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County Wexford, Ireland

WASTE LICENCE

PROPOSED DECISION

Waste Licence	161-1
Register Number:	
Applicant:	Cork County Council
Location of Facility:	Bottlehill, Toreen South, Coom (Hudson), Coom (Fitzgerald), Glashaboy North, Bottlehill, County Cork.

INTRODUCTION

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

The Proposed Decision is for the development on a green-field site in a commercial forestry of a new landfill facility for the Cork region at Bottlehill Co. Cork. The landfill which will have a footprint of approximately 45.8 hectares in area will accept municipal waste in eight distinct phases, each consisting of 5 cells. The landfill will accept a total of approximately 5.3 million tonnes of waste for disposal over its lifespan. Trees in each of the eight phases will be felled prior to the development of the phase. After filling each phase will be temporarily capped and seeded and final capping will be installed within 12 months. The landfilled area will be surrounded by a buffer zone of forestry. There is a clay borrow area within the site boundary which will be used to extract clay for site development, cover and restoration purposes.

Infrastructure for the active collection of landfill gas will be installed along with the final capping system. Waste will be delivered to the site in appropriate heavy commercial vehicles only, both in baled and unbaled form and the landfill will not generally be used by members of the public. There is no provision for a civic waste facility at the site. Some inert material will be permitted to be accepted for the purposes of landfill cover and restoration. Other infrastructure includes a lining system, leachate collection and management infrastructure, an administration building, laboratory facilities, weighbridges, site security, car parking facilities etc. The anticipated lifespan of the facility is 20 years.

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

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DECISION & REASONS FOR THE DECISION

The Environmental Protection Agency (the Agency) is satisfied, on the basis of the information available, that the requirements of Section 40(4) of the Waste Management Act, 1996 have been complied with in respect of the application for a waste licence for the activities listed hereunder in Part I.

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

Part I Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Agency proposes, under Section 40(1) of the said Act to grant this Waste Licence to Cork County Council to carry on the waste activities listed below at Tooreen South, Coom (Hudson), Coom (Fitzgerald), Glashaboy North, Bottlehill, County Cork subject to twelve conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

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

Class 4.	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons: This activity is limited to the collection and storage of leachate prior to tankering offsite for treatment; the collection and discharge of stormwater to and from surface water lagoons, via oil interceptors and settlement tanks; the collection and discharge of clean surface water runoff via surface water lagoons.
Class 5.	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment. This is the principal activity. This activity is limited to the following: the construction of the landfill in distinct phases consisting of cells with a lining system consisting of HDPE and low permeability clay; landfilling into these phases; capping of these cells and phases, once filled; landfill gas collection, flaring and utilisation; and landscaping and restoration of the site.
Class 13.	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced. This activity is limited to the temporary storage of baled waste at the baled waste marshalling yard in sealed containers prior to haulage to the working face of the landfill.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Act 1996

Class 4.	Recycling or reclamation of other inorganic materials: This activity is limited to the use for the purposes of daily landfill cover and construction works of inert material and material reclaimed from construction and demolition waste.
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INTERPRETATION

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

Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
Annually	At approximately twelve monthly intervals.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
Condition	A condition of this licence.
Construction and Demolition Waste	All wastes which arise from construction, renovation and demolition activities.
Containment boom	A boom which can contain spillages and prevent them from entering drains or watercourses.
Cover material	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed with the Agency.
Daily Cover	Is the term used to describe material spread (about 150mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible
Daytime	8.00 a.m. to 10.00 p.m.
Documentation	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
Emergency	Those occurrences defined in Condition 9.4
Emission Limits	Those limits, including concentration limits and deposition levels established in <i>Schedule C: Emission Limits</i> , of this licence.
E.I.S.	Environmental Impact Statement
European Waste	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 94/3/EC and any

Catalogue (EWC)	subsequent amendment published in the Official Journal of the European Community.
Hours of Operation	The hours during which the facility is authorised to be operational. The hours of operation of a facility are usually longer than the hours of waste acceptance to facilitate preparatory and completion works, such as the removal and placing of daily cover.
Hours of Waste Acceptance	The hours during which the facility is authorised to accept waste.
Inert waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
Intermediate Cover	Refers to placement of material (minimum 300mm if soil is used) for a period of time prior to restoration or prior to further disposal of waste.
Landfill	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
Landfill Gas	Gases generated from the landfilled waste.
Licence	A Waste Licence issued in accordance with the Act.
Licensee	Cork County Council.
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the facility.
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Night-time	10.00 p.m. to 8.00 a.m.
Non-hazardous Asbestos Waste	Includes bonded asbestos, such as tiles, which are not classified as hazardous waste and which are authorised for disposal at the facility.
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc, which may be recycled
Quarterly	At approximately three monthly intervals.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
SCADA system	Supervisory Control and Data Acquisition system
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 15% and 25% dry matter.

Specified Emissions	Those emissions listed in <i>Schedule C: Emission Limits</i> of this licence.
Specified Engineering Works	Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> of this licence.
Trigger Level	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
EPA Working Day	Refers to the following hours; 9.00 a.m. to 5.30 p.m. Monday to Friday inclusive.
Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

PART III CONDITIONS

CONDITION 1 SCOPE OF THE LICENCE

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2. For the purposes of this licence, the facility is the areas of land outlined in red on Drawing No. 0013011/01/502 entitled 'Site Plan' of the application or Figure 2 of the Environmental Impact Statement Non-technical summary, also entitled 'Site Plan'. Any reference in this licence to "facility" shall mean the area thus outlined in red.
- 1.3. This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.4. Municipal Waste, Commercial Waste and Industrial Waste may be disposed of at the facility subject to the maximum quantities and other constraints listed in Schedule A.
- 1.5. Waste Acceptance
 - 1.5.1 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility from 16th July 2003. Shredded tyres shall not be disposed of at the facility from 16th July 2006.
 - 1.5.2 No hazardous waste, liquid waste or sludges shall be disposed of at the facility.

