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LANDFILL ACT, 2002

Principal Act

Act. No. 2002-18

Commencement 20.2.2003

Assent 16.12.2002

Transposing:

Directive 1999/31/EC

ARRANGEMENT OF SECTIONS.

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AN ACT TO TRANSPOSE INTO THE LAW OF GIBRALTAR THE PROVISIONS OF COUNCIL DIRECTIVE 1999/31/EC OF 26 APRIL 1999 ON THE LANDFILL OF WASTE.

Title and commencement.

1. This Act may be cited as the Landfill Act 2002 and comes into operation on the day appointed by the Minister for the Environment by notice in the Gazette.

Interpretation and scope.

2. (1) In this Act, unless the context otherwise requires—

“biodegradable waste” means any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food or garden waste, and paper and cardboard;

“closure and after-care procedures” means the procedures set out in section 13;

“the Directive” means Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste;

“hazardous waste” has the meaning given by section 192KA of the Public Health Act;

“holder” means the producer of waste or the person who is in possession of it;

“inert waste” means waste which has the following properties—

- (a) it does not undergo any significant physical, chemical or biological transformations;
- (b) it does 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 to human health; and
- (c) its total leachability and pollutant content and the ecotoxicity of its leachate are insignificant and, in particular, do not endanger the quality of any surface water or groundwater;

“landfill” has the meaning given to it by subsection (3);

“landfill gas” means any gas generated from landfilled waste;

“landfill permit” means a permit for landfill issued by the regulator in accordance with this Act;

“leachate” means any liquid percolating through deposited waste and emitted from or contained within a landfill;

“liquid waste” means any waste in liquid form but excluding sludge;

“the Minister” means the Minister with responsibility for the environment;

“municipal waste” means waste from households as well as other waste which because of its nature or composition is similar to waste from households;

“non-hazardous waste” means waste which is not hazardous waste;

“operator” means the person responsible for the landfill;

“temporary storage” in relation to metallic mercury means for a period of more than 1 year but for no more than 5 years;

“the regulator” means the Environmental Agency which is the authority designated as responsible for performing the duties of the regulator set out in this Act;

“relevant waste acceptance criteria” means, in relation to a landfill, the waste acceptance criteria set out in Schedule 1 which apply to the class of landfill to which that landfill belongs;

“treatment” means physical, thermal, chemical or biological processes, including sorting, that change the characteristics of waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery;

“waste” has the meaning given to it in section 192 of the Public Health Act.

(2) Expressions, other than those set out in subsection (1), which are used in this Act and which are also used in the Directive shall have the same meaning as in the Directive.

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(3) For the purposes of this Act, landfill means a waste disposal site for the deposit of waste onto land or underground and shall include sites described in subsection (4) and exclude the sites described in subsection (5).

(4) The sites to be included are—

- (a) internal waste disposal sites, that is to say a site where a producer of waste is carrying its own waste disposal at the place of production; and
- (b) any site which is used for the temporary storage of waste for more than one year.

(5) The sites to be excluded are—

- (a) any facility where waste is unloaded in order to permit its preparation for further transport for recovery, treatment or disposal elsewhere;
- (b) any site where waste is stored prior to recovery or treatment for a period of less than three years as a general rule; and
- (c) any site where waste is stored prior to disposal for a period of less than one year.

(6) This Act does not apply to-

- (a) the spreading of sludges, including sewage sludges and sludges resulting from dredging operations, and similar matter on the soil for the purposes of fertilisation or improvement;
- (b) the use of suitable inert waste for redevelopment, restoration and filling-in work or for construction purposes; and
- (c) the deposit of unpolluted soil or of non-hazardous inert waste resulting from prospecting and extraction, treatment and storage of mineral resources and from the operation of quarries.

Requirement for a permit.

3. No person shall operate a landfill except under and to the extent authorised by a landfill permit.

Classification of landfill.

4. Before granting a landfill permit, the regulator shall classify the landfill-

- (a) as a landfill for hazardous waste;
- (b) as a landfill for non-hazardous waste; or
- (c) as a landfill for inert waste.

Prohibition of acceptance of certain wastes.

