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Ireland

WASTE LICENCE  
RECOMMENDED DECISION  
LANDFILL FOR NON-HAZARDOUS WASTE

<b>Licence Register No:</b>	W0078-03
<b>Licensee:</b>	North Tipperary County Council
<b>Location of Facility:</b>	Ballaghveny Landfill, Ballymac County Tipperary



## ***INTRODUCTION***

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

This licence is for the continued operation of a non-hazardous waste landfill, a civic amenity facility, a composting facility and a construction and demolition recovery area located at Ballaghveny Landfill, Ballmackey, County Tipperary. The waste intake is limited to 47,000 tonnes per annum comprising of municipal waste, commercial waste, construction and demolition waste and treated sludge.

In addition to the licensed landfill, the licence provides for the operation of a civic waste facility which will allow for acceptance of recyclables such as glass, paper, aluminium and steel cans, textiles, cardboard etc. The licence also allows for the operation of a construction and demolition recovery area consisting of an incoming waste stockpiling area, residual waste storage area and a waste processing area where the waste will be processed by use of a mobile crusher and screens. The composting facility is allowed to accept 2,000 tonnes per annum of green waste. The green waste will be shredded and composted in an open windrows system.

The licensee must manage and operate the facility to ensure that the activities do not cause environmental pollution. The licensee is required to carry out regular environmental monitoring and submit all monitoring results, and a wide range of reports on the operation and management of the facility to the Agency.

The licence sets out in detail the conditions under which North Tipperary County Council will operate and manage this facility.

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## *Glossary of Terms*

All terms in this licence should be interpreted in accordance with the definitions in the Environmental Protection Agency Acts 1992 and 2003 and the Waste Management Acts 1996 to 2008, unless otherwise defined in this section.

<b>Adequate lighting</b>	20 lux measured at ground level.
<b>Aerosol</b>	A suspension of solid or liquid particles in a gaseous medium.
<b>AER</b>	Annual Environmental Report.
<b>Agreement</b>	Agreement in writing.
<b>Annually</b>	At approximately twelve monthly intervals.
<b>Attachment</b>	Any reference to Attachments in this licence refers to attachments submitted as part of this licence application.
<b>Application</b>	The application by the licensee for this licence.
<b>Appropriate facility</b>	A waste management facility, duly authorised under relevant law and technically suitable.
<b>BAT</b>	Best Available Techniques.
<b>Bi-annually</b>	All or part of a period of six consecutive months.
<b>Biennially</b>	Once every two years.
<b>Bioaerosol</b>	An aerosol of biological particles.
<b>Biodegradable waste</b>	Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste and paper and cardboard.
<b>Biodegradable municipal waste (BMW)</b>	The biodegradable component of municipal waste, not including bio-stabilised residual waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles.
<b>Bio-stabilised residual waste</b>	Residual biodegradable municipal waste that has been treated to achieve an EPA-approved biodegradability stability standard (as defined in this licence) prior to landfilling or alternative use agreed.
<b>Characterisation of waste</b>	The sampling and analysis of waste to determine, amongst other things, its nature and composition, including the proportions of biodegradable, recyclable and other materials in the waste.
<b>Classification of waste</b>	The classification of waste as inert, non-hazardous or hazardous for the purpose of article 4 of Council Directive (1999/31/EC) on the landfill of waste.
<b>Coding of waste</b>	The allocation of a European Waste Catalogue/Hazardous Waste List code and a concise/standardised description of the waste, including information on the source of the waste, e.g. municipal, industrial, construction and demolition etc.
<b>BOD</b>	5 day Biochemical Oxygen Demand.

<b>CEN</b>	Comité Européen De Normalisation – European Committee for Standardisation.
<b>COD</b>	Chemical Oxygen Demand.
<b>Compost</b>	Stable, sanitised and humus like material rich in organic matter and free from offensive odours resulting from composting, of separately collected biowaste which complies with the environmental quality classes outlined in <i>Schedule F: Standards for Compost Quality</i> , of this licence.
<b>Construction and Demolition Waste</b>	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the EWC or as otherwise may be agreed.
<b>Containment boom</b>	A boom which can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
<b>Daily</b>	During all days of plant operation, and in the case of emissions, when emissions are taking place; with at least one measurement on any one day.
<b>Day</b>	Any 24 hour period.
<b>Daytime</b>	0800 hrs to 2200 hrs.
<b>dB(A)</b>	Decibels (A weighted).
<b>DO</b>	Dissolved Oxygen.
<b>Documentation</b>	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
<b>Drawing</b>	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
<b>EMP</b>	Environmental Management Programme.
<b>Emission Limits</b>	Those limits, including concentration limits and deposition rates established in <i>Schedule B: Emission Limits</i> , of this licence.
<b>Environmental Damage</b>	Has the meaning given it in Directive 2004/35/EC.
<b>EPA</b>	Environmental Protection Agency.
<b>European Waste Catalogue (EWC)</b>	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.
<b>Facility</b>	Any site or premises used for the purposes of the recovery or disposal of waste.
<b>Fortnightly</b>	A minimum of 24 times per year, at approximately two week intervals.
<b>GC/MS</b>	Gas Chromatography/Mass Spectroscopy.
<b>Green waste</b>	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
<b>Heavy Metals</b>	This term is to be interpreted as set out in “Parameters of Water Quality, Interpretation and Standards” published by the Agency in 2001. ISBN 1-84095-015-3.

<b>HFO</b>	Heavy Fuel Oil.
<b>Hours of Operation</b>	The hours during which the facility is authorised to be operational.
<b>Hours of Waste Acceptance</b>	The hours during which the facility is authorised to accept waste.
<b>ICP</b>	Inductively Coupled Plasma Spectroscopy.
<b>Incident</b>	The following shall constitute an incident for the purposes of this licence: <ul style="list-style-type: none"><li>a) an emergency;</li><li>b) any emission which does not comply with the requirements of this licence;</li><li>c) any exceedence of the daily duty capacity of the waste handling equipment;</li><li>d) any trigger level specified in this licence which is attained or exceeded; and,</li><li>e) any indication that environmental pollution has, or may have, taken place.</li></ul>
<b>Industrial Waste</b>	As defined in Section 5(1) of the Waste Management Acts 1996 to 20058.
<b>Inert waste</b>	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.
<b>Installation</b>	A stationary technical unit or plant where the activity concerned referred to in the First Schedule of EPA Acts 1992 and 2003 is or will be carried on, and shall be deemed to include any directly associated activity, which has a technical connection with the activity and is carried out on the site of the activity.
<b>IPPC</b>	Integrated Pollution Prevention & Control.
<b>K</b>	Kelvin.
<b>kPa</b>	Kilo Pascals.
<b>Landfill Directive</b>	Council Directive 1999/31/EC.
<b>Landfill Footprint</b>	The area of the facility where waste is deposited.
<b>Leq</b>	Equivalent continuous sound level.
<b>Licensee</b>	North Tipperary County Council, Courthouse, Nenagh, County Tipperary.
<b>Liquid Waste</b>	Any waste in liquid form and containing less than 2% dry matter.
<b>List I</b>	As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.
<b>List II</b>	As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.
<b>Local Authority</b>	North Tipperary County Council.

<b>Maintain</b>	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to adequately perform its function.
<b>Mass Flow Limit</b>	An Emission Limit Value which is expressed as the maximum mass of a substance which can be emitted per unit time.
<b>Mass Flow Threshold</b>	A mass flow rate, above which, a concentration limit applies.
<b>Monthly</b>	A minimum of 12 times per year, at approximately monthly intervals.
<b>Municipal waste</b>	As defined in Section 5(1) of the Waste Management Acts 1996 to 20058.
<b>Municipal solid waste (MSW):</b>	Household waste as well as commercial and other waste which, because of its nature or composition, is similar to household waste. Excluding municipal sludges and effluents.
<b>Night-time</b>	2200 hrs to 0800 hrs.
<b>Noise Sensitive Location (NSL)</b>	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
<b>Oil Separator</b>	Device installed according to the International Standard I.S. EN 858-2:2003 (Separator systems for light liquids (e.g. oil and petrol) –Part 2: Selection of nominal size, installation, operation and maintenance).
<b>PER</b>	Pollution Emission Register.
<b>Quarterly</b>	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
<b>Regional Fisheries Board</b>	Shannon Regional Fisheries Board.
<b>Residual waste</b>	The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.
<b>Sanitary Authority</b>	North Tipperary County Council.
<b>Sanitary Effluent</b>	Waste water from facility toilet, washroom and canteen facilities.
<b>Sample(s)</b>	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
<b>Sensitive Receptor</b>	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of nuisance arising from emissions associated with the licensed facility.
<b>Sludge</b>	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment, with greater than 2% dry matter.
<b>SOP</b>	Standard Operating Procedure.
<b>Specified</b>	Those emissions listed in <i>Schedule B: Emission Limits</i> of this licence.