The licensee shall ensure that all waste accepted at the facility is subject to treatment. This provision may not apply to inert wastes for which treatment is not technically feasible nor to any 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.
- 1.6. Waste Acceptance Hours and Hours of Operation
 - 1.6.1 Waste shall only be accepted at the facility for disposal at the landfill between the hours of 8.30am and 5.45pm Monday to Friday inclusive and 8.30am to 2.45pm on Saturdays.
 - 1.6.2 The landfill at the facility shall only be operated during the hours of 8.00am and 6.30pm Monday to Friday inclusive and 8.00am to 3.30pm on Saturdays.
 - 1.6.3 Waste shall not be accepted at the landfill on Bank Holidays.
- 1.7. The following shall constitute an incident for the purposes of this licence:
 - a) an emergency;
 - b) any emission which does not comply with the requirements of this licence;
 - c) any trigger level specified in this licence which is attained or exceeded; and
 - d) any indication that environmental pollution has, or may have, taken place.
- 1.8. Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying:

- 1.8.1. That only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice;
- 1.8.2. That the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice; and
- 1.8.3. That the licensee shall carry out any other requirement specified in the notice.

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

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

REASON: To clarify the scope of this licence.

CONDITION 2 MANAGEMENT OF THE FACILITY

2.1 Facility Management

- 2.1.1 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced, deputy shall be present on the facility at all times during its operation.
- 2.1.2 Both the facility manager and deputy, and any replacement manager or deputy, shall successfully complete both the FAS waste management training programme (or equivalent agreed with the Agency) and associated on site assessment appraisal within twelve months of appointment.
- 2.1.3 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience, as required and shall be aware of the requirements of this licence.

2.2 Management Structure

- 2.2.1 Prior to the commencement of waste activities the licensee shall submit written details of the management structure of the facility to the Agency. Any proposed replacement in the management structure shall be notified in advance in writing to the Agency. Written details of the management structure shall include the following information
 - a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence, in particular the name of the facility manager and any nominated deputies;
 - b) details of the responsibilities for each individual named under a) above; and
 - c) details of the relevant education, training and experience held by each of the persons nominated under a) above.

2.3 Environmental Management System (EMS)

- 2.3.1 The licensee shall establish and maintain an EMS. At least three months prior to the commencement of waste activities, the licensee shall submit to the Agency for its agreement a proposal for a documented Environmental Management System (EMS) for the facility. Following the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

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

2.3.2.1 Schedule of Environmental Objectives and Targets

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

2.3.2.2 Environmental Management Plan (EMP)

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

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

2.3.2.3 Corrective Action Procedures

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

2.3.2.4 Awareness and Training Programme

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

2.4 Communications Programme

- 2.4.1 The licensee shall establish and maintain a Communications Programme to ensure that members of the public can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility. This programme shall be established prior to the commencement of waste activities.

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

CONDITION 3 FACILITY INFRASTRUCTURE

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

3.2 Specified Engineering Works

- 3.2.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule B: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.
- 3.2.2 All specified engineering works shall be supervised by a competent person(s) and that person, or persons, shall be present at all times during which relevant works are being undertaken.
- 3.2.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall include the following information;
 - a) a description of the works;
 - b) as-built drawings of the works;

- c) records and results of all tests carried out (including failures);
- d) drawings and sections showing the location of all samples and tests carried out;
- e) daily record sheets/diary;
- f) name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
- g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
- h) records of any problems and the remedial works carried out to resolve those problems; and
- i) any other information requested in writing by the Agency.

3.3 Facility Notice Board

3.3.1 The licensee shall provide and maintain a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.

3.3.2 The board shall clearly show:

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

3.4 Facility Security

3.4.1 Effective security and stockproof fencing and gates shall be installed and maintained at the facility, as agreed in advance with the Agency.

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

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

3.5 Facility Roads and Hardstanding

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

3.6 Facility Office

3.6.1 The licensee shall provide and maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.

3.6.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.

3.7 Waste Inspection and Quarantine Areas

- 3.7.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.
- 3.7.2 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.
- 3.7.3 Drainage from these areas shall be directed to a sump and pumped to a leachate storage lagoon.
- 3.8 Weighbridge
- 3.8.1 The licensee shall provide and maintain two weighbridges at the facility.
- 3.9 Wheel Cleaning
- 3.9.1 The licensee shall establish and maintain a wheelwash/dry wheel shake at the facility.
- 3.10 Waste Water Treatment Plant
- 3.10.1 The licensee shall provide and maintain a Wastewater Treatment plant at the facility for the treatment of wastewater arising on-site. The percolation area shall satisfy the criteria set out in the Wastewater Treatment Manual, *Treatment Systems for Single Houses*, published by the Environmental Protection Agency.
- 3.11 Tank and Drum Storage Areas
- 3.11.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.
- 3.11.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:
- (a) 110% of the capacity of the largest tank or drum within the bunded area; or
 - (b) 25% of the total volume of substance which could be stored within the bunded area.
- 3.11.3 All drainage from bunded areas shall be diverted for collection and safe disposal.
- 3.11.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.11.5 The integrity and water tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency following its installation and prior to its use as a storage area.
- This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.
- 3.12 Landfill Lining:
- 3.12.1 The landfill liner shall comprise:
- (i) a composite liner consisting of a 1.0m layer of compacted soil with a hydraulic conductivity of less than or equal to 1×10^{-9} m/s, overlain by an appropriate geocomposite layer such as bentomat, or equivalent as agreed with the Agency and which in turn is 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 1×10^{-3} m/s, of pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size) incorporating leachate collection drains;
- (iv) the side walls shall be designed and constructed to achieve an equivalent protection.

3.12.2 The liner detailed design and its construction shall be in accordance with the guidelines provided in the Agency's Landfill Manual, Landfill Site Design.