5.(1) The operator of a landfill shall not accept any of the following types of waste at the landfill—

- (a) liquid waste;
- (b) waste which, in the conditions of landfill, is explosive, corrosive, oxidising, flammable or highly flammable;
- (c) hospital and other clinical wastes which arise from medical or veterinary establishments and which are infectious;
- (d) chemical substances arising from research and development or teaching activities, such as laboratory residues, which are not identified or which are new, and whose effects on man or on the environment are not known;
- (e) as from 16th July 2003, whole used tyres other than—
 - (i) tyres used as engineering material;
 - (ii) bicycle tyres; and
 - (iii) tyres with an outside diameter above 1400mm;
- (f) as from 16th July 2006, shredded used tyres other than -
 - (i) bicycle tyres; and
 - (ii) tyres with an outside diameter above 1400mm; and
- (g) any waste which does not fulfil the relevant waste acceptance criteria.

(2) The operator of a landfill shall not accept waste which has been diluted or mixed solely to meet the relevant waste acceptance criteria.

(3) For the purposes of this section, waste is-

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“corrosive” if it consists of substances and preparations which may destroy living tissue on contact;

“explosive” if it consists of substances and preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene;

“flammable” if it consists of liquid substances and preparations having a flash point equal to or greater than 21⁰C and less than or equal to 55⁰C;

“highly flammable” if it consists of-

- (a) liquid substances and preparations having a flash point below 21⁰C (including extremely flammable liquids);
- (b) substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy;
- (c) solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition;
- (d) gaseous substances and preparations which are flammable in air at normal pressure;
- (e) substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities;

“infectious” if it consists of substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms; and

“oxidising” if it consists of substances and preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

Waste to be accepted in the different classes of landfill.

6.(1) Subject to subsection (2), the operator of a landfill shall only accept waste that has been subject to treatment.

(2) The operator of a landfill may accept waste that has not been subject to treatment if–

- (a) it is inert waste for which treatment is not technically feasible; or
- (b) subject to subsections (3), (4) and (5), as appropriate, it is waste other than inert waste and treatment would not reduce the quantity of the waste or the hazards to human health or the environment.

(3) The operator of a landfill for hazardous waste shall only accept waste which fulfils the waste acceptance criteria set out in paragraphs 1 and 2 of Schedule 1.

(4) The operator of a landfill for non-hazardous waste shall only accept–

- (a) municipal waste;
- (b) non-hazardous waste of any other origin which fulfils the waste acceptance criteria set out in paragraphs 1 and 3(a) of Schedule 1; and
- (c) stable, non-reactive hazardous waste (such as that which is solidified or vitrified) with leaching behaviour equivalent to that of non-hazardous waste referred to in subsection 4(b) and which fulfils the waste acceptance criteria set out in paragraphs 1 and 3(b) of Schedule 1.

(5) Where waste of the type described in subsection (4)(c) above is disposed of at a landfill for non-hazardous waste, the operator shall ensure it is not deposited in cells used or intended to be used for the disposal of biodegradable non-hazardous waste.

(6) The operator of a landfill for inert waste shall only accept inert waste which meets the waste acceptance criteria set out in paragraphs 1 and 4 of Schedule 1.

Application for a permit.

7.(1) An application to the regulator for a landfill permit shall be in writing and shall contain the following information–

- (a) the name of the applicant and, when they are different persons, the operator;

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- (b) the description of the types and total quantity of waste to be deposited;
- (c) the proposed capacity of the disposal site;
- (d) the description of the site, including its hydrogeological and geological characteristics;
- (e) the proposed methods for pollution prevention and abatement;
- (f) the proposed operation, monitoring and control plan;
- (g) the proposed plan for the closure and after-care procedures;
- (h) where an environmental statement is required under the Town Planning (Environmental Impact Assessment) Regulations 2000, the information placed on the register pursuant to regulation 12 of those regulations;
- (i) the financial security, or any other equivalent provision, arranged by the applicant to ensure that the obligations arising under the landfill permit are discharged and the closure and after-care procedures are followed.

(2) The information contained in an application for a permit may be made available by the regulator—

- (a) to a member of the public, on request; and
- (b) to such persons as the regulator may think fit.

Conditions of the permit.