**Emissions**

<b>Stabilised Biowaste</b>	Waste resulting from the mechanical/biological treatment of unsorted waste or residual municipal waste including treated biowaste which does not comply with the environmental quality classes outlined in <i>Schedule F: Standards for Compost Quality</i> , of this licence.
<b>Standard Method</b>	A National, European or internationally recognised procedure (eg, I.S. EN, ISO, CEN, BS or equivalent), as an in-house documented procedure based on the above references, a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or, an alternative method as may be agreed by the Agency.
<b>Storm Water</b>	Rain water run-off from roof and non-process areas.
<b>The Agency</b>	Environmental Protection Agency.
<b>TOC</b>	Total Organic Carbon.
<b>Trade Effluent</b>	Trade Effluent has the meaning given in the water pollution Acts 1977 and 1990.
<b>Treatment/pre-treatment</b>	In relation to waste, any manual, thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.
<b>Trigger Level</b>	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
<b>Weekly</b>	During all weeks of plant operation, and in the case of emissions, when emissions are taking place; with at least one measurement in any one week.
<b>WWTP</b>	Waste Water Treatment Plant.
<b>Windrow</b>	An elongated pile of composting material.



## ***Decision & Reasons for the Decisions***

### ***Reasons for the Decision***

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2008.

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

### ***Part I Schedule of Activities Licensed***

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2008, the Environmental Protection Agency (the Agency) proposes, under Section 46(8) of the said Acts to grant this Waste Licence to North Tipperary County Council, Courthouse, Nenagh, County Tipperary to carry on the waste activity/activities listed below at Ballaghveny Landfill, Ballymackey, County Tipperary subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence. For the purposes of Article 48 of the Waste Management Licensing Regulations 2004 (SI 395) this facility is classed as a non-hazardous waste landfill.

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

<b>Class 1.</b>	<b>Deposit on, in or under land (including landfill).</b>
<b>Class 2.</b>	<b>Land treatment, including biodegradation of liquid or sludge discards in soils.</b>
<b>Class 4.</b>	<b>Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.</b>
<b>Class 5.</b>	<b>Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.</b>
<b>Class 11.</b>	<b>Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.</b>
<b>Class 12.</b>	<b>Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.</b>
<b>Class 13.</b>	<b>Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.</b>

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

<b>Class 2.</b>	<b>Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes).</b>
<b>Class 3.</b>	<b>Recycling or reclamation of metals and metal compounds.</b>
<b>Class 4.</b>	<b>Recycling or reclamation of other inorganic materials.</b>
<b>Class 10.</b>	<b>The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.</b>
<b>Class 11.</b>	<b>Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.</b>
<b>Class 13.</b>	<b>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.</b>

## ***Part II Conditions***

### **Condition 1. Scope**

- 1.1 Waste activities at this facility shall be restricted to those listed and described in Part I Activities Licensed, and shall be as set out in the licence application or as modified under Condition 1.6 of this licence and subject to the conditions of this licence.
- 1.2 Activities at this facility shall be limited as set out in *Schedule A: Limitations*, of this licence.
- 1.3 The facility shall be controlled, operated, and maintained and emissions shall take place as set out in this licence. All programmes required to be carried out under the terms of this licence, become part of this licence.
- 1.4 For the purposes of this licence, the facility authorised by this licence, is the area of land outlined in red on Drawing No. DG0155-01 Rev. F01 *Waste Licence Boundary* of the Article 14 reply received on 6/04/05. Any reference in this licence to “facility” shall mean the area thus outlined in red colour. The licensed activities shall be the carried on only within the area outlined.
- 1.5 Waste Acceptance Hours and Hours of Operation
- 1.5.1 Waste may be accepted at facility only between the hours of 08:30 to 17:00 Monday to Friday inclusive (Bank Holidays excluded) and 08:30 to 16:00 on Saturday.
- 1.5.2 The facility may be operated only during the hours of 08:00 to 18:00 Monday to Friday inclusive and 08:00 to 17:00 on Saturday.
- 1.5.3 Waste shall not be accepted at the facility on Sundays and Bank Holidays, other than with the written agreement of the Agency.
- 1.6 No alteration to, or reconstruction in respect of, the activity or any part thereof which would, or is likely to, result in
- (i) a material change or increase in:
- The nature or quantity of any emission,
  - The abatement/treatment or recovery systems,
  - The range of processes to be carried out,
  - The fuels, raw materials, intermediates, products or wastes generated, or
- (ii) any changes in:
- Site management infrastructure or control with adverse environmental significance,
- shall be carried out or commenced without prior notice to, and without the agreement of, the Agency.
- 1.7 This licence is for the purposes of waste licensing under the Waste Management Acts 1996 to 2008 only and nothing in this licence shall be construed as negating the licensee’s statutory obligations or requirements under any other enactments or regulations.
- 1.8 This licence is being granted in substitution for the waste licence granted to the licensee on 15<sup>th</sup> June 2006 and bearing Waste Licence Register No: W0078-02. The previous waste licence (Register No: W0078-02) is superseded by 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 or as otherwise required by the Agency.

2.1.2 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. In addition, the facility manager and his/her deputy shall successfully complete FAS waste management training programme or equivalent agreed by the Agency.

### 2.2 Environmental Management System (EMS)

2.2.1 The licensee shall operate and maintain an Environmental Management System (EMS) at the facility. The EMS shall be updated on an annual basis with amendments being notified to the Agency as part of the AER.

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

2.2.2.1 Management and Reporting Structure.

2.2.2.2 Schedule of Environmental Objectives and Targets.

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

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

2.2.2.3 Environmental Management Programme (EMP)

The licensee shall, not later than six months from the date of grant of this licence, submit to the Agency for agreement a proposal for the updating (where appropriate) of the EMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.2. Once agreed the EMP shall be established and maintained by the licensee. It shall include:

- (i) designation of responsibility for targets;
- (ii) the means by which they may be achieved;
- (iii) the time within which they may be achieved.

The EMP shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER) (Condition 11.9).

A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.2.2.4 Notwithstanding the provisions of Condition 2.2.2.3, the operator shall prepare, operate and maintain a Landfill Environmental Management Plan (LEMP) covering aspects not already included in the EMP. The LEMP shall be regularly reviewed (at least annually) in light of operational experiences at the facility, the stage of development of the facility (active, closure, aftercare), evolving legislative and BAT requirements, as well as any Agency instructions that may issue, with updates notified to the EPA as part of the AER.

2.2.2.5 Documentation

- (i) The licensee shall establish and maintain an environmental management documentation system which shall be to the satisfaction of the Agency.
- (ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

2.2.2.6 Corrective Action

The licensee shall establish procedures to ensure that corrective action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for initiating further investigation and corrective action in the event of a reported non-conformity with this licence shall be defined.

2.2.2.7 Awareness and Training

The licensee shall establish and maintain procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

2.2.2.8 Communications Programme

The licensee shall establish and maintain a Public Awareness Communications Programme to ensure that members of the public are informed and can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility.

2.2.2.9 Maintenance Programme

The licensee shall maintain a structured programme for maintenance and service of vehicles and equipment. This programme shall be supported by appropriate record keeping systems and diagnostic testing.

<i>Reason:</i>	<i>To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.</i>
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### Condition 3. Infrastructure and Operation

- 3.1 The licensee shall establish all infrastructure referred to in this licence prior to the commencement of the licensed activities or as required by the conditions of this licence.
- 3.2 The landfill footprint (maximum lateral extent of landfilling) shall be as indicated in Drawing No. DG0155-01 Rev. F01 *Waste Licence Boundary* of the Article 14 Reply received 6/04/05.
- 3.3 Wastes shall not be deposited in any new cell without the prior written agreement of the Agency.
- 3.4 Phased Construction Plan.
- 3.4.1 Three months prior to the commencement of any site development, the licensee shall submit to the Agency for its agreement a construction schedule, sequence and timescale (Construction Plan) incorporating the requirements of this licence and to give effect to the commitments in the application documentation. This Plan shall have regard to the following development phases: (i) Initial Development Works (ii) Main infrastructure development works (pre acceptance of waste for disposal), and (iii) Future/planned works (in parallel with waste disposal, e.g. future cell development/phasing). The Construction Plan for cell development shall have regard to the sequencing necessary to provide short, medium and long term screening of the operational areas.
- 3.5 Specified Engineering Works
- 3.5.1 The licensee shall submit proposals for any Specified Engineering Works, as defined in *Schedule D: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.
- 3.5.2 All specified engineering works shall be supervised by an appropriately qualified person, and that person, or persons, shall be present at all times during which relevant works are being undertaken.
- 3.5.3 Following the completion of any 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, as appropriate, include the following information:-
- (i) A description of the works;
  - (ii) As-built drawings of the works;
  - (iii) Records and results of all tests carried out (including failures);
  - (iv) Drawings and sections showing the location of all samples and tests carried out;
  - (v) Name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
  - (vi) Records of any problems and the remedial works carried out to resolve those problems; and
  - (vii) Any other information requested in writing by the Agency.
- 3.6 Facility Notice Board
- 3.6.1 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.

