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Ireland

**WASTE LICENCE
LANDFILL FOR INERT WASTE**

PROPOSED DECISION

Waste Licence	151-1
Register Number:	
Applicant:	Murphy Concrete Manufacturing Limited
Location of Facility:	Sarsfieldstown, Gormanstown, County Meath.

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 operation of an inert landfill in a former sand and gravel quarry. Only inert construction and demolition waste shall be accepted up to a maximum annual tonnage of 750,000 tonnes and subject to strict waste acceptance criteria. The licence also allows for the recovery of inert construction and demolition waste – either for use at the landfill itself or for use as aggregate material.

Waste disposal shall be carried out in cells constructed from a low permeability mineral liner in accordance with the Landfill Directive, and the base of the cells shall be above the water table. A risk assessment is required to be undertaken to establish the environmental impact from wastes previously deposited at the facility.

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 in addition to a wide range of reports on the operation and management of the facility, and submit these to the Agency.

The licence sets out in detail the conditions under which Murphy Concrete Manufacturing Limited will operate and manage this facility.

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DECISION & REASONS FOR THE DECISION

Reasons for the Decision

The Environmental Protection Agency (the Agency) is satisfied, on the basis of the information available, that the 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 Murphy Concrete Manufacturing Limited to carry on the waste activities listed below at Sarsfieldstown, Gormanstown, County Meath subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

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

Class 1	Deposit on, in or under land (including landfill): This activity is limited to the deposition of inert waste into cells constructed with a low permeability mineral layer and the possible collection/management of leachate and landfill gas arising at the facility.
Class 13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced: This activity is limited to the storage of unacceptable wastes in the waste quarantine area pending their despatch to appropriate facilities.

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

Class 3	Recycling or reclamation of metals and metal compounds: This activity is limited to the recovery of metal waste from Construction and Demolition waste arriving at the Construction and Demolition Waste Recovery Area.
Class 4	Recycling or reclamation of other inorganic materials: This activity is limited to the recovery of inert waste from Construction and Demolition waste arriving at the facility.
Class 13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced: This activity is limited to the storage of recovered wastes (e.g. metal waste and aggregate material) and the storage of inert wastes which are destined for recovery at the facility. The latter includes the stockpiling of soils for use in restoration works on-site, and also the storage of inert waste at the Construction and Demolition Waste Recovery Area for future recovery activities.

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.
Application	The application by the licensee for this waste licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
Bi-annually	A minimum of 2 times per year, at approximately six-monthly intervals.
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
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.
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.
Daytime	0800 hrs to 2200 hrs.
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.
EPA Working Day	Refers to the following hours: 0900 hrs to 1730 hrs Monday to Friday inclusive.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 94/3/EC and any subsequent amendment published in the Official Journal of the European Community.
Inert waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not

endanger the quality of surface water and/or groundwater.

Intermediate Cover	Refers to placement of material (minimum 300mm if soil is used) for a period of time prior to restoration or prior to further disposal of waste.
Landfill	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
Landfill Gas	Gases generated from the landfilled waste.
LEL (Lower Explosive Limit)	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
Licence	A waste licence issued in accordance with the Act.
Licensee	Murphy Concrete Manufacturing Limited.
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	2200 hrs to 0800 hrs.
Quarterly	At approximately three monthly intervals.
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.
Treatment	Treatment means the physical, thermal, chemical or biological processes, including sorting, that change the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery.
Trigger Level	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
Wastewater	Water that has been used, as for washing, flushing or in a manufacturing process.
Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

PART II CONDITIONS

CONDITION 1 SCOPE 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 area of land outlined in red on Figure No. 1.2 of the application. 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. Waste Acceptance
 - 1.4.1. Only Inert waste may be recovered or disposed of at the facility subject to the maximum quantities and other constraints listed in *Schedule A: Waste Acceptance*, of this licence.
 - 1.4.2. No hazardous wastes, liquid wastes, sludges or shredded waste shall be accepted at the facility.
 - 1.4.3. The licensee shall ensure that inert waste accepted at the facility is subject to pre-treatment where technically feasible.
- 1.5. Waste Acceptance Hours and Hours of Operation (unless otherwise agreed by the Agency)
 - 1.5.1. Waste may only be accepted at the facility between the hours of 7.30am and 7.30pm Monday to Friday inclusive and 7.30am to 4.30pm on Saturdays.
 - 1.5.2. The landfill and the C&D waste recovery area at the facility may only be operated during the hours of 7.00am to 8.00pm Monday to Friday inclusive and 7.00am to 5.00pm on Saturdays.
 - 1.5.3. Waste shall not be accepted at the landfill on Bank Holidays.
- 1.6. 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.
- 1.7. 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:
 - 1.7.1. That only those wastes and quantities as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice.
 - 1.7.2. 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.
 - 1.7.3. 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.