8.(1) The regulator shall not issue a landfill permit unless it is satisfied that—

- (a) the site complies with the requirements of this Act;
- (b) the site will be managed by a person who is technically competent;
- (c) the management and staff of the operator are provided with professional and technical development and training;

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- (d) the site will be operated in such a manner that the necessary measures are taken to prevent accidents and limit their consequences;
 - (e) the financial security, or any other equivalent provision, arranged by the applicant to ensure that the obligations arising under the landfill permit are discharged and the closure and after-care procedures are followed.
- (2) The regulator shall include conditions in the landfill permit to ensure that—
- (a) the provision required by subsection (1)(e) is maintained until the landfill permit is surrendered in accordance with this Act.
 - (b) the landfill is in line with the waste management plan prepared under section 192M of the Public Health Act.
- (3) The regulator shall inspect the site prior to the commencement of disposal operations in order to ensure that it complies with the relevant conditions of the landfill permit.

Content of the landfill permit.

9. A landfill permit shall include—

- (a) a statement of the class of the landfill;
- (b) conditions specifying the defined types and total quantity of waste authorised to be deposited in the landfill;
- (c) conditions applying to—
 - (i) preparations for landfill operations;
 - (ii) carrying out landfill operations; and
 - (iii) monitoring and control procedures, including contingency plans;
- (d) conditions making provisional requirements for the closure and after-care operations;
- (e) conditions requiring the operator to report at least annually to the regulator on—

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- (i) the types and quantities of waste disposed of; and
 - (ii) the results of the monitoring programme required by sections 12 and 13;
- (f) conditions requiring compliance with this Act including Schedule 2; and
- (g) such other conditions as appear appropriate to the regulator.

Cost of the landfill of waste.

10. The operator of a landfill shall ensure that the charges it makes for the disposal of waste on its landfill cover—

- (a) the costs of the setting up and operation of the landfill;
- (b) the costs of the provision of financial security, or any other equivalent provision, to ensure that the obligations arising under the landfill permit are discharged and the closure and after-care procedures are followed; and
- (c) the estimated costs of the closure and after-care of the site for a period of at least 30 years from its closure.

Waste acceptance procedures.

11.(1) Prior to or at the time of delivery of the waste to the landfill—

- (a) the operator shall have supplied the holder with documentation setting out the conditions set in the landfill permit; and
- (b) the holder shall have supplied the operator with documentation showing that the waste fulfils-
 - (i) the conditions set in the landfill permit; and
 - (ii) the relevant waste acceptance criteria.

(2) The operator shall check the waste documentation required by legislation including, where relevant—

- (a) the identification form applying to hazardous waste; and

- (b) the documents required by Council Regulation (EEC) No 259/93 of 1 February 1993 on the supervision and control of shipments of waste within, into and out of the European Community.

(3) The operator shall, in accordance with such procedures as are specified by the regulator, test waste to establish whether it corresponds to the description in the accompanying documents and, if representative samples are taken for analysis, the operator shall retain the samples and results of any analysis for at least one month.

(4) The operator shall keep a register showing-

- (a) the quantities of waste deposited;
- (b) its characteristics;
- (c) its origin;
- (d) the dates of its delivery;
- (e) the identity of the producer or, in the case of municipal waste, the collector; and
- (f) in the case of hazardous waste, its precise location on the site.

(5) The information required to be kept under subsection (4) shall be made available to the regulator on request.

(6) The operator on accepting each delivery of waste shall provide a written receipt to the person delivering it.

(7) Where waste is not accepted at a landfill, the operator shall inform the regulator of that fact as soon as reasonably possible.

Control and monitoring procedures in the operational phase.

12.(1) The following requirements shall apply to landfill sites from the start of the operational phase until definitive closure.

(2) The operator shall carry out the control and monitoring procedures set out in Schedule 3.

(3) Where the procedures required by subsection (2) reveal any significant adverse environmental effects, the operator shall notify the regulator as soon as reasonably possible.

(4) When it receives a notification of significant adverse environmental effects in accordance with subsection (3), the regulator shall determine the nature and timing of corrective measures that are necessary and shall require the operator to carry them out.

(5) The operator shall report at least once a year or at intervals specified by the regulator if they are more frequent, on the basis of aggregated data, the results of monitoring and on such other matters which the regulator requires to demonstrate compliance with the conditions of the landfill permit or to increase its knowledge of the behaviour of waste in landfill.

(6) The operator shall ensure that quality control in respect of the following is carried out by competent laboratories-

- (a) analytical operations of control and monitoring procedures; and
- (b) analyses of representative samples taken in accordance with section 11(3).