- 3.6.2 The board shall clearly show:-
- (i) the name and telephone number of the facility;
  - (ii) the normal hours of opening;
  - (iii) the name of the licence holder;
  - (iv) an emergency out of hours contact telephone number;
  - (v) the licence reference number; and
  - (vi) where environmental information relating to the facility can be obtained.
- 3.6.3 A plan of the facility clearly identifying the location of each storage and treatment area shall be displayed as close as is possible to the entrance to the facility. The plan shall be displayed on a durable material such that it is legible at all times. The plan shall be replaced as material changes to the facility are made.
- 3.7 Facility Security
- 3.7.1 Security (including CCTV) and stockproof fencing and gates shall be provided and maintained. The base of the fencing shall be set in the ground. Subject to the implementation of the restoration and aftercare plan and to the agreement of the Agency, the requirement for such site security may be removed.
- 3.7.2 Gates shall be locked shut when the facility is unsupervised.
- 3.7.3 The licensee shall remedy any defect in the gates and/or fencing as follows:-
- (i) A temporary repair shall be made by the end of the working day; and
  - (ii) A repair to the standard of the original gates and/or fencing shall be undertaken within three working days.
- 3.8 Facility Roads and Hardstanding
- 3.8.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
- 3.8.2 The facility entrance and hardstanding areas, shall be appropriately paved and maintained in a fit and clean condition.
- 3.9 Facility Office
- 3.9.1 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.
- 3.9.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.
- 3.10 Waste Inspection and Quarantine Areas
- 3.10.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.
- 3.10.2 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.
- 3.10.3 Drainage from these areas shall be directed to the leachate management system.

- 3.11 Weighbridge and Wheel Cleaner
- 3.11.1 The licensee shall provide and maintain a weighbridge and wheel cleaners at the facility.
- 3.11.2 The wheel cleaners shall be used by all vehicles leaving the facility as required to ensure that no process water or waste is carried off-site. All water from the wheel cleaning area shall be recirculated or directed to the leachate management system.
- 3.12 Civic Waste Facility
- 3.12.1 The licensee shall establish and maintain the Civic Waste Facility infrastructure.
- 3.12.2 The licensee shall provide and maintain appropriate receptacles at the Civic Waste Facility for the storage of various waste types.
- 3.13 Construction and Demolition Waste Recovery Area
- 3.13.1 Unless otherwise agreed by the Agency, the construction and demolition waste recovery area shall be as described in Section 6 *Recovery of Construction and Demolition Waste* and specified in Drawing No. DG0151-01 Rev. F01 *Proposed C & D Waste Recovery Area* of the Article 14 reply received 9/8/04.
- 3.13.2 This infrastructure shall at a minimum comprise the following:-
- (i) an impermeable concrete slab;
  - (ii) collection and disposal infrastructure for all run-off;
  - (iii) appropriate bunding to provide visual and noise screening;
- 3.13.3 All stockpiles shall be adequately contained to minimise dust generation.
- 3.13.4 Prior to the commencement of waste activities at the Construction and Demolition Waste Recovery Area, the licensee shall review the measures in place to minimise dust generation at this facility and shall provide a report to the Agency for its agreement, making recommendations on the necessity of installing a sprinkling irrigation system for the control of dust nuisance from the facility. Any remedial works recommended in this report must be implemented within a time-scale to be agreed by the Agency.
- 3.13.5 Only Construction and Demolition waste shall be accepted at this Area. Wastes which are capable of being recovered shall be separated and shall be stored temporarily in this area prior to being subjected to other recovery activities at the facility or transport off the facility.
- 3.14 Compost facility
- 3.14.1 Two months prior to works starting at the composting facility, the applicant shall submit details of the design of the composting facility in accordance with Condition 3.5 for agreement by the Agency. The Specified Engineering Works shall include a proposal for the location of the composting facility in accordance with Condition 8.3.2.
- 3.14.2 Appropriate infrastructure for the composting of waste shall be established and maintained at the facility prior to any waste being composted. This infrastructure shall at a minimum comprise the following:-
- (i) An impermeable concrete slab for windrow process; and
  - (ii) All leachate and/or storm water run-off generated from this activity shall be collected and re-used in the composting process where possible. Any leachate and/or storm water run-off not reused shall be discharged to the leachate collection/recirculation system.
- 3.15 Wastewater Treatment System

The licensee shall provide and maintain a Wastewater Treatment system at the facility for the treatment of sanitary effluent arising on-site. The percolation area shall satisfy the criteria set out in the Wastewater Treatment Manual, *Treatment Systems for Single Houses*, published by the Environmental Protection Agency.

3.16 Tank, Container and Drum Storage Areas

3.16.1 All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds should be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004).

3.16.2 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:-

3.16.2.1 110% of the capacity of the largest tank or drum within the bunded area; or

3.16.2.2 25% of the total volume of substance which could be stored within the bunded area

3.16.3 All drainage from bunded areas shall be treated as hazardous waste unless it can be demonstrated to be otherwise. All drainage from bunded areas shall be diverted for collection and safe disposal.

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

3.16.5 Bunds should be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004). The integrity and water tightness of all the bunding structures, tanks and containers and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee at least once every three years. This testing shall be carried out in accordance with any guidance published by the Agency.

3.16.6 All tanks, containers and drums shall be labelled to clearly indicate their contents.

3.17 Landfill Lining

3.17.1 Unless otherwise agreed in writing, the landfill lining system shall comprise:-

(i) A composite liner consisting of a 1m layer of clay with a hydraulic conductivity of less than or equal to  $1 \times 10^{-9} \text{ m}^3/\text{m}^2/\text{s}$ , overlain by a 2mm thick high density polyethylene (HDPE) layer;

(ii) A geotextile protection layer placed over the HDPE layer;

(iii) A 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of  $1 \times 10^{-3} \text{ m}^3/\text{m}^2/\text{s}$ , of pre-washed, uncrushed, granular, rounded stone (16-32mm grain size) incorporating leachate collection drains;

(iv) For any new cells the lining system on the base of the facility shall be laid to a minimum slope of 1:50, and

(v) The side walls shall be designed and constructed to achieve an equivalent protection.

3.18 Leachate Management Infrastructure

3.18.1 Leachate management infrastructure, as described in Section 4.9 *Environmental Control Systems* and specified on Drawing No. DG-0152-02 Rev. F01 *Existing & Proposed Leachate Management System* of the Article 14 reply received on 9/8/04, shall be provided and maintained at the facility from the date of grant of this licence, unless otherwise agreed by the Agency.

3.18.2 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.



### 3.19 Landfill Gas Management Infrastructure

- 3.19.1 Infrastructure for the active collection and flaring of landfill gas, as described in Section 4.9 *Environmental Control Systems* and specified on Drawing No DG0152-01 Rev. F01 *Proposed Gas Management System* of the Article 14 reply received on 9/8/04, shall be installed and commissioned at the facility from the date of grant of this licence. The flare shall be of an enclosed type design.
- 3.19.2 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.
- 3.19.3 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.
- 3.19.4 If the utilisation of landfill gas as an energy resource is determined to be feasible, as may be agreed by the Agency, a system for the utilisation of landfill gas as an energy resource shall be installed and maintained to the satisfaction of the Agency.

### 3.20 Groundwater Infrastructure

- 3.20.1 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.
- 3.20.2 The sub-liner groundwater collection drainage layer shall be fitted with an appropriate drainage outfall.
- 3.20.3 The discharge shall be monitored in accordance with the proposal agreed by the Agency.
- 3.20.4 All wells & boreholes shall be adequately sealed to prevent surface contamination and, as may be appropriate, decommissioned according to the UK Environment Agency guidelines 'Decommissioning Redundant Boreholes and Wells' (or as otherwise may be agreed by the Agency).
- 3.20.5 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency's landfill manual "Landfill Monitoring".

### 3.21 Surface Water Management Infrastructure

- 3.21.1 The licensee shall provide and maintain the surface water management infrastructure as detailed on Drawing No. DG0121-01 Rev. F01 *Proposed Surface Water Management System* from the date of grant of this licence, unless otherwise indicated or agreed by the Agency.
- 3.21.2 All storm water run-off arising from impermeable surfaces (excluding run-off from the waste inspection/quarantine areas and the composting area) shall be diverted to a silt trap and oil separator prior to discharge from the facility.
- 3.21.3 The licensee shall install and maintain silt traps and oil separator at the facility to ensure that all storm water discharges from the facility pass through a silt trap and oil separator prior to discharge. The separator shall be a Class I full retention separator and the silt traps and separator shall be in accordance with I.S. EN 858-2:2003 (separator systems for light liquids).
- 3.21.4 A manual shut-off valve shall be installed at the interceptor.

- 3.22 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.
- 3.23 Sampling equipment shall be operated and maintained such that sufficient sample is collected to meet both internal monitoring requirements and those of the Agency. A separate composite sample or homogeneous sub-sample (of sufficient volume as advised) should be retained as required for EPA use.
- 3.24 The licensee shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 3.25 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.
- 3.26 All pump sumps, storage tanks, lagoons or other treatment plant chambers from which spillage of environmentally significant materials might occur in such quantities as are likely to breach local or remote containment or separator, shall be fitted with high liquid level alarms (or oil detectors as appropriate).
- 3.27 The licensee shall maintain in a prominent location on the site a wind sock, or other wind direction indicator, which shall be visible from the public roadway outside the site.
- 3.28 Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 8.12.4, complies with any requirements of the Department of Agriculture, Fisheries and Food relating to the management of animal by-products and has been agreed in advance with the Agency.

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

## Condition 4. Interpretation

- 4.1 Emission limit values for emissions to atmosphere in this licence shall be interpreted in the following way:
- 4.1.1 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.
- 4.1.2 For 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 flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.
  - (iii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.