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

2.3 Environmental Management System (EMS)

- 2.3.1 The licensee shall establish and maintain an EMS. Within twelve months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement a proposal for a documented Environmental Management System (EMS) for the facility. Following the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

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

2.3.2.1 Schedule of Environmental Objectives and Targets

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

2.3.2.2 Environmental Management Plan (EMP)

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

- a) The items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency;
- b) Methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets; and
- c) 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 Within six months of the date of grant of this licence, the licensee shall establish and maintain a Communications Programme to inform and involve the local community and ensure that members of the public can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility.

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 Within six months of the date of grant of this licence, the licensee shall provide adequate security and stockproof fencing and gates around the facility. 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.

3.4.2 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 Site Surfaces

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

- 3.5.2 The facility entrance area, the Construction and Demolition Waste Recovery Area, the vehicle cleaning area, the Waste Inspection and Quarantine Areas and vehicle fuelling areas shall be paved and maintained.
- 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. Unless otherwise agreed by the Agency, drainage from these areas shall pass through a silt trap and oil interceptor and then be directed to the on-site wastewater treatment system.
- 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.
- 3.8 Weighbridge
- 3.8.1 The licensee shall provide and maintain a weighbridge at the facility.
- 3.9 Wheel Cleaning
- 3.9.1 Within three months of the date of grant of this licence, the licensee shall establish and maintain a wheelwash at the facility. The licensee shall agree the discharge arrangements (if any) for the wheelwash with the Agency in advance of its installation.
- 3.10 Waste Water Treatment System
- 3.10.1 The licensee shall provide and maintain a Wastewater Treatment System at the facility for the treatment of wastewater arising from toilets and water services on-site. Within six months of the date of grant of this licence, the licensee shall ensure that any septic tanks and percolation areas being used at the facility are operated in accordance with the Agency's *Wastewater Treatment Manual: Treatment Systems for Single Houses*. A report on its operation and design shall be submitted as part of the AER.
- 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 Within three months of the date of grant of this licence, 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 within three months of the date of grant of this licence.

This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion, or following the installation of any new bunds and prior to their use as a storage area.

3.12 Landfill Lining

- 3.12.1 The landfill liner shall comprise:-

- (i) A base and side wall; and
- (ii) A mineral layer of a minimum thickness of 1m with a hydraulic conductivity less than or equal to 1.0×10^{-7} m/s, or similar with equivalent protection to the base and side wall.

- 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 Formation levels of the cells shall be agreed with the Agency prior to cell development. The formation level of the base of the liner (prior to emplacement of the mineral layer or equivalent) shall be constructed at least 1m above the groundwater table level.

3.13 Leachate Management Infrastructure

- 3.13.1 Leachate management infrastructure which maybe required following the completion of the risk assessment referred to under Condition 5.13 shall be provided and maintained by the licensee within a timescale to be agreed by the Agency.

3.14 Landfill Gas Management

- 3.14.1 Landfill gas management infrastructure which may be required following the completion of the risk assessment referred to under Condition 5.13 shall be provided and maintained by the licensee within a timescale to be agreed by the Agency.

3.15 Surface Water Management

- 3.15.1 Effective surface water 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 prevention of contaminated water and leachate discharges into surface water drains and courses; and
- b) The collection/diversion of run-off arising from capped and restored areas.

- 3.15.2 Within six months of the date of grant of this licence, all surfacewater run-off arising from the maintenance building and associated hardstanding areas (including any areas used for washing vehicles) shall pass through a silt trap and an oil interceptor prior to discharge into a sedimentation pond. The silt trap and oil interceptor shall be adequately sized and shall be in accordance with European Standard prEN 858 (installations for the separation of light liquids).