3.12.3 Existing ground level shall not be lowered/excavated in order to reach formation level.

3.13 Buffer Zone

3.13.1 A Buffer Zone, in which no waste shall be landfilled shall be provided and maintained within the facility. The Buffer Zone shall be located as shown in green on Drawing No. 0013011/01/502.

3.13.2 The existing forestry in the buffer zone shall be managed to maximise biodiversity and habitat areas of importance to the hen harrier and, if necessary enhanced to minimise the views of the facility from the surrounding countryside.

3.13.3 The buffer zone should be identified prior to the commencement of tree felling to ensure that the buffer zone is not clear felled. A surveyor should be present during tree felling to ensure that felling does not extend into the buffer zone.

3.14 Leachate Management Infrastructure

3.14.1 Leachate management infrastructure shall be provided and maintained at the facility as described in Sections 3.7.7, 3.7.8 and 3.7.9 of the Environmental Impact Statement and as shown in drawings referred to therein.

3.14.2 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping and shall be fully roofed to prevent the ingress of rain.

3.15 Landfill Gas Management

3.15.1 Effective infrastructure shall be provided and maintained at the facility for the collection and flaring of landfill gas for each cell upon final capping, subject to Condition 5.8.6.

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

3.15.2 Until the operation of the landfill gas flare, passive landfill gas management at the facility shall be carried out. Landfill gas management and infrastructure shall meet the recommendations given in the Agency Manual on "Landfill Operational Practices".

3.15.3 The landfill gas flare shall be of an enclosed type design and the combustion air supply shall be controlled so as to achieve a minimum temperature of 1,000°C and 0.3 seconds retention time at this temperature. The design and operation of the landfill gas flare shall be agreed in advance with the Agency.

3.15.4 Flares should be maintained in accordance with the manufacturers recommendations. Full records should be available for inspection at the facility.

3.15.5 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.

- 3.15.6 The licensee shall maintain all gas wells, pipework, valves, pumps, flares and other infrastructure that form part of the landfill gas management scheme in a safe and fully operational manner.
- 3.15.7 Perimeter landfill gas monitoring boreholes shall be constructed at 45m intervals around the periphery of the landfill footprint. The construction of the boreholes shall be phased so as to match the phased development of cells.
- 3.15.8 Within twelve months of the date of commencement of waste activities the licensee shall submit an assessment of whether the utilisation of landfill gas as an energy resource is feasible. If feasible such a system shall be installed within a timeframe agreed with the Agency. This assessment shall include proposals regarding the utilisation of heat energy from this plant.

3.16 Surface Water Management

- 3.16.1 The surface water management infrastructure described in Section 3.3.11 of the E.I.S. and as illustrated in Drawing No. 0013011/01/536 shall be provided and maintained at the facility.
- 3.16.2 The surface water lagoons and surface water management infrastructure shall be constructed and operational prior to the commencement of any other construction works or excavation of the clay borrow area.
- 3.16.3 The licensee shall ensure protection of the surface water resources within and adjacent to the facility, including the clay borrow area during construction of the surface water management infrastructure and surface water lagoons. During construction works silt fences must be provided in all drainage channels to prevent erosion of soil and sediment into the stream.
- 3.16.4 With regard to the clay borrow area, the mitigation measures outlined in Section D.1.k/H.9 of the response to the Article 14 notice, dated 23/11/01 and section 3.12.1 of the E.I.S shall be undertaken at the facility.
- 3.16.5 The oil interceptors to be used in the surface water drainage system shall be Class 1 interceptors.
- 3.16.6 All surface water runoff discharging to the surface water lagoons, including that from capped cells and lined but unfilled cells shall discharge to the lagoons via settlement tanks.

3.17 Groundwater Management

- 3.17.1 Effective groundwater management infrastructure shall be provided and maintained at the facility during construction, operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall be capable of the following:
 - a) the protection of the groundwater resources from pollution by the waste activities; and
 - b) the protection of other infrastructure, such as the liner, from any adverse effects caused by the groundwater.

3.18 External Access Road

- 3.18.1 No facility development shall be carried on at the facility until such time as the road improvements as described in Section 4.8 of the E.I.S., or equivalent works, are carried out on any road to be used by heavy vehicles either approaching the landfill from the N20, or leaving the landfill. The licensee shall consult with the relevant authority on

the necessary improvements in road signage and road safety and carry out any works recommended.

- 3.18.2 No facility development shall be carried on at the facility until such time as a Road Safety Audit had been carried out at the Lissavoura Cross junction on the N20 and any other junction on the N20 to be used by heavy vehicles either approaching the landfill from the N20, or leaving the landfill. The licensee shall consult with the relevant authority on the necessary improvements in road signage and road safety and carry out any works recommended.
- 3.18.3 Traffic awaiting access to the landfill shall queue along the facility site access road only, and not along the public road.

3.19 Telemetry

A telemetry system shall be installed and maintained at the facility. This system shall include for:

- a) Recording of leachate levels in the lined cells and lagoon.
- b) Recording of levels in the surface water lagoon and flows to the perimeter streams.
- c) Quality of the surface water at the inlet to and outlet from the surface water lagoons.
- d) Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility. All landfill gas monitoring equipment, other than permanent monitoring systems within buildings, shall be certified as being intrinsically safe.

3.20 Laboratory Facilities

Laboratory facilities as described in Section 3.3.6 of the E.I.S. shall be installed at the facility.

3.21 Replacement of Infrastructure

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

REASON: To provide appropriate infrastructure for the protection of the environment.