- 4.2 The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of: -
- 4.2.1 In the case of landfill gas flare:  
Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
- 4.2.2 In the case of landfill gas combustion plant:  
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 4.3 Emission limit values for emissions to waters in this licence shall be interpreted in the following way:-
- 4.3.1 Continuous monitoring:
- (i) No flow value shall exceed the specified limit.
  - (ii) No pH value shall deviate from the specified range.
  - (iii) No temperature value shall exceed the limit value.
- 4.3.2 Composite Sampling:
- (i) No pH value shall deviate from the specified range.
  - (ii) For parameters other than pH and flow, eight out of ten consecutive composite results, based on flow proportional composite sampling, shall not exceed the emission limit value. No individual result similarly calculated shall exceed 1.2 times the emission limit value.
- 4.3.3 Discrete Sampling
- For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.
- 4.4 Where the ability to measure a parameter is affected by mixing before emission, then, with agreement from the Agency, the parameter may be assessed before mixing takes place.
- 4.5 Noise from the facility shall not give rise to sound pressure levels (Leq,T) measured at the boundary of the facility which exceed the limit value(s).
- 4.6 Dust and particulate matter from the activity shall not give rise to deposition levels which exceed the limit value(s).

*Reason: To clarify the interpretation of limit values fixed under the licence.*

## **Condition 5. Emissions**

- 5.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule B: Emission Limits* of this licence. There shall be no other emissions of environmental significance.
- 5.2 The licensee shall ensure that the activities shall be carried out in a manner such that emissions including odours do not result in significant impairment of, and/or significant interference with amenities or the environment beyond the facility boundary.
- 5.3 Emissions to Surface Water

- 5.3.1 No leachate or sanitary effluent shall be discharged to surface water drains and surface water courses.
- 5.3.2 No substance shall be discharged in a manner, or at a concentration which, following initial dilution, causes tainting of fish or shellfish.
- 5.4 There shall be no direct emissions to groundwater.
- 5.5 All leachate or contaminated water tankered from the facility shall be transported to Nenagh Waste Water Treatment Plant for treatment and disposal, or an alternative facility agreed in advance by the Agency.
- 5.6 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.
- 5.7 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.

*Reason: To provide for the protection of the environment by way of control and limitation of emissions.*

## **Condition 6. Control and Monitoring**

### 6.1 Telemetry

6.1.1 A telemetry system shall be provided and maintained 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 a break in power supply or during maintenance. The Licensee shall maintain a manual control and monitoring system to provide for the recording of the information specified in Condition 6.1.2. This manual and telemetry system shall be as agreed by the Agency and shall include the requirements regarding monitoring of the inlet to the surface water lagoon.

6.1.2 This system shall include for:-

- (i) Recording of leachate levels in the lined cells and lagoon;
- (ii) Recording of levels in the surface water lagoon(s) and flows to the perimeter streams;
- (iii) Quality of the surface water at the inlet to the surface water lagoon(s) and being discharged to the perimeter streams; and
- (iv) Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.

### 6.2 Leachate Management

6.2.1 The licensee shall maintain a leachate monitoring programme to include for leachate monitoring in all cells at the landfill. Leachate monitoring shall be carried out at the leachate collection point and two other points in each cell.

6.2.2 Leachate levels in the waste shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.

6.2.3 The level of leachate in the pump sumps shall be monitored as outlined in *Schedule C2.3*.

- 6.2.4 The frequency of leachate removal from the leachate storage lagoon(s) shall be such that a minimum freeboard of 0.5m shall be maintained in the lagoon(s) at all times. The required freeboard shall be clearly indicated in the lagoon(s).
- 6.2.5 Unless treated on the facility, leachate stored in the leachate storage lagoon(s) shall be disposed of by tankering off-site in fully enclosed road tankers.
- 6.2.6 Recirculation of leachate or other contaminated water shall only be undertaken within cells which have been lined to the satisfaction of the Agency.

### 6.3 Landfill Gas

- 6.3.1 The licensee shall maintain a landfill gas monitoring programme, as agreed with the Agency, to include at least one landfill gas monitoring borehole per cell prior to the gas collection system being in place.
- 6.3.2 At least two rounds of landfill gas sampling (one during falling atmospheric pressure) in locations external to the disposal cells should be completed prior to commencement of filling of any new area.
- 6.3.3 Flares shall be operated to ensure a burn chamber residence time of minimum 0.3 sec and burn temperature of minimum 1000°C.
- 6.3.4 In relation to landfill derived gases the following shall constitute a trigger level:
- (i) Methane greater than 1% v/v; or,
  - (ii) Carbon Dioxide greater than 1.5% v/v,
- measured in any monitoring borehole, service duct, manhole or other point as may be specified, located external to the body of waste.

### 6.4 Groundwater

- 6.4.1 The licensee shall maintain and submit to the Agency for its agreement any proposals for their revision, groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC.
- 6.4.2 The licensee shall monitor selected downgradient private wells within 500m of the facility, subject to the agreement of the well owners, as set out in the groundwater monitoring programme in *Schedule C: Control & Monitoring*, of this licence.
- 6.4.3 The licensee shall ensure that groundwater monitoring well sampling equipment is available/installed on-site and is fit for purpose at all times. The sampling equipment shall be to Agency specifications.

### 6.5 Litter Control

- 6.5.1 Litter netting shall be installed and maintained around the perimeter of the active tipping area. The netting shall meet the guidance given in the Agency's Manual on "Landfill Operational Practices".
- 6.5.2 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows:-
- (i) A temporary repair shall be made by the end of the working day; and
  - (ii) A repair to the standard of the original netting shall be undertaken within three working days.
- 6.5.3 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be

removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.

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

#### 6.6 Odour Control

6.6.1 Leachate holding tanks/lagoons shall be covered, and head gases vented to treatment as may be required by the Agency.

6.6.2 All odorous or odour forming wastes shall be covered as soon as practicable and in any case at the end of the working day.

6.6.3 Where it is proposed to take biological sludges at the facility, these must be subject to pre-treatment (e.g. lime stabilisation) prior to acceptance at the facility.

6.6.4 When siting and operating landfill gas infrastructure regard shall be had to the potential for, and mitigation of, odour nuisance. This matter is to be addressed in the relevant Specified Engineering Works proposals as required by Condition 3.5.1.

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

6.8 Birds shall be prevented from gathering on and feeding at the facility by the use of birds of prey and/or other bird scaring techniques. The birds of prey and/or other techniques shall be in place and shall be employed every day, from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency.

#### 6.9 Operational Controls

6.9.1 Only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials.

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

6.9.3 All waste deposited at the working face shall be compacted, using a steel wheeled compactor, and covered as soon as is practicable and at any rate prior to the end of the working day.

6.9.4 The working face, or faces, shall each day at the end of the day, be covered with suitable material.

6.9.5 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.

6.9.6 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 necessary infrastructure or otherwise only with the prior agreement from the Agency.

6.9.7 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.

6.9.8 The green waste shredder must not be operated between the hours of 18:00 and 08:00.

- 6.9.9 Scavenging shall not be permitted at the facility.
- 6.9.10 Unless otherwise agreed by the Agency, all sludges shall be covered immediately with other waste.
- 6.9.11 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 6.9.12 No smoking shall be allowed at the facility
- 6.10 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and as in accordance with *Schedule C : Control & Monitoring*, of this licence:
- 6.10.1 Analysis shall be undertaken by competent staff in accordance with documented operating procedures.
- 6.10.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics determined.
- 6.10.3 Such procedures shall be subject to a programme of Analytical Quality Control using control standards with evaluation of test responses.
- 6.10.4 Where analysis is sub-contracted it shall be to a competent laboratory.
- 6.11 The licensee shall ensure that any waste acceptance testing required by this licence shall be carried out by competent laboratories in accordance with CEN-standards. If CEN standards are not available, ISO national or international standards that will ensure the provision of data of an equivalent scientific quality shall apply.
- 6.12 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. Agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.
- 6.13 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge.
- 6.14 All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer.
- 6.15 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the agreement of the Agency following evaluation of test results.
- 6.16 All tanks and pipelines shall be maintained impervious to the materials carried by or stored therein. The integrity and water tightness of all underground pipes and tanks and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.
- 6.17 Storm water
- 6.17.1 A visual examination of the storm water discharge shall be carried out daily. A log of such inspections shall be maintained.
- 6.17.2 The drainage system, bunds, silt traps and oil separators shall be inspected weekly, desludged as necessary and properly maintained at all times. All sludge and drainage from these operations shall be collected for safe disposal.

- 6.18 Dust Monitoring
- 6.18.1 Prior to commencement of waste acceptance at the construction and demolition waste recovery facility, the licensee shall submit an updated dust monitoring programme to include additional dust monitoring locations along the western facility boundary.
- 6.18.2 Prior to commence of waste acceptance at the composting facility, the licensee shall submit an updated dust monitoring programme to include additional dust monitoring locations in the area of the composting facility.
- 6.19 Prior to commencement of waste acceptance at the construction and demolition waste recovery facility, the licensee shall submit an updated noise monitoring programme to include for noise monitoring of noise sensitive locations 3 and 4 as shown on Drawing No. DG0150-02 Rev. F01 *Proximity to Residences within 500m from Proposed C&D Waste Recovery Area* of the Article 14 reply received on 9/8/04.
- 6.20 The licensee shall monitor meteorological conditions as specified in *Schedule C.6*.
- 6.21 The licensee shall carry out a stability assessment of the side slopes of the facility annually. The results of this assessment shall be reported as part of the AER.
- 6.22 The licensee shall carry out a noise survey of the site operations annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Environmental Noise Survey Guidance Document' as published by the Agency.
- 6.23 The licensee shall prepare and maintain a PER for the site. The substances to be included in the PER shall be agreed by the Agency each year by reference to the list specified in the Agency's AER Guidance Note. The PER shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted as part of the AER.
- 6.24 The licensee shall provide and maintain a Data Management System for collation, archiving, assessing and graphically presenting the environmental monitoring data generated as a result of this licence.