- 3.15.3 Following the installation of the Construction and Demolition Waste Recovery Area and the Waste Inspection and Quarantine Areas, all surfacewater run-off arising from hardstanding areas here shall pass through a silt trap and an oil interceptor prior to discharge.

- 3.15.4 Any accumulated surfacewater within the facility which requires removal prior to lining shall be directed to a suitably designed sedimentation pond prior to discharge. Discharges of surfacewater from the sedimentation pond shall only be undertaken with the prior agreement of the Agency.

3.16 Groundwater Management

- 3.16.1 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.

3.17 Construction and Demolition Waste Recovery Area

- 3.17.1 Prior to the commencement of waste recovery operations, the licensee shall provide and maintain a construction and demolition waste recovery area at a location to be agreed in advance with the Agency. The storage and processing of all waste at this area shall be carried out on an impermeable concrete slab.

3.18 Monitoring Infrastructure

3.18.1 Landfill Gas

- a) Within six months from the date of grant of this licence, the licensee shall install four landfill gas monitoring points at locations to be agreed with the Agency.
- b) Within six months from the date of grant of this licence, the licensee shall install an effective permanent gas monitoring system in the site office.

3.18.2 Groundwater

- a) Within six months from the date of grant of this licence, the licensee shall install three additional monitoring points at locations to be agreed in advance with the Agency to allow for the sampling and analysis of groundwater. One of these shall be located upgradient of the facility and the other two shall be located downgradient of the facility. Each monitoring point shall include two separate standpipes and shall be screened appropriately such that overburden and bedrock groundwater can be sampled independently of each other.

3.18.3 Leachate

- a) The licensee shall install and maintain a minimum of one leachate monitoring point within each cell to allow for the sampling and analysis of leachate.

3.18.4 Replacement of Infrastructure

- a) 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 nine months of the date of grant of this licence, the licensee shall submit to the Agency for agreement a Restoration and Aftercare Plan for the facility. The licensee shall restore the facility on a phased basis in accordance with the agreed Restoration and Aftercare Plan (and any subsequent amendments). The plan shall have regard to the Agency's Landfill Manual, *Landfill Restoration and Aftercare*, and shall incorporate the following:
- a) Restoration of areas where domestic waste has previously been deposited, including as a priority, measures to decrease rainwater infiltration in this area;
 - b) Restoration of other parts of the facility where waste has previously been deposited;
 - c) Details of the landscaping to be carried out on completed areas;
 - d) A drawing which shows the final profile/contours of the facility; and
 - e) Appropriate timescales for the completion of each phase of restoration.
- 4.2. The final height of the facility (i.e. in areas where waste has been deposited) shall not exceed 22 mOD Malin.
- 4.3. Final Capping
- 4.3.1. Unless otherwise agreed by the Agency, the final capping of all new cells shall consist of the following:-
- a) Top soil (150 - 300mm); and
 - b) Subsoils, such that total thickness of top soil and subsoils is at least 1m.
- 4.3.2. The final capping of areas where waste has previously been deposited shall be agreed with the Agency following the completion of the Risk Assessment referred to under Condition 5.13.
- 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. Soil Storage
- 4.5.1. All soils shall be stored to preserve the soil structure for future use.

REASON: To provide for the restoration of the facility.

CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT

- 5.1 Waste Deposition
- 5.1.1 No waste shall be disposed of at the facility other than into cells lined in accordance with Condition 3.12.
- 5.1.2 Wastes shall not be accepted or deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.1.3 Prior to the commencement of waste activities, the licensee shall submit to the Agency for its agreement the proposed development and filling sequence plan for the facility. The plan shall include the retention of certain ecological habitats (as detailed in

Section 5.3.2 of the EIS). The landfill shall be filled in accordance with this agreed plan.