CONDITION 4 RESTORATION AND AFTERCARE

- 4.1. Within 18 months of the date of grant of the licence the licensee shall submit a detailed Restoration and Aftercare Plan for the facility. The Restoration and Aftercare Plan for the facility shall incorporate the plan submitted as E.I.S. section 3.10, and shall refer to the phased restoration of the facility and the clay borrow area. Where appropriate the proposed planting scheme shall investigate opportunities for the planting of heather typical of the heathland communities found in the Nagle Mountains, a botanist shall be consulted in this regard.
- 4.2. The final profile of the facility shall be as shown in Drawing No. 0013011/01/523 (Malin).
- 4.3. Final Capping
- 4.3.1. The final capping shall consist of the following:

- a) top soil (150 -300mm);
 - b) subsoils, such that total thickness of top soil and subsoils is at least 1m;
 - c) drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s, or equivalent geosynthetic drainage layer;
 - d) compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-9} m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and
 - e) gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 4.4. No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels
- 4.5. Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.
- 4.6. Soil Storage
- 4.6.1. All soils shall be stored to preserve the soil structure for future use.
 - 4.6.2. The quantity of inert material accepted at the facility and stockpiled for the purposes of construction and restoration, should at any given time be no greater than that which will be required and utilised over the following three-month period.

REASON: To provide for the restoration of the facility

CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT

- 5.1 Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.2 Waste Treatment
- 5.2.1 The licensee shall ensure that inert waste accepted at the facility is subject to treatment where technically feasible.
 - 5.2.2 Inert material from the clay borrow area and that excavated during the development of the facility may be used for the restoration of the facility.
- 5.3 Waste Acceptance and Characterisation Procedures
- Prior to commencement of waste acceptance at the facility, the licensee shall submit to the Agency for its agreement written procedures for the acceptance and handling of all wastes. These procedures shall include details of the pre-treatment of all waste to be carried out prior to acceptance at the facility.
- 5.4 All wastes shall be checked at the working face. Any wastes not suitable for acceptance shall be removed for recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area only. No waste shall be stored in the Waste Quarantine Area for more than three months.
- 5.5 Working Face

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

- a) only one working face shall exist at the landfill at any one time for the deposit of loose waste other than the deposit of cover or restoration materials;
- b) only one working face shall exist at the landfill at any one time for the deposit of baled waste other than the deposit of cover or restoration materials;
- c) the working face for the deposit of loose waste shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3.
- d) Prior to the commencement of waste activities the licensee shall submit a report to the Agency for its agreement as to the size of the working face for the deposit of baled waste.
- e) All waste deposited at the working face(s) shall be compacted, using a steel wheeled compactor, and covered with suitable material as soon as is practicable and at any rate prior to the end of the working day.

5.6 Daily and Intermediate Cover

5.6.1 Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.

5.7 Landscaping

Landscaping of the facility as described in the E.I.S. Section 4.5.3 shall be carried out. Landscaping works shall, taking cognisance of the planting season commence within 12 months of the date of grant of this licence.

5.8 Operational Controls

5.8.1 Unless otherwise agreed with the Agency the landfill shall be filled in accordance with the eight phase sequence outlined in Section 3.4 of the E.I.S.

5.8.2 As a minimum, the proportion of waste to be accepted at the facility in baled form shall be as described in Section 3.1.2 of the E.I.S, unless otherwise agreed by the Agency.

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

5.8.4 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over unless otherwise agreed in advance with the Agency.

5.8.5 Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials

5.8.6 Filled cells shall be permanently capped within twelve months of the cells having been filled to the required level.

5.8.7 Scavenging shall not be permitted at the facility.

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

- 5.8.9 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.8.10 Fuels shall only be stored at appropriately banded locations on the facility.
- 5.8.11 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.8.12 No smoking shall be allowed on the facility other than in the administration building.

5.9 Waste Handling

5.9.1 Inert Waste

Inert waste accepted at the facility from outside the facility shall comply with the standards established in *Schedule F: Criteria for the Acceptance of Inert Waste*, of this licence. Analysis of such waste shall be in accordance with the requirements of that Schedule.

5.9.2 Non-hazardous Asbestos Waste

- 5.9.2.1 Only non-hazardous asbestos waste shall be disposed of at the facility.
- 5.9.2.2 Non-hazardous asbestos based construction and demolition waste must be double wrapped in heavy gauge plastic which is clearly labelled to indicate the presence of asbestos.
- 5.9.2.3 Disposal of non-hazardous asbestos waste shall be into prepared bays or trenches of at least 2 metres in depth.
- 5.9.2.4 Deposited non-hazardous asbestos waste shall be covered immediately with at least 250mm of suitable material. At the end of the day, the waste shall be covered with a minimum of 500mm of suitable material.
- 5.9.2.5 No hazardous asbestos waste shall be present within 2.5 metres of the final surface levels.

5.10 Off-site Disposal and Recovery

- 5.10.1 Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor agreed by the Agency;
- 5.10.2 All waste transferred from the facility shall only be transferred to an appropriate facility agreed by the Agency;
- 5.10.3 All wastes removed off-site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.

5.11 Leachate Management

- 5.11.1 Leachate levels in the waste shall not exceed a level of 1m over the top of the liner at the base of the landfill.
- 5.11.2 The level of leachate in the pump sumps, in the filled waste and in the leachate holding tanks shall be monitored continuously by a SCADA system which shall automatically activate leachate pumps to maintain leachate head at the required level.
- 5.11.3 The SCADA system shall be linked to an automatic level alarm in the administration building, and at another location outside the site when the administration building is unmanned.

- 5.11.4 The frequency of leachate removal/discharge from the leachate storage tanks shall be such that a minimum of 0.75m freeboard shall be maintained in the leachate storage tanks at all times.
- 5.11.5 Leachate stored in the leachate storage tank shall be disposed of by tankering off-site in fully enclosed road tankers.
- 5.11.6 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency.
- 5.11.7 Prior to the acceptance of waste at the facility the licensee shall submit to the Agency a report confirming that; (a) the necessary works to upgrade the Mallow Wastewater Treatment Plant as indicated in the Art 16 reply dated January 2002 of the application, have been carried out and that (b) the Mallow Wastewater Treatment Plant is capable of treating the leachate to appropriate standards.
- 5.11.8 Within twelve months of the date of grant of this licence the licensee shall submit to the Agency a feasibility study on the treatment of leachate on site.