*Reason: To provide for the protection of the environment by way of treatment and monitoring of emissions.*

## **Condition 7. Resource Use and Energy Efficiency**

- 7.1 The licensee shall carry out an audit of the energy efficiency of the site within one year of the date of grant of this licence. The audit shall be carried out in accordance with the guidance published by the Agency; "Guidance Note on Energy Efficiency Auditing". The energy efficiency audit shall be repeated at intervals as required by the Agency.
- 7.2 The audit shall identify all opportunities for energy use reduction and efficiency and the recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2 above.
- 7.3 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into Schedule of Environmental Objectives and Targets.
- 7.4 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity.



Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

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

## Condition 8. Materials Handling

### 8.1 Waste Acceptance and Characterisation Procedures

8.1.1 Only waste that has been subject to treatment shall be accepted for disposal at the landfill facility.

(i) Treatment shall reflect published EPA technical guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management*, EPA, 2009.

(ii) With the agreement of the Agency, this condition shall not apply to:

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

8.1.2 Waste shall only be accepted at the facility, from Local Authority waste collection or transport vehicles or holders of waste permits, unless exempted or excluded, issued under the Waste Management (Collection Permit) Regulations 2007, or as may be amended.

8.1.3 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility. Shredded tyres shall not be disposed of at the facility.

8.1.4 No hazardous wastes or liquid wastes shall be disposed of at the facility.

8.1.5 Inert waste accepted at the facility shall comply with the standards established in the EU Decision (2003/22/EC).

8.1.6 Within one month of the date of grant of this licence, the licensee shall submit to the Agency for its agreement updated written procedures for the acceptance and handling of all wastes. These procedures shall include details of the treatment of all waste to be carried out in advance of acceptance at the facility and shall also include methods for the characterisation, classification and coding of waste. The procedures shall have regard to the EU Decision (2003/33/EC) on establishing the criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive (1999/31/EC) on the landfill of waste.

8.1.7 Gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.

8.1.8 In addition to the characterisation required under the Waste Acceptance Procedures, the licensee shall carry out analyses on a minimum of one sample per annum for each industrial sludge source being accepted at the facility. The results of these analyses shall be presented in the Annual Environmental Report (AER).

8.1.9 No waste which in the conditions of the landfill, is explosive, corrosive, oxidising, highly flammable or flammable as defined in EU Council Directive 91/689/EEC shall be accepted at the landfill.

- 8.1.10 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 8.1.6 is prohibited.
- 8.1.11 The waste acceptance procedures established under Condition 8.1.6 shall provide:-
- (i) For the checking of waste documentation on receipt of waste in the waste reception area;
  - (ii) For non pre-cleared customers, the visual inspection and testing of waste in the waste inspection area pending acceptance/rejection;
  - (iii) For the visual inspection of waste when deposited at the working face;
  - (iv) For the keeping for two months of any samples associated with on-site verification sampling of waste accepted at the facility.
- 8.1.12 The licensee shall provide a written acknowledgement (to carrier/waste contractor) of receipt of each delivery of waste to the facility (for disposal in the landfill).
- 8.2 Civic Waste Facility
- 8.2.1 All waste deposited in the Civic Waste Facility shall be either:-
- (i) into a skip;
  - (ii) into the hopper of the compactor for disposal;
  - (iii) into a receptacle for recovery; or
  - (iv) in the case where inspection is required, into a designated inspection area.
- 8.2.2 The licensee shall assign and clearly label each container/bay at the Civic Waste Facility to indicate their contents.
- 8.2.3 At the end of the working day the ground around the Civic Waste Facility, the hopper and the compactor shall be cleared of waste.
- 8.2.4 All waste accepted at the Civic Waste Facility for disposal shall be removed within forty eight hours of its arrival at the Civic Waste Facility.
- 8.3 Compost
- 8.3.1 The composting facility shall not process greater than 2,000 tonnes of green waste per annum, unless otherwise agreed by the Agency.
- 8.3.2 The composting of green waste shall not be carried out within 200m of any sensitive receptors.
- 8.3.3 In order not to be considered a waste, compost produced by the facility shall, unless otherwise agreed by the Agency, comply with the quality standards established in *Schedule F: Standards for Compost Quality*, of this licence. Analysis of the compost shall be in accordance with the requirements of that Schedule.
- 8.3.4 Compost not meeting the above standard may be reused in the process or handled as a waste and details recorded as per Condition 11.10.
- 8.3.5 While awaiting collection, mature compost shall be stored in areas protected against uncontrolled run-off and nuisance formation.
- 8.4 Disposal or recovery of waste on-site shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.
- 8.5 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. The waste shall be transported only from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the

- environment and in accordance with the appropriate National and European legislation and protocols.
- 8.6 The licensee shall ensure that waste prior to transfer to another person shall be classified packaged and labelled in accordance with National, European and any other standards which are in force in relation to such labelling.
- 8.7 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run – off.
- 8.8 Waste shall be stored in designated areas, protected as may be appropriate, against spillage and leachate run-off. The waste is to be clearly labelled and appropriately segregated.
- 8.9 No waste classified as green list waste in accordance with the EU Transfrontier Shipment of Waste Regulation (Council Regulation EEC No. 259/1993, as amended) shall be consigned for recovery without the agreement of the Agency.
- 8.10 With the exception of use of recovered fuels as may be approved for this site by the Agency, no waste shall be burnt at the facility.
- 8.11 Limit on acceptance of biodegradable municipal waste
- 8.11.1 Unless otherwise as may be specified by the Agency, the following limits shall apply:
- (i) For the calendar years 2010, 2011 and 2012, a maximum of 40% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW),
  - (ii) For the calendar years 2013, 2014 and 2015, a maximum of 24% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW, and
  - (iii) For the calendar year 2016 and thereafter, a maximum of 15% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW,
- unless an alternative has been agreed in writing by the Agency in accordance with condition 8.11.2.
- 8.11.2 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with condition 8.11.1. Any agreements entered into become part of this licence. In seeking agreement the following factors, as a minimum, shall be addressed in any proposal submitted to the Agency:
- BAT;
  - age, intake rate and life expectancy of facility;
  - waste intake characterisation;
  - potential for odour generation;
  - proximity to sensitive receptors;
  - capacity of landfill gas and leachate infrastructure; and
  - consideration of any potential environmental impact or change to operational practices.
- 8.12 Determination of biodegradable municipal waste content of municipal waste
- 8.12.1 The licensee shall determine the biodegradable municipal waste content of MSW accepted for disposal to the body of the landfill. Waste that has been bio-stabilised in accordance with condition 8.12.4 shall not be considered BMW.

- 8.12.2 Bio-stabilised residual wastes meeting the requirements of Condition 8.12.4 received at the landfill facility may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 8.11.1.
- 8.12.3 In determining BMW content, the licensee shall use approved calculation factors for BMW content of municipal waste streams published by the EPA. With the agreement of the EPA, alternative factors can be used if they have been determined following waste characterisation carried out in accordance with EPA-approved characterisation protocols including, where appropriate, the use of EPA-approved contractors.
- 8.12.4 In the case of bio-stabilised residual wastes, stabilisation means the reduction of the decomposition properties of the waste to such an extent that offensive odours are minimised and that the respiration activity after four days (AT<sub>4</sub>) is <10mg O<sub>2</sub>/g DM until 1 January 2016 and <7mg O<sub>2</sub>/g DM thereafter.
- 8.12.5 Bio-stabilised residual wastes shall be monitored in accordance with Schedule C.4.
- 8.12.6 Waste that was accepted to the body of the landfill as stabilised but subsequently is found not to meet the stabilisation standard set out in Condition 8.12.4 shall be notified to the Agency and included in the calculation of BMW accepted to the body of the landfill when assessing compliance with Condition 8.11.1. In the event of failure to meet the stabilisation standard, each and every load of bio-stabilised residual waste accepted from the failed source following receipt of the failed test result shall be tested, notwithstanding the testing frequency set out in Schedule C.4, until otherwise agreed with the Agency.
- 8.12.7 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with condition 8.11, which shall be available for inspection by Agency personnel.
- 8.13 All wastes shall be checked at the working face. Any waste deemed unsuitable for acceptance at the facility and/or in contravention of this licence shall be immediately separated and removed from the facility at the earliest possible time. Temporary storage of such wastes shall be in a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.

*Reason: To provide for the appropriate handling of materials and the protection of the environment.*

## **Condition 9. Accident Prevention and Emergency Response**

- 9.1 The licensee shall ensure that a documented Accident Prevention Policy is in place which will address the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.
- 9.2 The licensee shall maintain, review annually and update as necessary a documented Emergency Response Procedure (ERP) at the facility.
- 9.3 In the event of an incident the licensee shall immediately:-

- (i) isolate the source of any such emission;
- (ii) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
- (iii) evaluate the environmental pollution, if any, caused by the incident;
- (iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
- (v) identify the date, time and place of the incident;
- (vi) provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency to:-
  - identify and put in place measures to avoid reoccurrence of the incident; and
  - identify and put in place any other appropriate remedial action.
- (vii) notify any other appropriate Agency or Authority.