- 5.2 Waste shall only be accepted at the facility from holders of waste collection permits issued under the Waste Management (Collection Permit) Regulations, 2001. The licensee must maintain copies of these waste collection permits on-site.
- 5.3 Waste Acceptance and Characterisation Procedures
- 5.3.1 Prior to the 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. The procedures shall have regard to Council Decision (2003/33/EC) and shall as a minimum include the requirements of *Schedule A: Waste Acceptance*, of this licence.
- 5.3.2 Any waste deemed unsuitable for processing at the facility and/or in contravention of this licence, 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.
- 5.4 Working Face
- 5.4.1 Unless the prior agreement of the Agency is given, only one working face shall exist at the landfill at any one time for the disposal of waste.
- 5.5 Daily and Intermediate Cover
- 5.5.1 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.
- 5.6 Landscaping
- 5.6.1 The existing hedgerow network which forms the boundary of the facility shall be retained by the licensee.
- 5.7 Operational Controls
- 5.7.1 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.7.2 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over, unless with the prior agreement of the Agency.
- 5.7.3 Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials.
- 5.7.4 Filled cells shall be permanently capped within twelve months of the cells having been filled to the required level.
- 5.7.5 Scavenging shall not be permitted at the facility.
- 5.7.6 Gates shall be locked shut when the facility is unsupervised.
- 5.7.7 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.7.8 Within three months of the date of grant of this licence, fuels shall only be stored at appropriately bunded locations on the facility.
- 5.7.9 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.7.10 No smoking shall be allowed on the facility other than in the facility office.

- 5.7.11 Vehicle cleaning at the facility shall only be done on impervious concrete areas such that any run-off generated can be collected and treated in accordance with Condition 3.15.2.
- 5.8 Off-site Disposal and Recovery
- 5.8.1 Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor agreed by the Agency.
- 5.8.2 All waste transferred from the facility shall only be transferred to an appropriate facility agreed by the Agency.
- 5.8.3 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.
- 5.9 Construction and Demolition Waste Recovery Area
- 5.9.1 Only those Construction and Demolition wastes specified in *Table A.2.2 Waste for Recovery of Schedule A: Waste Acceptance*, of this licence 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.
- 5.10 Leachate Management
- 5.10.1 Any leachate collected at the facility shall be disposed of by tankering off-site in fully enclosed road tankers to a treatment facility agreed by the Agency.
- 5.11 Maintenance
- 5.11.1 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.
- 5.11.2 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
- 5.11.3 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face or to a skip.
- 5.12 All imported aggregate material (i.e. raw materials which are intended for processing at the facility) shall only be stored in designated areas so as to ensure that it does not become mixed/deposited with any waste held on-site. A drawing showing the location of such designated areas shall be submitted to the Agency within three months of the date of grant of this licence.
- 5.13 Risk Assessment Report
- 5.13.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement a Risk Assessment report. The risk assessment shall address the following issues:
- a) The nature, extent and type of wastes previously deposited at the facility, including estimated quantities of each and measures to remediate the environmental impact of previously deposited wastes taking account of the findings of the risk assessment;
 - b) The nature and extent of groundwater contamination (particularly any BTEX compounds, mineral oil, Diesel Range Organics and List I/II organic substances) and measures to remediate contaminated or polluted groundwater;
 - c) The location of nearby groundwater receptors (e.g. wells);

- d) Proposals for leachate management to minimise the quantity of leachate being generated, to abstract and collect leachate, monitoring procedures (including frequencies); and
- e) Proposals for landfill gas management to minimise the quantity of landfill gas being generated, to collect and flare/vent landfill gas, monitoring procedures (including frequencies) and measures to prevent the migration of landfill gas off-site.

5.13.2 The licensee shall implement the measures agreed by the Agency following receipt of the report required under Condition 5.13.1 within a timescale to be determined by the Agency.

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

CONDITION 6 EMISSIONS

- 6.1. No specified emission from the facility shall exceed the emission limit values set out in *Schedule C: Emission Limits*, of this licence. There shall be no other emissions of environmental significance.
- 6.2. The licensee shall ensure that 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; or
 - b) Carbon dioxide, greater than or equal to 1.5% v/v.
- 6.4. Groundwater
 - 6.4.1 There shall be no direct emissions to groundwater.
 - 6.4.2 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC. The groundwater trigger levels for each monitoring location shall be based on previous groundwater monitoring results from those locations.
- 6.5. Emissions to Surface Water
 - 6.5.1. No leachate or contaminated surface water shall be discharged to surface waters.
 - 6.5.2. No substance shall be discharged in a manner, or at a concentration which following initial dilution, causes tainting of fish or shellfish.