Closure and after-care procedures.

13.(1) The following procedures shall apply to all landfill sites.

(2) The procedures may relate to the closure of the whole of the landfill or part of it.

(3) The closure shall begin-

- (a) when the conditions specified in the landfill permit are satisfied;
- (b) when the regulator approves a request from the operator for closure to begin; or
- (c) when the regulator issues a reasoned decision that closure should begin.

(4) A landfill shall not be definitively closed until-

- (a) such reports as may be required by the regulator have been submitted to it by the operator; and
- (b) the regulator-
 - (i) has assessed all the reports submitted by the operator;

- (ii) has carried out a final on-site inspection ; and
- (iii) has notified the operator in writing that it approves the closure.

(5) Following definitive closure of a landfill, the operator shall-

- (a) remain responsible for the maintenance, monitoring and control for such period as the regulator determines is reasonable, taking into account the time during which the landfill could present hazards;
- (b) notify the regulator of any significant adverse environmental effects revealed by the control procedures and take the remedial steps required or approved by the regulator; and
- (c) be responsible for monitoring and analysing landfill gas and leachate from the landfill and the groundwater regime in its vicinity in accordance with Schedule 3 for as long as the regulator considers that the landfill is likely to cause a hazard to the environment.

(6) The operator shall not be relieved from liability under the conditions of the landfill permit by reason of the approval of closure by the regulator under subsection (4)(b)(iii).

National strategy.

14. The Minister shall set up a national strategy for the implementation of the reduction of biodegradable waste going to landfills and shall ensure that it is notified to the Commission by 16 July 2003.

Charges by the regulator.

15.(1) Where the regulator incurs costs in carrying out its functions under this Act it may charge a fee determined in accordance with this section to any person carrying on an activity to which this Act applies.

(2) The fee shall not exceed the sum of the costs reasonably incurred by the regulator in dealing with the activity to which this Act applies.

(3) Where, in the opinion of the regulator, it can properly carry out its functions under this Act only by engaging specialists and consultants, the cost of such specialists and consultants shall be included in the fee payable under sub-section (1).

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(4) When requiring payment the regulator shall send or give to the person by whom the fee is payable, if that person so requests, a detailed statement of the work done and costs incurred and the period to which the statement relates and the requirements of this Act shall be deemed not to have been complied with unless the fee, or such proportion of it as the regulator may in its discretion specify, has been paid.

(5) The fee or such part of it as remains unpaid shall be recoverable as a civil debt.

Offences.

16.(1) It shall be an offence for a landfill operator to contravene the provisions of this Act.

(2) A person who is guilty of an offence under subsection (1) shall be liable on summary conviction to a fine up to level 5 on the standard scale.

(3) Where an offence under this section committed by a body corporate is proved to have been committed with the consent or connivance of, or to have been attributable to any neglect on the part of, any director, manager, secretary or other similar officer of the body corporate or a person who was purporting to act in any such capacity, he as well as the body corporate shall be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

(4) Where the affairs of a body corporate are managed by its members, subsection (3) shall apply in relation to the acts or defaults of a member in connection with his functions of management as if he were a director of the body corporate.

(5) Where the commission by any person of an offence under this section is due to the act or default of some other person, that other person may be charged with and convicted of the offence by virtue of this subsection whether or not proceedings for the offence are taken against the first-mentioned person.

Regulations.

17. The Minister may make regulations for the purposes of implementing this Act and the Directive.

SCHEDULE 1

Section 2 and 6

WASTE ACCEPTANCE CRITERIA

Criteria for acceptance of waste which apply to all kinds of landfill.

1.(1) The following criteria shall apply to the acceptance of waste at any landfill.

(2) Waste may only be accepted at a landfill where its acceptance would not-

- (a) result in unacceptable emissions to groundwater, surface water or the surrounding environment;
- (b) jeopardise environment protection systems (such as liners, leachate and gas collection and treatment systems) at the landfill;
- (c) put at risk waste stabilisation processes (such as degradation or wash out) within the landfill; or
- (d) endanger human health.

Additional criteria for acceptance of waste at landfills for hazardous waste.