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

## **Condition 10. Closure, Restoration and Aftercare**

- 10.1. Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.
- 10.2. The restoration of the landfill cells shall be undertaken within twelve months of the completion of installation of the permanent cap.
- 10.3. Landscaping
  - 10.3.1 Landscaping of the facility shall be as described in the Article 14 reply received on 9/8/04, unless otherwise agreed by the Agency.
  - 10.3.2 The restored landform for the landfill facility shall be as shown on Drawing No. *Fig. 2A – Landscape Layout* and Drawing No. *Fig. 3A- Site Transects* of the Article 14 reply received on 9/8/04. Unless otherwise agreed by the Agency, the finished (post settlement restored) levels of the landfill shall not exceed 120m OD at any location.
  - 10.3.3 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.
- 10.4. Final Capping
  - 10.4.1 The licensee shall restore the facility on a phased basis. Unless otherwise agreed, filled cells shall be permanently capped within twenty-four months of the cells having been filled to the required level.
  - 10.4.2 Unless otherwise agreed by the Agency, the final capping shall consist of the following:-
    - (i) Top soil (150 -300mm);

- (ii) Subsoils, such that total thickness of top soil and subsoils is at least 1m;
  - (iii) Drainage layer of 0.5m thickness having a minimum hydraulic conductivity of  $1 \times 10^{-4}$  m/s or a geosynthetic material that provides equivalent transmissivity;
  - (iv) Compacted mineral layer of a minimum 0.6m thickness with a permeability of less than  $1 \times 10^{-9}$  m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and
  - (v) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 10.5 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.
- 10.6 All soils shall be stored to preserve the soil structure for future use.
- 10.7 Closure, Restoration & Aftercare Management Plan (CRAMP):
- 10.7.1 The licensee shall maintain a fully detailed and costed plan for the closure, restoration and long-term aftercare of the site or part thereof, as agreed with the Agency.
  - 10.7.2 The plan shall be maintained and reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the prior written agreement of the Agency.
- 10.8 The CRAMP shall include as a minimum, the following:-
- (i) A scope statement for the plan.
  - (ii) The criteria, including those specified in this licence, which define the successful closure & restoration of the facility or part thereof, and which ensures minimum impact to the environment.
  - (iii) A programme to achieve the stated criteria.
  - (iv) Where relevant, a test programme to demonstrate the successful implementation of the plan.
  - (v) Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility.
  - (vi) Details of the costings for the plan and the financial provisions to underwrite those costs.
- 10.9 A final validation report to include a certificate of completion for the CRAMP, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

*Reason: To make provision for the proper closure of the activity ensuring protection of the environment.*

## **Condition 11. Notifications, Records and Reports**

- 11.1 The licensee shall notify the Agency by both telephone and either facsimile or electronic mail, if available, to the Agency's Headquarters in Wexford, or to such

other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

- (i) Any release of environmental significance to atmosphere from any potential emission point including bypasses.
- (ii) Any emission which does not comply with the requirements of this licence.
- (iii) Any malfunction or breakdown of key control equipment or monitoring equipment set out in *Schedule C: Control & Monitoring*, of this licence which is likely to lead to loss of control of the abatement system.
- (iv) Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or requiring an emergency response by the Local Authority.

The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any emissions.

- 11.2 In the case of any incident which relates to discharges to water, the licensee shall notify the Local Authority and the Shannon Regional Fisheries Board as soon as practicable after such an incident.
- 11.3 The licensee shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident. The record shall include all corrective actions taken to; manage the incident, minimise wastes generated and the effect on the environment, and avoid recurrence. The licensee shall as soon as practicable following incident notification, submit to the Agency the incident record.
- 11.4 In relation to landfilling activities, the licensee shall notify the Agency of any wastes presented at but not accepted to the facility.
- 11.5 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant and give details of the nature of the complaint. A record shall also be kept of the response made in the case of each complaint.
- 11.6 Prior to the development of any undisturbed area, the advice of the Heritage Section of the Department of the Environment, Heritage and Local Government shall be sought.
- 11.7 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility.
- 11.8 The licensee shall as a minimum keep the following documents at the site:-
  - (i) the licences relating to the facility;
  - (ii) the current EMS for the facility;
  - (iii) the previous year's AER for the facility;
  - (iv) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility;
  - (v) relevant correspondence with the Agency;

- (vi) an up to date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points

and this documentation shall be available to the Agency for inspection at all reasonable times.

11.9 The licensee shall submit to the Agency, by the 31<sup>st</sup> March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in *Schedule G: Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.

11.10 A full record, which shall be open to inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall be maintained on a monthly basis and shall as a minimum contain details of the following:

- (i) The tonnages and EWC Code for the waste materials imported and/or sent off-site for disposal/recovery.
- (ii) The names of the agent and carrier of the waste, and their waste collection permit details, if required (to include issuing authority and vehicle registration number).
- (iii) Details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required.
- (iv) Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.
- (v) Details of all wastes consigned abroad for Recovery and classified as 'Green' in accordance with the EU Transfrontier Shipment of Waste Regulations (Council Regulation EEC No. 259/1993, as amended). The rationale for the classification must form part of the record.
- (vi) Details of any rejected consignments.
- (vii) Details of any approved waste mixing.
- (viii) The tonnages and EWC Code for the waste materials recovered/disposed on-site.

11.11 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:

- (i) the date and time;
- (ii) the name of the carrier (including if appropriate, the waste carrier registration details);
- (iii) the vehicle registration number;
- (iv) the trailer, skip or other container unique identification number (where relevant);
- (v) the name of the producer(s)/collector(s) of the waste as appropriate;
- (vi) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
- (vii) a description of the waste including the associated EWC/HWL codes;
- (viii) the quantity of the waste, recorded in tonnes;
- (ix) details of the treatment(s) to which the waste has been subjected;
- (x) the classification and coding of the waste, including whether MSW or otherwise;
- (xi) whether the waste is for disposal or recovery and if recovery for what purpose;
- (xii) the name of the person checking the load; and



- (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.

#### 11.12 Waste Recovery Reports

The licensee shall as part of the Annual Environmental Report for the site submit a report on the contribution by this facility to the achievement of the waste recovery objectives stated in Condition 2.2.2.2 and as otherwise may be stated in National and European Union waste policies and shall, as a minimum, include tonnages of the following:

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

#### 11.13 A record shall be kept of each consignment of trade effluent and/or leachate removed from the facility. The record shall include the following:-

- (i) the name of the carrier;
- (ii) the date and time of removal of trade effluent, leachate and/or polluted storm water from the facility;
- (iii) the volume of trade effluent, leachate and/or polluted storm water, in cubic metres, removed from the facility on each occasion;
- (iv) the name and address of the Waste Water Treatment Plant to which the trade effluent, leachate and/or polluted storm water was transported; and
- (v) any incidents or spillages of trade effluent, leachate and/or polluted storm water during its removal or transportation.

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

#### 11.15 Unless otherwise agreed by the Agency, all reports and notifications detailed in Schedule E: Reporting, or as otherwise may be required by this licence, shall be submitted in accordance to the relevant frequencies/dates specified in this licence.

#### 11.16 Reporting to demonstrate compliance with diversion targets

The Licensee shall report to the Agency such data and records, and at such frequency, as may be specified by the Agency in order to demonstrate compliance with the requirements of Condition 8.11.1. From 1 January 2010, and unless otherwise advised by the Agency, the licensee shall submit quarterly summary reports to the Agency within one week of the end of each quarter on the quantity of MSW and BMW accepted at the landfill during the preceding quarter and on a cumulative basis for the calendar year to date. The report shall detail the tonnage of MSW and BMW accepted and the basis (including all calculation factors) on which the figures have been calculated.

*Reason: To provide for the collection and reporting of adequate information on the activity.*

## Condition 12. Financial Charges and Provisions

### 12.1 Agency Charges

- 12.1.1 The licensee shall pay to the Agency an annual contribution of €20,394, or such sum as the Agency from time to time determines, having regard to

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

- 12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased, the licensee shall contribute such sums as determined by the Agency to defray its costs in regard to items not covered by the said annual contribution.

## 12.2 Environmental Liabilities

- 12.2.1 The licensee shall as part of the AER provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying on of the activity.

- 12.2.2 The licensee shall arrange for the completion, by an independent and appropriately qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA), which addresses the liabilities from past and present activities. The assessment shall include those liabilities and costs identified in Condition 10 for execution of the CRAMP. A report on this assessment shall be submitted to the Agency for agreement within twelve months of date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement: review results are to be notified as part of the AER.

- 12.2.3 As part of the measures identified in Condition 12.2.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated with the operation (including closure and aftercare) of the facility. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'statement of measures' report identified in Condition 12.2.1.