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

CONDITION 7 NUISANCE CONTROL

- 7.1 The licensee shall ensure that vermin, birds, flies, mud, dust, litter and odours do not give rise to nuisance at the facility or in the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.
- 7.2 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.
- 7.3 Litter Control
- 7.3.1 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. Such waste shall be disposed of at an appropriate facility.
- 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.
- 7.4.2 All stockpiles of waste shall be maintained so as to minimise dust generation.
- 7.5 Prior to exiting the facility, all waste vehicles shall use the wheelwash.

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 from the date of grant of this licence.
- 8.2 The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.
- 8.3 Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.
- 8.4 The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 8.5 All persons conducting the sampling, monitoring and interpretation of monitoring results as required by this licence shall be suitably competent.
- 8.6 Groundwater Monitoring

8.6.1 Subject to the agreement of the well owners, all private wells within 250m of the facility boundary shall be included in the monitoring programme set out in *Schedule D: Monitoring*, of this licence.

8.7 Meteorological Monitoring

8.7.1 Prior to the commencement of waste activities, the licensee shall either provide and maintain a meteorological station at the facility capable of monitoring the parameters listed in *Schedule D.5: Meteorological Monitoring* of this licence, or make arrangements for representative meteorological data to be collated for the facility to fulfil the requirements of *Schedule D.5: Meteorological Monitoring*, of this licence.

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 Archaeological Assessment

8.9.1 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.

8.10 Stability Assessment

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

8.11 Nuisance Monitoring

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

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

CONDITION 9 CONTINGENCY ARRANGEMENTS

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

- a) Identify the date, time and place of the incident;
- b) Carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
- c) Isolate the source of any such emission;
- d) Evaluate the environmental pollution, if any, caused by the incident;
- e) Identify and execute measures to minimise the emissions/malfunction and the effects thereof; and
- f) Provide a proposal to the Agency for its agreement within one month of the incident occurring to:-

- a) Identify and put in place measures to avoid reoccurrence of the incident;
 - b) Identify and put in place any other appropriate remedial action.
- 9.2. The licensee shall within six months of the date of grant of this licence, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment. 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 indicates 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; and.
- 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 and details of the waste collection permit;
- 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) The types and quantities of recovered materials sold to third parties (e.g. as aggregate material);
 - c) All training undertaken by facility staff;
 - d) Results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
 - e) Details of all nuisance inspections; and
 - f) 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; and
 - e) Any incidents or spillages of leachate during its removal or transportation.
- 10.6 A written record shall be kept for each load of waste departing from the facility. The following shall be recorded:-
- a) The name of the carrier;
 - b) The vehicle registration number;
 - c) The destination of the waste (facility name and waste licence/permit number as appropriate);
 - d) A description of the waste (if recovered or rejected waste, the specific nature of the waste);
 - e) The quantity of waste, recorded in tonnes;
 - f) The name of the person checking the load; and
 - g) The time and date of departure.

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 Administration, Waste Enforcement Section, at the Agency's headquarters;
- b) Comprise one original and four 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 1000 hrs 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-f), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident;
- c) In the event of any incident which relates to discharges to surfacewater, notify the Eastern Regional Fisheries Board as soon as practicable and in any case not later than 1000 hrs on the following working day after such an incident; and
- 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 Report

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

- a) The recovery of Construction and Demolition Waste; and
- b) Inert waste to be used for cover/restoration material at the facility.

11.4 Leachate Handling Procedures

11.4.1 The licensee shall submit to the Agency for its agreement prior to the commencement of any leachate handling on the facility, leachate handling procedures for the removal of leachate and its subsequent transport off-site.

11.5 Monitoring Locations

11.5.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement an appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing(s) shall include a unique reference code and the twelve figure National Grid Reference for each monitoring point.

11.6 Annual Environmental Report

- 11.6.1 The licensee shall submit to the Agency for its agreement an Annual Environmental Report (AER) by the 31st January each year. The AER shall be submitted on an annual basis thereafter.
- 11.6.2 The AER shall include as a minimum the information specified in *Schedule F: Content of Annual Environmental Report* of this licence, and it 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 €19,676.50 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 2004 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 2003, 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 Within twelve months of the date of grant of this licence, the licensee shall arrange for an independent third party risk assessment of the facility to be carried out. The risk assessment shall have particular regard to the report prepared under condition 5.13.1 and also any accidents, emergencies, or other incidents, which might occur at the facility and their effect on the environment, on the neighbours of the facility and on adjoining land-uses. The risk assessment shall include a comprehensive and fully costed Environmental Liabilities Risk Assessment for the facility together with a proposal for Financial Provision arising from the carrying on of the activities to which this licence relates.
- 12.2.2 The amount of financial provision, held under Condition 12.2.1 shall be maintained by the licensee and be reviewed and revised as necessary, but at least annually. Any proposal for such a revision shall be submitted to the Agency for its agreement.
- 12.2.3 The licensee shall within two weeks of purchase, renewal or revision of the financial provision required under Condition 12.2.1, forward to the Agency written proof of such indemnity.
- 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 Cost of Landfill of waste