2. Waste may only be accepted at a landfill for hazardous waste if-

- (a) it is-
 - (i) any waste listed in the index annexed to the Commission Decision on Wastes which is identified as hazardous waste pursuant to paragraph 4 of the Annex to that Decision; or
 - (ii) any waste which has similar characteristics to the wastes referred to in sub-paragraph (i); and
- (b) its total content or leachability-
 - (i) does not present a short term occupational risk or an environmental risk; and

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- (ii) would not prevent the stabilisation of the landfill within its projected lifetime taking account of its after care period following closure.

Additional criteria for acceptance of waste at landfills for non-hazardous waste.

3. Waste may only be accepted at a landfill for non-hazardous waste if-

- (a) it is-
 - (i) any waste listed in the index annexed to the Commission Decision on Wastes but which is not identified as hazardous waste pursuant to paragraph 4 of the Annex to that Decision; or
 - (ii) any waste which has similar characteristics to the wastes referred to in sub-paragraph (i); or
- (b) it is-
 - (i) any waste listed in the index annexed to the Commission Decision on Wastes which is identified as hazardous waste pursuant to paragraph 4 of the Annex to that Decision; or
 - (ii) any waste which has similar characteristics to the wastes referred to in sub-paragraph (i),

and its deposit at the landfill otherwise meets the requirements of section 6(4)(c) and (5).

Additional criteria for acceptance of waste at landfills for inert waste.

4. Waste may only be accepted at a landfill for inert waste if it is listed in the following Table or it otherwise falls within the definition of inert waste.

WASTE ACCEPTABLE AT LANDFILLS FOR INERT WASTE

European Waste Catalogue Code	Description	Exclusions
10 11 03	Waste glass based fibrous materials	
15 01 07	Glass packaging	
17 01 01	Concrete	
17 01 02	Bricks	

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17 01 03	Tiles and ceramics	
17 02 02	Glass	
17 05 04	Soil and stones	Excluding topsoil, peat
20 01 02	Glass	
20 02 02	Soil and stones	Excluding topsoil, peat

5. In this Schedule, “the Commission Decision on Wastes” means the Commission Decision 2000/532/EC replacing Decision 94/3 establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EC on hazardous waste.

SCHEDULE 2

Section 9

GENERAL REQUIREMENTS FOR ALL CLASSES OF LANDFILLS**Location.**

1.(1) The location of a landfill must take into consideration requirements relating to-

- (a) the distances from the boundary of the site to residential and recreational areas, waterways, water bodies and other agricultural or urban sites;
- (b) the existence of groundwater, coastal water or nature protection zones in the area;
- (c) the geological or hydrogeological conditions in the area;
- (d) the risk of flooding, subsidence, landslides or avalanches on the site; and
- (e) the protection of the natural or cultural heritage in the area.

(2) A landfill permit may be issued for the landfill only if-

- (a) the characteristics of the site with respect to the requirements in sub-paragraph (1); or
- (b) the corrective measures to be taken,

indicate that the landfill does not pose a serious environmental risk.

(3) In this regulation “nature protection zone” means—

- (a) a marine nature area or a nature conservation area as defined in section 2(1) of the Nature Protection Act 1991; or
- (b) a European site or a European Marine site within the meaning of section 17E of the Nature Protection Act 1991.

Water control and leachate management.

2.(1) Subject to the following provisions of this paragraph, appropriate arrangements shall be made with regard to the characteristics of the landfill and prevailing meteorological conditions in order to-

- (a) control water from precipitations entering the landfill body;
- (b) prevent surface water or groundwater from entering into the landfilled waste;
- (c) collect contaminated water and leachate;
- (d) treat contaminated water and leachate to the appropriate standard so that it can be discharged.

(2) Arrangements need not be made in accordance with sub-paragraph (1)(c) if the regulator decides that the landfill poses no potential hazard to the environment in view of its location and the kinds of waste to be accepted at the landfill.

(3) This paragraph shall not apply to landfills for inert waste.

Protection of soil and water.

3.(1) The landfill must be situated and designed so as to-

- (a) provide the conditions for prevention of pollution of the soil, groundwater or surface water; and
- (b) ensure efficient collection of leachate as and when required by paragraph 2.

(2) Soil, groundwater and surface water is to be protected by-

- (a) the use of a geological barrier combined with a bottom liner during the operational phase of the landfill; and
- (b) the use of a geological barrier combined with a top liner following closure and during the passive phase.