- 12.2.4 Unless otherwise agreed, any revision to that part of the indemnity dealing with restoration and aftercare liabilities (refer Condition 10.9.1), shall be computed using the following formula:-

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

Where:-

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

12.3 Cost of landfill of waste

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

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

## SCHEDULE A: Limitations

### A.1 Authorised Waste Operations

The following waste related processes are authorised:

- i. Composting
- ii. Shredding, crushing, bailing, repackaging processes
- iii. Non-hazardous C & D waste recovery (incl. crushing, screening, sorting, blending)
- iv. Landfilling of inert and non-hazardous waste
- v. Use of compost & inert waste in landfill operation
- vi. Storage of waste
- vii. Recovery of dry recyclables

No addition to these processes is permitted unless agreed in advance by the Agency.

### A.2 Waste Acceptance

**Table A.2.1 Waste Categories and Quantities**

WASTE TYPE <sup>Note 1</sup>	MAXIMUM (TONNES PER ANNUM) <sup>Notes 2 &amp; 3</sup>
Municipal and Commercial waste	32,000
Green waste for composting	2,000
Non-hazardous C & D waste	11,500
Pre-treated Sludge <sup>Note 4</sup>	3,500
<b>TOTAL</b>	<b>49,000</b>

**Note 1:** Any proposals to accept other compatible waste streams must be agreed in advance by the Agency and the total amount of waste must be within the amount specified.

**Note 2:** The individual limitation on waste streams may be varied with the agreement of the Agency subject to the overall total limit staying the same.

**Note 3:** Non-hazardous C & D or Inert waste/secondary materials or compost imported to, or generated on, the site for use in on-site landfill restoration or on-site infrastructure projects are not included in these limitations. A detailed statement (with mass balance) of waste used on-site should be included as part of the AER.

**Note 4:** Pre-treated sludge to be used only as daily cover and in the development/restoration projects at the landfill facility.

**Table A.2.2 Total Permitted Landfill Capacity**

Total quantity of waste permitted to be placed at the landfill facility (over authorised life of facility)	446,246 m <sup>3</sup>
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## SCHEDULE B: Emission Limits

### B.1 Emissions to Air

#### Landfill Derived Gas Concentration Limits:

(Measured in any building on or adjacent to the facility and perimeter boreholes).

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



#### Emission Limits Values for Landfill Gas Plant:

Emission Point Reference numbers: (To be agreed by Agency in advance.)

Minimum discharge height: 5m

Parameter	Flare (enclosed) Emission Limit Value <sup>Note 1</sup>	Utilisation Plant Emission Limit Value <sup>Note 1</sup>
Nitrogen oxides (NO <sub>x</sub> )	150 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>
Particulates	Not applicable	130 mg/m <sup>3</sup>

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



#### Dust Deposition Limits:

Measured at the monitoring points indicated on Drawing No. DG0150-01 Rev. F01 *Site Location Map and Site Survey including Dust Monitoring Points* of the Article 14 reply received on 9/8/04. Additional dust monitoring point(s) to be installed in accordance with Condition 6.18:

Level (mg/m <sup>2</sup> /day) <sup>Note 1</sup>
350

**Note 1:** 30 day composite sample with the results expressed as mg/m<sup>2</sup>/day.



### B.2 Emissions to Water

Emission Point Reference No.:

Outlet(s) from surface water lagoon(s) as shown on Drawing No. DG0121-01 Rev. F01 *Proposed Surface Water Management System*, unless otherwise agreed by the Agency.

Name of Receiving Waters:

Ballaghveny Stream

Parameter	Emission Limit Value (mg/l)
BOD	35
Ammonia (as NH <sub>4</sub> )	0.3
Sulphate	100
Chloride	100
Suspended Solids	35



**B.3 Emission to Sewer**

There are no process effluent emissions to sewer.



**B.4 Noise Emissions**

Measured at the monitoring points B1, B2, B3 B4, NSL1 and NSL2. Additional noise monitoring points to be installed in accordance with Condition 6.19.

Daytime dB(A) L <sub>Aeq</sub> (30 minutes)	Night-time dB(A) L <sub>Aeq</sub> (30 minutes)
55 <sup>Note 1</sup>	45 <sup>Note 1</sup>

**Note 1:** There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.



**SCHEDULE C: Control & Monitoring**

**C.1.1 Control of Emissions to Air**

**Emission Point Reference No.:** Flare Stacks & Generation Plant

**Description of Treatment:** Gas Extraction & Combustion

Control Parameter	Monitoring	Key Equipment <sup>Note 1</sup>
Continuous burn	Continuous with alarm/call-out	Flame detector or equivalent approved Pumps/engines
Extraction	Continuous with alarm/call-out	Pressure gauge or equivalent approved Pumps/engines

**Note 1:** The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.



**C.1.2 Monitoring of Emissions to Air**

**Emission Point Reference No.:** Flare Stacks & Generation Plant

Parameter	Flare (enclosed)	Utilisation Plant	Analysis Method <sup>Note 1</sup> /Technique
	Monitoring Frequency	Monitoring Frequency	
<b>Inlet</b>			
Methane (CH <sub>4</sub> ) % v/v	Continuous	Weekly	Infrared analyser or equivalent approved
Carbon dioxide (CO <sub>2</sub> ) % v/v	Continuous	Weekly	Infrared analyser or equivalent approved
Oxygen (O <sub>2</sub> ) % v/v	Continuous	Weekly	Electrochemical or equivalent approved
<b>Process Parameters</b>			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger
Residence Time	Quarterly	Quarterly	To be agreed.
<b>Outlet</b>			
Carbon monoxide (CO)	Continuous	Continuous	Flue gas analyser/datalogger or equivalent approved
Nitrogen Oxides (Nox)	Biannually	Biannually	Flue gas analyser or equivalent approved
Sulphur dioxide (SO <sub>2</sub> )	Biannually	Biannually	Flue gas analyser or equivalent approved
Particulates	Not applicable	Annually	Isokinetic/Gravimetric or equivalent approved

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



**C.1.3 MONITORING OF LANDFILL GAS EMISSIONS**

**Location:** Perimeter Landfill Gas boreholes as indicated on Drawing No. DG0152-01 Rev. F01 *Proposed Gas Management System* of the Article 14 reply received on 9/8/04, unless otherwise agreed by the Agency<sup>Note 1</sup>

And at least one monitoring point per cell (to be Agreed) in accordance with Condition 6.3.1  
And other selected locations as may be specified

Parameter	Monitoring Frequency			Analysis Method/Technique <sup>Note 2</sup>
	Boreholes and Cells	Facility Office	Sewer Discharge	
Methane (CH <sub>4</sub> )	Monthly	Continuous	Continuous	Infrared analyser/FID
Carbon dioxide (CO <sub>2</sub> )	Monthly	Continuous		Infrared
Oxygen (O <sub>2</sub> )	Monthly	Continuous	Continuous	Electrochemical cell
Atmospheric pressure & Trend	Monthly	Continuous		Standard method
Temperature	Monthly	Continuous		

**Note 1:** All perimeter monitoring boreholes must be installed to the standards specified in the Agency Guidance on Landfill Monitoring.

**Note 2:** Or other method agreed.

**C.2.1 Control of Emissions to Water**

**Emission Control Location:** Surface Water Lagoon(s)

**Description of Treatment:** Sedimentation

Control Parameter	Monitoring	Key Equipment <sup>Note 1</sup>
Residence time & Flow restriction	Flow rate, depth	Flow meter, overflow alarm, emergency storage

**Note 1:** The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

**C.2.2 Monitoring of Emissions to Water**

**Emission Point Reference No.:** Outlet(s) from Surface Water Lagoon(s), unless otherwise agreed by the Agency.

PARAMETER <sup>Note 1</sup>	SURFACE WATER Monitoring Frequency
Visual Inspection/Odour <sup>Note 2</sup>	Daily
Lagoon Level	Daily
Dissolved Oxygen	Daily
Electrical Conductivity	Daily
Ammonia (as NH <sub>4</sub> )	Weekly
Chloride	Weekly
PH	Weekly
Total Suspended Solids	Weekly
BOD	Quarterly
COD	Quarterly
Metals / non metals <sup>Note 3</sup>	Annually
List I/II organic substances (Screen) <sup>Note 4</sup>	Annually
Mercury	Annually
Sulphate (SO <sub>4</sub> )	Annually
Nitrate	Annually
Total P/orthophosphate	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually

**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, additional samples should be analysed and the full suite of parameters shown tested.

**Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

**Note 4:** 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 (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

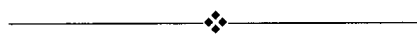


**C2.3 LEACHATE MONITORING**

**Location:** Leachate Lagoon(s), Leachate Sumps and Leachate Monitoring Points in the Cells as shown on Drawing No: DG0152-02 Rev. F01 *Existing and Proposed Leachate Management System* of the Article 14 reply received 9/8/04, unless otherwise agreed by the Agency. Additional leachate monitoring points to be installed in accordance with Condition 6.2.1.

<b>PARAMETER</b> <sup>Note 1</sup>	<b>LEACHATE</b> <sup>Note 2</sup> <b>Monitoring Frequency</b>
Visual Inspection/Odour	Daily
Leachate Level	Weekly
BOD	Quarterly
COD	Quarterly
Chloride	Annually
Ammoniacal Nitrogen	Annually
Electrical Conductivity	Annually
Ph	Annually
Metals / non metals <sup>Note 3</sup>	Annually
Cyanide (Total)	Annually
Fluoride	Annually
List I/II organic substances <sup>Note 4</sup>	Annually
Mercury	Annually
Sulphate	Annually
Total P/orthophosphate	Annually
Total Oxidised Nitrogen	Annually

- Note 1:** All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures.
- Note 2:** Visual Inspection and Leachate Levels to be monitored at all leachate monitoring points in the cells, Collection sumps and holding tank. Leachate composition to be monitored at the leachate holding tank.
- Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.
- Note 4:** 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 (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).