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

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

SCHEDULE A : Waste Acceptance

A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities

WASTE TYPE	MAXIMUM (TONNES PER ANNUM) ^{Note 1}
Inert Waste for Disposal	738,000
Inert Waste for Recovery	12,000
Total	750,000

Note 1: The tonnage to be recovered may be increased by agreement with the Agency subject to the total tonnage not exceeding 750,000 tonnes (as specified in the total above).

A.2 Acceptable Waste

Only those wastes which are listed in Table A.2.1 and Table A.2.2 shall be accepted at the facility for disposal or recovery, unless otherwise agreed with the Agency.

Table A.2.1 Waste for Disposal

INERT OR INACTIVE WASTE		
Subsoil	Pottery and China	Concrete ^{Note 1}
Clay	Brickwork	Solid Road Planings, Solid Tarmacadam, Solid Asphalt
Stone, Rock and Slate	Natural Sand	Tailings and other wastes derived from washing and cleaning of minerals ^{Note 2}

Note 1: Only solid concrete shall be accepted for disposal. Liquid concrete or unsolidified washings from any tanks used for holding/transporting concrete shall not be accepted for disposal.

Note 2: Limited to such waste (EWC code 01 04 12) derived from on-site quarrying, washing or processing of sand and gravel aggregates.

Table A.2.2 Waste for Recovery

WASTE		
Topsoil	Pottery and China	Metals
Subsoil	Brickwork	Solid Road Planings, Solid Tarmacadam, Solid Asphalt
Clay	Natural Sand	Tailings and other wastes derived from washing and cleaning of minerals ^{Note 2}
Stone, Rock and Slate	Concrete ^{Note 1}	

Note 1: Only solid concrete shall be accepted. Liquid concrete or unsolidified washings from any tanks used for holding / transporting concrete shall not be accepted.

Note 2: Limited to such waste (EWC code 01 04 12) derived from on-site quarrying, washing or processing of sand and gravel aggregates.

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, including the sedimentation pond.
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.

SCHEDULE D : Monitoring

D.1 Monitoring Locations

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

Table D.1.1 Monitoring Locations

Landfill Gas Stations ^{Note 1}	Dust Deposition Stations ^{Note 3}	Noise Stations ^{Note 3}	Surface Water Stations ^{Note 4}	Ground Water Stations ^{Note 4}	Leachate Stations ^{Note 4}
GP1	NMP5	NMP5	ST1	MW 1	MW 7
GP2	NMP7	NMP7	ST2	MW 2	MW 8
GP5	NMP8	NMP8		MW 3	MW 9 ^{Note 7}
GP6	NMP13	NMP13		MW 4	MW10 ^{Note 7}
4 other locations ^{Note 2}		On-site plant ^{Note 9}		MW 5	1 location per cell ^{Note 8}
				MW 6	
				MW11	
				3 other locations ^{Note 5}	
				Private Wells ^{Note 6}	

Note 1: As shown on "Map of Landfill Gas Monitoring Locations" in Article 13 response received by the Agency on 7/11/02 from Bord na Mona.

Note 2: As per the requirements of Condition 3.18.1.

Note 3: As shown on Figure no. 3.7 Rev. 1 (Location of Environmental Monitoring Points) in Article 12 response received by the Agency on 24/9/02.

Note 4: As shown on Figure no. 1 (Site Location and Monitoring Locations) in Article 13 response received by the Agency on 24/9/02.

Note 5: As per the requirements of Condition 3.18.2.

Note 6: As per the requirements of Condition 8.6.1 and including PW1 and PW2 as shown on Figure 1 (Site Location and Monitoring Locations).

Note 7: Leachate quality monitoring not necessary for MW 9 and MW10. Only leachate levels to be recorded at these locations.