5.12 Maintenance

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

5.13 Ecological Protection

- 5.13.1 The licensee shall, prior to the commencement of construction works at the facility and in consultation with Duchas, implement a programme to ensure the ongoing protection of the hen harrier and its *associated habitats including* nesting sites. This programme should include as a minimum:
 - (i) Training of all staff involved in the construction, development and operation of the facility prior to the commencement of their duties, with regard to the hen harrier, its nesting location(s) and measures in place/ to be put in place to minimise effects of the development on the species.
 - (ii) Identification of the nesting site(s) and a protection zone surrounding the nesting site(s). Any fencing, signage or demarcation used for this purpose should be compatible with the protection of the species.
 - (iii) The implementation of mitigation measures with regard to the hen harrier as proposed in the E.I.S. Section 4.6.2.

Any relevant authorisation from Duchas should be obtained.

- 5.13.2 The licensee shall, prior to the commencement of tree felling consult with the Forestry Section of the Department of the Marine and Natural Resources in relation to tree

felling. The felling of trees shall only be undertaken outside the breeding season (May - July) for birds. The nesting sites for owls and birds of prey shall be fully protected.

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

CONDITION 6 EMISSIONS

- 6.1. No specified emission from the facility shall exceed the emission limit values set out in *Schedule C: Emission Limits* of this licence. There shall be no other emissions of environmental significance.
- 6.2. The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 6.3. Landfill Gas
- 6.3.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:
- a) Methane, greater than or equal to 1.0% v/v; and
 - b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 6.3.2. The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-
- in the case of landfill gas flare:
- Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and
- 6.3.3. Emission limits for landfill gas combustion products emissions to atmosphere in this licence shall be interpreted in the following way:-
- 6.3.3.1. Continuous monitoring
- (i) No 24 hour mean value shall exceed the emission limit value.
 - (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
 - (iii) No 30 minute mean value shall exceed twice the emission limit value.
- 6.3.3.2. Non-Continuous Monitoring
- (i) For any parameter where, due to sampling/analytical limitations, a 30 minute samples is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
 - (ii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.

(iii) For flow, no hourly or daily mean value shall exceed the emission limit value.

6.4. Emissions to Surface Water

- 6.4.1 No raw leachate, treated leachate or contaminated water shall be discharged to surface water.
- 6.4.2 No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.
- 6.4.3 Within three months of the date of grant of the licence the applicant shall submit to the Agency for its agreement proposals for the monitoring of water entering surface water retention lagoons. These proposals shall include the criteria /trigger levels which will determine when the outlet from these ponds shall be closed. Such monitoring shall, as a minimum, include conductivity, pH and TOC and shall be carried out on the inlet to the stormwater/surface water retention lagoons.

6.5. Emissions to Groundwater

- 6.5.1 There shall be no direct emissions to groundwater.
- 6.5.2 Prior to the acceptance of waste at the facility, the licensee shall submit to the Agency for its agreement, groundwater trigger levels in accordance with the requirements of Directive 1999/31/EC (ammonia, TOC and Chloride as a minimum).

6.6. Disposal of Leachate

- 6.6.1. No leachate shall be discharged to surface water.
- 6.6.2. All leachate or contaminated water tankered from the facility shall be transported for treatment to Mallow Waste Water Treatment Plant, or another treatment plant as agreed with the Agency.

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

CONDITION 7 NUISANCE CONTROL

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

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

7.3 Litter Control

- 7.3.1 The measures and infrastructure as described in Section 3.14.4 of the E.I.S. shall be applied to control litter at the facility.
- 7.3.2 Litter fencing shall be installed and maintained around the perimeter of the active tipping area prior to the disposal of any waste in any cell.
- 7.3.3 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows:

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

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

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

7.4 Dust Control

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

7.5 Prior to exiting the facility, all waste vehicles shall use the wheelwash.

7.6 Bird Control

Birds shall be prevented from gathering on and feeding at the facility. The use of birds of prey for this purpose is prohibited unless agreed in advance with the Agency. The techniques to be used for bird scaring shall be in place on the facility at least two weeks prior to any waste being disposed of and shall maintain their presence 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. The licensee shall ensure that the Bird Control Programme does not impact on the use of the lands adjoining the facility by the natural bird population. The use of gas operated bird scaring devices is prohibited at the facility.

7.7 Noise/Disturbance

The licensee shall ensure the following:

- That low sound level plant is used on site,
- That speed restrictions as agreed with the Agency are imposed on internal site roads,
- That all heavy machinery used on-site is fitted with acoustic panels in the engine bays and acoustic mufflers (exhaust silencers).

7.8 Survey/Consultation

The licensee shall propose, implement and report on an annual basis as part of the Annual Environmental Report measures to reduce the effects of traffic, associated with the facility between the N20 and the facility. Such recommendation should include, but are not restricted to speed restrictions, road surface design, vibration abatement and road safety audit.

REASON: To provide for the control of nuisances

CONDITION 8 MONITORING

8.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in *Schedule D: Monitoring* of this licence and as specified in this licence. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of this licence. Where monitoring infrastructure needs to be

installed environmental monitoring shall commence no later than two months after its installation.

- 8.2. The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.
- 8.3. Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.
- 8.4. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 8.5. Prior to the commencement of waste activities the following information shall be submitted to the Agency for its agreement: the names, qualifications and a summary of the relevant experience of all persons that will carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring. Any proposed changes to the above shall be submitted to the Agency for its agreement.
- 8.6. Prior to the commencement of waste activities the licensee shall submit to the Agency for its agreement appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing shall include the twelve figure National Grid Reference for the various monitoring points.
- 8.7. Noise Monitoring
 - 8.7.1. The licensee shall carry out noise monitoring as detailed in Schedule D, Tables D.1 and D.4.
- 8.8. Topographical Survey
 - 8.8.1. A topographical survey shall be carried out within six months of the date of grant of this licence. The survey shall include a measurement of the remaining available void space. It shall be repeated annually thereafter. The survey shall be in accordance with any written instructions issued by the Agency.
- 8.9. Biological Assessment
 - 8.9.1 A biological assessment of the surface water quality at monitoring locations as indicated in Table D.1.1 shall be undertaken within six months of the date of grant of this licence and every two years thereafter. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. The location of monitoring points shall be agreed with the Agency.
- 8.10. Ecological Assessment
 - 8.10.1. Ecological monitoring of the entire site, as referred to in Section 3.15.2 of the E.I.S. shall be carried out each year at the facility. The scope of the monitoring and the method of carrying out the monitoring should be decided in consultation with Duchas and agreed in advance with the Agency. The ecological monitoring shall include as a minimum an assessment of:
 - the status of the hen harrier population within the forestry site;
 - the effect of the construction, development and operation of the facility on the hen harrier population;
 - mitigation measures put in place with regard to the protection of the hen harrier;

- the habitat being used by the hen harrier
- the status of any protected species in the vicinity of the site.