**C.3.1 Control of Emissions to Sewer**

**There are no Process Effluent Emissions to Sewer.**



**C.3.2 Monitoring of Emissions to Sewer**

**There are no Process Effluent Emissions to Sewer.**

#### C.4 Waste Monitoring

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

#### C.5 Noise Monitoring

##### Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) <sub>EQ</sub> [30 minutes]	Annual	Standard <sup>Note 1</sup>
L(A) <sub>10</sub> [30 minutes]	Annual	Standard <sup>Note 1</sup>
L(A) <sub>90</sub> [30 minutes]	Annual	Standard <sup>Note 1</sup>
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard <sup>Note 1</sup>

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

#### C.6 Ambient Monitoring Air Monitoring

##### Location:

DSP 1, DSP 2, DSP 3 and DSP4 as shown on Drawing No. DG0150-01 Rev. F01 *Site Location Map and Site Survey Including Dust Monitoring Points* and additional dust monitoring points in accordance with Condition 6.18, unless otherwise agreed by the Agency.

Parameter	Monitoring Frequency	Analysis Method/Technique
Dust deposition	Three times a year <sup>Note 1</sup>	Bergerhoff <sup>Note 2</sup>

Note 1: Twice during the period May to September, or as otherwise specified in writing by the Agency.

Note 2: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute).

### C.7 Groundwater Monitoring

**Location:** Groundwater Wells GW5, GW6, GW9, GW10, GW11, GW12, BH3, unless otherwise agreed by the Agency.

The groundwater collection drainage layer at locations to be agreed by the Agency.  
Private wells in accordance with Condition 6.4.2, unless otherwise agreed by the Agency.

PARAMETER <sup>Note 1</sup>	GROUNDWATER Monitoring Frequency
Visual Inspection/Odour <sup>Note 2</sup>	Monthly
Groundwater Level (wells)	Monthly
Dissolved Oxygen	Monthly
Electrical Conductivity	Monthly
Ammoniacal Nitrogen	Monthly
Chloride	Monthly
pH	Monthly
Sulphate (SO <sub>4</sub> )	Monthly
Metals / non metals <sup>Note 3</sup>	Annually
List I/II organic substances (Screen) <sup>Note 4</sup>	Annually
Mercury	Annually
Nitrate	Annually
Total P/orthophosphate	Annually
Faecal Coliforms	Annually
Total Coliforms	Annually

**Note 1:** Where appropriate 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, additional samples should be analysed and the full suite of parameters shown tested.

**Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

**Note 4:** 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 (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).



### C.8 Receiving Water Monitoring

**Location:** SW1, SW2, SW3, SW4 and SW6, unless otherwise agreed by the Agency.

Parameter	Monitoring Frequency	Analysis Method/Technique
Biological Quality (Q) Rating/Q Index	Annually <sup>Note 1</sup>	To be agreed by the Agency
Parameters in Table C2.2	Visual Inspection Weekly All others Quarterly unless specified as Annually in Table C2.2	Standard Methods

**Note 1:** Monitoring period - June to September. The location of the monitoring points for biological quality monitoring to be agreed by the Agency.



**C.9 Meteorological Monitoring**

**Location :** At the facility at a location to be agreed, or from an agreed representative station in the region.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Direction	Daily	Standard
Wind Force <sup>Note 1</sup>	Daily	Standard
Atmospheric Pressure <sup>Note 1</sup>	Daily	Standard
Evaporation	Daily	Standard
Atmospheric humidity (14.00 hCET)	Daily	Standard

**Note 1:** Monitoring frequency for these parameters may be decreased with the agreement of the Agency.



**SCHEDULE D: Specified Engineering Works**

Specified Engineering Works
Development of the facility including preparatory works and lining.
Final capping.
Installation of construction and demolition waste recovery area.
Installation of composting facility.
Installation of Landfill Gas Management Infrastructure.
Installation of Leachate Management Infrastructure.
Installation of Groundwater Control Infrastructure.
Installation of Surface Water Management Infrastructure.
Any other works notified in writing by the Agency.



## SCHEDULE E: Reporting

Completed reports shall be submitted to:

The Environmental Protection Agency  
Office of Environmental Enforcement  
Regional Inspectorate  
John Moore Road  
Castlebar  
County Mayo

or Any other address as may be specified by the Agency

Reports are required to be forwarded as required in the licence and as may be set out below:

Report	Reporting Frequency <sup>Note 1</sup>	Report Submission Date
Annual Environment Report (AER)	Annually	By 31 <sup>st</sup> March of each year.
Notification of waste loads not meeting waste acceptance criteria	As they occur	As per Condition 11.13
Compliance with waste diversion targets	As required by the Agency	As per Condition 11.17
Record of incidents	As they occur	Within five days of the incident.
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.
Dust Monitoring	Three times a year	Ten days after end of the period being reported on.
Noise Monitoring	Annually	As part of the AER.
Drawing with Monitoring locations	-	Any amendments to be submitted as part of the AER.
Schedule of Objectives & Targets	-	To be submitted as part of the AER.
Phased Construction Plan	-	Three months prior to commencement of any site development.

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

## SCHEDULE F: Standards for Compost Quality

The following criteria are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH<sub>4</sub>-N, NO<sub>3</sub>-N, pH and dry matter content should also be measured.

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

### 1. Maturity

Compost shall be deemed to be mature if it meets two of the following requirements:

- C/N ratio  $\leq 25$
- respiration activity after four days AT<sub>4</sub> is  $\leq 10\text{mg/O}_2/\text{g}$  dry matter or Dynamic Respiration Index is  $\leq 1,000\text{mgO}_2/\text{kg VS/h}$ ; and
- germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90 percent of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample.
- Elimination of the following test organisms (used to evaluate composting system efficiency in removing plant pathogens and weed seeds during the composting process): Plasmodiophora brassicae, tobacco-mosaic-virus (TMV) and tomato seeds.

Guidance on test may be obtained from the German document LAGA M10 'Quality Criteria and Application Recommendations for Compost'.

### 2. Foreign Matter

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

Foreign matter content as a percentage of oven-dried mass	$\leq 1.5\%$
Foreign matter, maximum dimensions, in mm	25

### 3. Trace Elements

Maximum Trace Element Concentration Limits for Compost<sup>Note 2</sup>

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

**Note 1:** Monitoring of these parameters required if waste from an industrial source.

**Note 2:** The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

#### 4. Pathogens

Pathogenic organism content must not exceed the following limits:

- Escherichia coli  $\leq 1,000$  CFU/g
- Salmonella species absent in 25 g sample.

#### 5. Monitoring

The licensee shall submit to the Agency for its agreement, prior to commencement of compost operations, details of methods of analyses, methods of sampling and sample numbers.

The analyses shall be carried out:

- (i) every six months for plants producing more than 500 and up to 1 000 tonnes of treated biowaste per year;
- (ii) at intervals of at least every 1 000 tonnes of treated biowaste produced or every 3 months, whichever comes first, for plants producing more than 1 000 and up to 10 000 tonnes of treated biowaste per year;
- (iii) every month for plants producing more than 10 000 tonnes of treated biowaste per year.



## SCHEDULE G: Annual Environmental Report

### Annual Environmental Report Content<sup>Note 1</sup>

Emissions from the facility.  
 Waste management record.  
 Waste (sludge) analysis.  
 Waste Recovery Report.  
 Topographical survey.  
 Remaining void, projected completion date.  
 Resource consumption summary.  
 Complaints summary.  
 Schedule of Environmental Objectives and Targets.  
 Updates to Landfill environmental Management Plan (LEMP)  
 Environmental management programme – report for previous year.  
 Environmental management programme – proposal for current year.  
 Pollution emission register – report for previous year.  
 Pollution emission register – proposal for current year.  
 Noise monitoring report summary.  
 Meteorological data summary.  
 Ambient monitoring summary.  
 Current monitoring location reference drawing.  
 Tank and pipeline testing and inspection report.  
 Reported incidents summary.  
 Energy efficiency audit report summary.  
 Report on progress made and proposals being developed to minimise water demand and the volume of trade effluent discharge.  
 Report on progress made and proposals being developed to minimise generation of leachate for disposal.  
 Development/Infrastructural works summary (completed in previous year or prepared for current year).  
 Report on management and staffing structure of the facility.  
 Report on the programme for public information.  
 Reports on financial provision made under this licence.  
 Statement on the costs of Landfill.  
 Review of Environmental Liabilities.  
 Any amendments to the CRAMP.  
 Detailed statement, with mass balance, of construction and demolition wastes used in construction.  
 Statement of compliance of facility with any updates of the relevant Waste Management Plan  
 Statement on the achievement of the waste acceptance and treatment obligations  
 Any other items specified by the Agency.

**Note 1:** Content may be revised subject to the agreement of the Agency.





**Sealed by the seal of the Agency on this the ... day of September 2009**

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

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**...., Director**

