron (as b)		30.0
Cadmium (as Cd)	10.0	0.5
Chromium, total (as Cr)	500	2.0
Chromium, hexavalent (as Cr)		0.5

Cobalt (as Co)	100	2.0
Copper (as Cu)	500	10.0
Nickel (as Ni)	500	2.0
Mercury (as Hg)	3.0	0.05
Silver (as Ag)		1.0
Zinc (as Zn)	1500	20.0
Tin (as Sn)		10.0
Ammonium (as N)		40.0
Chloride (as Cl)		5000.0
Cyanide, easily liberatable (as CN)		1.0
Fluoride (as F)		50.0
Nitrate (as N)		500.0
Nitrite (as N)		10.0
Phosphate (as P)		50.0
Sulphate (as SO₄)		5000.0
TOC (as C)	30,000 ^{Note 1}	500.0
Total hydrocarbons	100	50.0
EOX		3.0
Total PAH^{Note 2}	2.0	

Note 1: The TOC limit value is complied with as long as the loss on ignition does not exceed 5% per weight.

Note 2: For determining the total of PAH, the following 6 compounds must be added to a sum:

flouranthene, benzoic(a)pyrene, benzoic(b)flouranthene, benzoic(k)flouranthene, benzoic(g,h,I)perylene, indenoic(1,2,3,-c,d)pyrene.

SCHEDULE G : Content of the Annual Environmental Report

Annual Environmental Report Content ^{NOTE 1}

Reporting Period.

Waste activities carried out at the facility including the landfill area(s), the construction and demolition waste recovery area, the civic waste facility and the metal recovery area.

Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year.

Methods of deposition of inert waste for restoration.

Summary report on emissions.

Summary of results and interpretation of environmental monitoring.

Resource and energy consumption summary.

Proposed sequence for development and restoration of the facility and timescale of such development and restoration.

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 progress in restoration of the facility.

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

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

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Annual water balance calculation and interpretation.

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

Schedule of Environmental Objectives and Targets for the forthcoming year.

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

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Review of Nuisance Controls.

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

Report on training of staff.

Any other items specified by the Agency.

Sealed by the seal of the Agency on this the 29th day of November, 2002

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

Iain Maclean, Director/Authorised Person