8.10.2. A report on the ecological monitoring required above shall be submitted to the Agency each year as part of the Annual Environmental Report.

8.11. Archaeological Assessment

Prior to the development of any undisturbed area, the advice of Dúchas the Heritage Service shall be sought. On completion of such development a report of the results of any archaeological monitoring shall be submitted to Dúchas and to the Agency.

8.12. Stability Assessment

8.12.1. Within twelve months of the date of grant of this licence, and annually thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility.

8.13. Nuisance Monitoring

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

8.14 The licensee shall, within six months of the date of grant of this licence, develop and establish a Data Management System for collation, archiving, assessing and electronically presenting the environmental monitoring data generated as a result of this licence.

8.15 The licensee shall, prior to the commencement of waste activities and subject to the agreement of the landowners commence a programme for the representative monitoring of groundwater quality of private wells. The scope of this monitoring programme shall be agreed in advance with the Agency.

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

CONDITION 9 CONTINGENCY ARRANGEMENTS

9.1. In the event of an incident the licensee shall immediately:

- a) identify the date, time and place of the incident;
- b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
- c) isolate the source of any such emission;
- d) evaluate the environmental pollution, if any, caused by the incident;
- e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
- f) provide a proposal to the Agency for its agreement within one month of the incident occurring to:
 - i) identify and put in place measures to avoid reoccurrence of the incident; and

- ii) identify and put in place any other appropriate remedial action.
- 9.2. The licensee shall, prior to commencement of any waste activities, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment. This shall include a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities. The Fire Authority shall be consulted by the licensee during this assessment.
- 9.3. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.
- 9.4. Emergencies
- 9.4.1. All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects;
 - 9.4.2. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities;
 - 9.4.3. In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an emergency and the licensee shall provide an alternative supply of water to those affected;
 - 9.4.4. In the event that monitoring of the side slopes of the facility indicate that there may be a risk of slope failure this will be treated as an emergency.

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

CONDITION 10 RECORDS

- 10.1 The licensee shall keep the following documents at the facility office.
- a) the current waste licence relating to the facility;
 - b) the current EMS for the facility;
 - c) the previous year's AER for the facility;
 - d) all written procedures produced by the licensee which relate to the licensed activities.
- 10.2 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:
- a) the date;
 - b) the name of the carrier (including if appropriate, the waste carrier registration details);
 - c) the vehicle registration number;
 - d) the name of the producer(s)/collector(s) of the waste as appropriate;
 - e) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
 - f) a description of the waste including the associated EWC codes;
 - g) the quantity of the waste, recorded in tonnes

- h) the name of the person checking the load; and,
- i) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

10.3 Written Records

The following written records shall be maintained by the licensee:

- a) the types and quantities of waste recovered and disposed of at the facility each year. These records shall include the relevant EWC Codes;
- b) all training undertaken by facility staff;
- c) results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
- d) details of all nuisance inspections; and
- e) the names and qualifications of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring.

10.4 The licensee shall maintain a written record of all complaints relating to the operation of the facility. Each such record shall give details of the following:

- a) date and time of the complaint;
- b) the name of the complainant;
- c) details of the nature of the complaint;
- d) actions taken on foot of the complaint and the results of such actions; and,
- e) the response made to each complainant.

10.5 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:

- a) the name of the carrier;
- b) the date and time of removal of leachate from the facility;
- c) the volume of leachate, in cubic metres, removed from the facility on each occasion;
- d) the name and address of the Waste Water Treatment Plant to which the leachate was transported;
- e) any incidents or spillages of leachate during its removal or transportation.

10.6 A written record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. These records shall include as a minimum the following:

- a) the date and time during which spraying of insecticide is carried out;
- b) contractor details;
- c) contractor logs and site inspection reports;
- d) details of the rodenticide(s) and insecticide(s) used;
- e) operator training details;
- f) details of any infestations;

- g) mode, frequency, location and quantity of application; and,
- h) measures to contain sprays within the facility boundary.

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

CONDITION 11 REPORTS AND NOTIFICATIONS

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

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

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

- a) notify the Agency as soon as practicable and in any case not later than 10.00 a.m. the following working day after the occurrence of any incident;
- b) submit a written record of the incident, including all aspects described in Condition 9.1(a-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident; and
- c) in the event of any incident which relates to discharges to surface water, notify the South-Western Regional Fisheries Board as soon as practicable and in any case not later than 10:00 a.m. on the following working day after such an incident.
- d) Should any further actions be taken as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.

11.3 Waste Recovery Reports

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

- a) proposals for the contribution of the facility to the achievement of targets for the reduction of biodegradable waste to landfill, going to landfills as specified in the Landfill Directive;

- b) the recovery of Construction and Demolition Waste;
- c) inert waste to be used for cover/restoration material at the facility;
- d) the feasibility of using landfill gas as a fuel for on-site vehicles; and

11.4 Reports relating to Facility Operations

11.4.1. Leachate Handling Procedures

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

11.4.2. Achievement of Final Profile

11.4.2.1 Within eighteen months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, proposals for landfilling and restoration to achieve the final profile/height of the facility to the Agency for its agreement.