Note 8: As per the requirements of Condition 3.18.3.

Note 9: Frequency analysis to be done for all on-site plant (whilst operating) for the first monitoring event and thereafter only as required by the Agency.

D.2 Landfill Gas

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

Parameter	Monitoring Frequency		Analysis Method ^{Note1} /Technique ^{Note2}
	Gas Boreholes/Wells	Site Office	
Methane (CH ₄) % v/v	Quarterly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO ₂) % v/v	Quarterly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O ₂) % v/v	Quarterly	Weekly	Electrochemical cell
Atmospheric Pressure	Quarterly	Weekly	Standard
Temperature	Quarterly	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	Monitoring Frequency	Analysis Method/Technique
Dust Deposition (mg/m ² /day) ^{Note 1}	Quarterly ^{Note 2}	Standard Method ^{Note 3}

Note 1: A wind rose, obtained from the meteorological station for the relevant sampling period, shall be submitted with each set of results.

Note 2: At least twice during the period May to September.

Note 3: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.

D.4 Noise

Table D.4.1 Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) _{EQ} [30 minutes]	Bi-annually ^{Note 1}	Standard ^{Note 2}
L(A) ₁₀ [30 minutes]	Bi-annually ^{Note 1}	Standard ^{Note 2}
L(A) ₉₀ [30 minutes]	Bi-annually ^{Note 1}	Standard ^{Note 2}
Frequency Analysis (1/3 Octave band analysis)	Bi-annually ^{Note 1}	Standard ^{Note 2}

Note 1: At least one monitoring event to be carried out during concrete/stone crushing operations.

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

D.5 Meteorological Monitoring

Data to be obtained from a source agreed with the Agency.

Table D.5.1 Meteorological Monitoring:

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

D.6 Surface Water, Groundwater and Leachate

Table D.6.1 Water and Leachate - Parameters / Frequency

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

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

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

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).

Note 5: 2 surface water locations, 3 groundwater locations and 2 leachate locations to be agreed with the Agency for these parameters.

Note 6: In the case where groundwater is extracted for drinking water, if there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.

Note 7: Surfacewater monitoring to be done at times when flows are occurring.

SCHEDULE E : Recording and Reporting to the Agency

Report	Reporting Frequency ^{Note 1}	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	By the 31 st January 2004 and within one month after the end of each calendar year thereafter.
Record of incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Three months from the date of grant of licence and one month after the end of the three year period being reported on (or prior to the use of new structures).
Specified Engineering Works	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	Bi-annually	Ten days after end of the six-month period being reported on.
Monitoring of Groundwater	Quarterly	Ten days after end of the quarter being reported on.
Monitoring of Leachate	Annually	Ten days after end of the year being reported on.
Meteorological Monitoring	Annually	One month after end of the year being reported on.
Dust Monitoring	Quarterly	Ten days after the period being reported on.
Noise Monitoring	Bi-annually	Ten days after end of the six-month period being reported on.
Risk Assessment Report (Condition 5.13)	Once Off	Within six months of the date of grant of the licence.
Topographical Survey	Annually	Within six months of the date of grant of the licence and one month after the end of the year being reported on.
Stability Assessment	Annually	Six months from the date of grant of licence and one month after the end of the year being reported on.
Waste Recovery Report	Once Off	Within nine months of the date of grant of the licence.
Any other monitoring	As they occur	Within ten days of obtaining results.

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

SCHEDULE F : 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.

Types and Quantity of recovered materials sold to third parties (e.g. as aggregate material).

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.

Resource and energy consumption summary.

Proposed development of the facility and timescale of such development.

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

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

Report on restoration of completed cells / phases.

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

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

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Annual water balance calculation and interpretation.

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

Schedule of Environmental Objectives and Targets for the forthcoming year.

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

Tank, pipeline and bund testing and inspection report.

Report on the performance and compatibility of the septic tank (and associated percolation area) with the Agency's *Wastewater Treatment manual: "Treatment Systems for Single Houses"*.

Reported incidents and Complaints summaries.

Review of Nuisance Controls, including an assessment of dust and noise control measures.

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

Report on training of staff.

Any other items specified by the Agency.

Signed on behalf of the said Agency
on the 25th day of April, 2003

Ray Cullinane, Authorised Person