11.4.3. Operation in Adverse Weather Conditions

Prior to the commencement of waste activities the licensee shall submit to the Agency for its agreement proposals for the operation of the facility in adverse weather conditions.

11.5 Vermin and Flies

11.5.1. Prior to the commencement of waste activities the licensee shall submit to the Agency for its agreement a proposal for the control and eradication of vermin and fly infestations at the facility. This proposal should include as a minimum, operator training, details on the pesticide(s), rodenticide(s) and insecticide(s) to be used, mode and frequency of application and measures to contain sprays within the facility boundary and the measures as proposed in the E.I.S. section 4.6.2.2.

11.6 Annual Environmental Report

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

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

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

CONDITION 12 CHARGES AND FINANCIAL PROVISIONS

12.1 Agency Charges

- 12.1.1 The licensee shall pay to the Agency an annual contribution of €30,070 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2003 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2002, the licensee shall pay a pro rata amount from the date of this licence to 31st December. This amount shall be paid to the Agency within one month of the date of grant of this licence.
- 12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased the licensee shall contribute such sums as determined by the Agency to defraying its costs.

12.2 Financial Provision for Closure, Restoration and Aftercare

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

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

Where:

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

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

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

- 12.3 Prior to the commencement of waste activities the licensee shall submit a report to the Agency for agreement estimating the cost of closure and aftercare of the facility for a period of at least thirty years. Using this information the licensee should show how the cost of the landfill of waste will cover these closure and aftercare costs, in accordance with Article 10 of the Landfill Directive (1999/31/EC).

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

SCHEDULE A : Waste Acceptance

A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities for disposal

WASTE TYPE	MAXIMUM (TONNES PER ANNUM) YEAR 1	MAXIMUM (TONNES PER ANNUM) YEAR 2	MAXIMUM (TONNES PER ANNUM) YEAR 3	MAXIMUM (TONNES PER ANNUM) YEAR 4
Household	92,000	97,000	101,000	105,500
Commercial	61,000	64,000	67,000	70,000
Industrial	29,000	30,000	32,000	33,500
Street Cleaning	7,000	7,500	8,000	8,000
TOTAL	189,000	199,000	208,000	217,000

* Year 1 refers to the first full year of operation i.e. January to December. For any initial period of operation prior to the first full year a pro rata allowable annual tonnage will apply, with respect to the allowable tonnage for year one, from the date of commencement of waste activities to the 31st of December of that year. Year 2 refers to the second full year of operation and so on.

A.2 Inert Waste Acceptance

Table A.2 Inert Waste Quantities (acceptable from outside the facility for recovery, restoration works and site development works)

WASTE TYPE	Inert
MAXIMUM TONNES for Phase 1 development and restoration works	100,000 m ³ unless otherwise agreed
MAXIMUM TONNES for Phase 2 and subsequent phases development and restoration works	75,000 m ³ unless otherwise agreed

SCHEDULE B : Specified Engineering Works

Specified Engineering Works
Development of the facility including preparatory works and lining.
Final capping.
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 C :Emission Limits

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

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

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

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

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

Level (mg/m ² /day) ^{Note 1}
350

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

C.4 Surface Water Discharge Limits: Measured at the outlets from the surface water lagoons.

Level (Suspended Solids mg/l)
35

C.5 Emission Limits Values for Landfill Gas Flare

Emission Point Reference numbers: to be agreed

Location: Landfill Gas Utilisation Plant and/or flare

Volume to be emitted: 3000m³/hr (unless results from modelling suggests otherwise)

Minimum discharge height: 5m (unless results from modelling suggests otherwise)

Parameter	Flare Emission Limit Value ^{Note 1}
Nitrogen oxides (NO _x)	150 mg/m ³
CO	50 mg/m ³
Particulates	130 mg/m ³
Total organic carbon (TOC)	10 mg/m ³
Hydrogen Chloride	50 mg/m ³ (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m ³ (at mass flows > 0.05 kg/h)

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

SCHEDULE D : Monitoring

Monitoring to be carried out as specified below.

D.1 Monitoring Locations

Monitoring locations shall, **unless otherwise stated** be those as set out in Table D.1.1 and Drawing No. 0013011/01/507 and Figure 7 of the application.

Table D.1.1 Monitoring Locations

Landfill Gas within Waste and at Boundary	Landfill Gas Flare	Dust Deposition	Noise	Surface Water	Ground Water	Leachate
Stations	Stations	Stations	Stations	Stations	Stations	Stations
Within waste body Note 1(a), Note 8	Flare ^{Note 1(a)}	D1	BD1	SW1(a) (upstream) Note 4	MW2 ^{Note 6}	Holding tank Note 1(a), Note 1(b)
Boundary locations Note 1(a), Note 9	Utilisation Plant ^{Note 1(a)}	D2	BD2	SW1	MW4 ^{Note 6}	Holding tank Note 1(a), Note 1(b)
		D3	BD3	SW2	MW11 ^{Note 6}	Phase 1 collection sump Note 1(a), Note 1(b)
		D4	BD4	SW3	MW12 ^{Note 7}	Phase 1 – Phase 8 Note 1(a), Note 1(b)
		D5	NSL1	SW4	MW 13 ^{Note 7}	Each cell and holding tank Note 1(a), Note 1(c)
		D6 ^{Note 3}	NSL2	SW5	MW14 ^{Note 7}	
		D7 ^{Note 3}	NSL3	SW6	MW15 ^{Note 7}	
		D8 ^{Note 3}	NSL4	SW7	MW16 ^{Note 7}	
		D9 ^{Note 3}	NSL5 Note 2	KS1 – KS4 ^{Note 5}		

Note 1(a): Monitoring location reference number to be agreed under Condition 8.1 of this licence.

Note 1(b): to be monitored for leachate composition as per Table D.5.1.

Note 1(c): Leachate levels to be recorded, in accordance with Table D.5.1.

Note 2: One additional noise monitoring location (NSL5) should be located at the house nearest to the south of the clay borrow area.

Note 3: To be agreed. D6, D7, D8 and D9 are to be located on the north, south, east and west boundaries of the activity boundary surrounding the clay borrow area.

Note 4: To be agreed. SW1(a) to be used as an upstream surface water monitoring location should be situated as far west as possible on the surface water channel that lies on a roughly ENE-WSW axis as shown on Drawing No. 0013011/01/507.

Note 5: Locations for kick samples for the ecological monitoring of surface water.

Note 6: Upgradient groundwater monitoring location.

Note 7: Downgradient groundwater monitoring location.
 Note 8: At least 2 per cell, prior to active landfill gas collection.
 Note 9: Subject to Condition 3.16.8.

D.2.1 Landfill Gas Plant

Monitoring to be obtained at locations to be agreed with the Agency prior to Installation.

Emission Point Reference No.: to be agreed as per Table D.1.1 and Condition 8.1.

Parameter	Flare	Utilisation Plant
	Monitoring Frequency	Monitoring Frequency
Inlet		
Methane (CH ₄) % v/v	Continuous	Weekly
Carbon dioxide (CO ₂)%v/v	Continuous	Weekly
Oxygen (O ₂) %v/v	Continuous	Weekly
Total Sulphur	Quarterly	Quarterly
Total Chlorine	Quarterly	Quarterly
Total Fluorine	Quarterly	Quarterly
Process Parameters		
Combustion	Continuous	Quarterly
Outlet		
CO	Continuous	Continuous
NO _x	Annually	Annually
SO ₂	Annually	Annually
Particulates	Annually	Annually
TA Luft Class I, II, III organics	Not applicable	Annually
TOC	Annually	Not applicable
Hydrochloric acid	Annually	Annually
Hydrogen fluoride	Annually	Annually

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

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

Table D.2.2 Landfill Gas Monitoring Parameters, Frequency and Technique

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

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

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

D.3 Dust Monitoring

Table D.3.1 Dust Monitoring Frequency and Technique

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

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

Note 2: Twice during the period May to September.

D.4 Noise

Table D.4.1 Noise Monitoring Frequency and Technique

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

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

D.5 Surface Water, Groundwater and Leachate

Table D.5.1 Water and Leachate - Parameters / Frequency

Parameter ^{Note 1}	SURFACE WATER Monitoring Frequency	GROUNDWATER Monitoring Frequency	LEACHATE Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	(Continuous) SCADA
Ammoniacal Nitrogen	Quarterly	Quarterly	Quarterly
BOD	Quarterly	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Quarterly	Quarterly
pH	Quarterly	Quarterly	Quarterly
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Quarterly	Quarterly
Metals and non-metals ^{Note 4}	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
List I/II organic substances ^{Note 3}	Note 7	Annually ^{Note 7}	Note 7
Mercury	Annually	Annually	Annually
Sulphate	Annually	Annually	Annually
Total Alkalinity	Annually	Annually	Not applicable
Total P / orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Annually	Annually
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation/TDS	Not Applicable	Annually	Not Applicable
Faecal Coliforms ^{Note 5}	Not Applicable	Annually	Not Applicable
Total Coliforms ^{Note 5}	Not Applicable	Annually	Not Applicable
Biological Assessment	Annually ^{Note 6}	Not Applicable	Not Applicable

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

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

Note 3: Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (US Environmental Protection Agency method 525 or equivalent, and pesticides (US Environmental Protection Agency method 608 or equivalent).

Note 4: Metals and elements to be analysed by AA/ICP should include as a minimum, boron, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, cadmium and zinc.

Note 5: In the case where groundwater is used for drinking water, if there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.

Note 6: Appropriate biological methods (such as EPA Q-Rating System to be used for the assessment of rivers and streams).

Note 7: Once off for List I/II organic substances. SW1(A) and SW3 only for surface water, 1 sample from leachate storage tank to be agreed as per Table D.1.1 and Condition 8.1, 1 leachate sample from active cell. MW4, MW15 and MW16 only for groundwater on annual basis.

D.6 Meteorological Monitoring

Table D.6.1 Meteorological Monitoring:

Upon commencement of waste activities data to be obtained from a location on the facility.

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Evaporation	Daily	Standard
Evapotranspiration ^{Note 1}	Daily	Standard
Humidity	Daily	Standard
Atmospheric Pressure ^{Note 1}	Daily	Standard

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

SCHEDULE E: Recording and Reporting to the Agency

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

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

Schedule F: Criteria for the Acceptance of Inert Waste

F.1 Acceptable Waste for Recovery

Only the wastes in Table E.1 are acceptable for recovery at the facility, unless otherwise agreed with the Agency.

Table F.1 Waste for Recovery

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

SCHEDULE G: Content of the Annual Environmental Report

Annual Environmental Report Content

Reporting Period.

Waste activities carried out at the facility.

Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year including the quantity of waste accepted in baled form.

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

Methods of deposition of waste.

Summary report on emissions.

Summary of results and interpretation of environmental monitoring. This must include the following:

- Summary of monitoring results for key leachate indicator parameters;
- Comparison of monitoring results against baseline data and relevant standards;
- Graphical presentation of the trends in the concentration of key leachate indicator parameters; and
- An assessment and explanation of the significance of the results and trends detected.
- Ecological report

Resource and energy consumption summary.

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

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

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

Report on restoration of completed cells/ phases.

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

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

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Annual water balance calculation and interpretation.

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

Schedule of Environmental Objectives and Targets for the forthcoming year including the objective to increase the baling capacity.

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

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Review of Nuisance Controls including traffic movements.

Traffic report

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

Report on the use of a portion of the waste charges and gate fees on appropriate local environmental improvement projects.

Report on progress in meeting the requirements of the Landfill Directive.

Report on training of staff.

Any other items specified by the Agency.

Signed on behalf of the said Agency
on the 23rd day of July, 2002

L. Kavanagh **Authorised Person**