(3) The geological barrier shall comply with the requirements of sub-paragraph (4) and shall also provide sufficient attenuation capacity to prevent a potential risk to soil and groundwater, taking into account the geographic and hydrogeological conditions below and in the vicinity of the landfill site.

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(4) The landfill base and sides shall consist of a mineral layer which provides protection of soil, groundwater and surface water at least equivalent to that resulting from the following permeability and thickness requirements–

- (a) in a landfill for hazardous waste: $k \leq 1.0 \times 10^{-9}$ metre/second: thickness ≥ 5 metres;
- (b) in a landfill for non-hazardous waste: $k \leq 1.0 \times 10^{-9}$ metre/second: thickness ≥ 1 metres;
- (c) in a landfill for inert waste: $k \leq 1.0 \times 10^{-7}$ metre/second: thickness ≥ 1 metres.

(5) Where the geological barrier does not meet the requirements of sub-paragraph (4) naturally, it may be completed artificially and reinforced by other means providing equivalent protection but in any such case, a geological barrier established by artificial means must be at least 0.5 metres thick.

(6) A leachate collection and sealing system to ensure that leachate accumulation at the base of the landfill is kept to a minimum must also be provided in any hazardous or non-hazardous landfill in accordance with the following table-

Leachate collection and bottom sealing

Landfill category	Non-hazardous	Hazardous
Artificial sealing liner	Required	Required
Drainage layer ≥ 0.5 metres	Required	Required

(7) Where, the potential hazards to the environment indicate that the prevention of leachate formation is necessary, surface sealing may be prescribed by the regulator taking account of the following guidelines-

Landfill category	Non-hazardous	Hazardous
Gas drainage layer	Required	Not required
Artificial sealing liner	Not required	Required
Impermeable mineral layer	Required	Required
Drainage layer > 0.5 metres	Required	Required
Top soil cover > 1 metres	Required	Required

(8) The requirements of sub-paragraphs (3) to (7) may be reduced to an appropriate extent if on the basis of an assessment of environmental risks,

having regard in particular to the principles of Directive 80/68/EEC of 17 December 1997 on the protection of groundwater against pollution-

- (a) it has been decided in accordance with paragraph 2 that the collection and treatment of leachate is not necessary; or
- (b) it is established that the landfill poses no potential hazard to soil, groundwater or surface water.

Gas control.

4.(1) Appropriate measures must be taken in order to control the accumulation and migration of landfill gas.

(2) Landfill gas must be collected from all landfills receiving biodegradable waste and the landfill gas must be treated and, to the extent possible, used. If the gas collected cannot be used to produce energy, it must be flared,

(3) The collection, treatment and use of landfill gas under sub-paragraph (2) must be carried on in a manner which minimises damage to or deterioration of the environment and risk to human health.

Nuisances and hazards.

5.(1) Measures must be taken to minimise the nuisances arising from the landfill through-

- (a) emissions of odours and dust;
- (b) wind-blown materials;
- (c) noise and traffic;
- (d) birds, vermin and insects;
- (e) the formation of aerosols; and
- (f) fires.

(2) The landfill must be equipped so that dirt originating from the site is not dispersed onto public roads and the surrounding land.

Stability.

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6.(1) The placement of waste must ensure stability of all the waste on the site and associated structures and in particular must avoid slippages.

(2) Where an artificial barrier is used, the geological substratum must be sufficiently stable, taking into account the morphology of the landfill, to prevent settlement that may cause damage to the barrier.

Barriers.

7.(1) The landfill must be secured to prevent free access to the site.

(2) The gates of the landfill must be locked outside operating hours.

(3) The system of control and access to each facility must provide systems to detect and discourage illegal dumping in the facility.

SCHEDULE 3

Sections 12(2) and 13(5)(c)

MONITORING PROCEDURES IN OPERATION AND AFTER-CARE PHASES**Minimum procedures.**

1. This Schedule sets out minimum procedures for monitoring to be carried out to check-

- (a) that waste has been accepted for disposal only if it fulfils the relevant waste acceptance criteria;
- (b) that the processes within the landfill proceed as desired;
- (c) that environmental protection systems are functioning fully as intended; and
- (d) that the conditions of the landfill permit are fulfilled.

Emission data.

2.(1) Samples of leachate or surface water (if present) must be collected at representative points.

(2) Sampling and measuring of the volume and composition of any leachate must be performed separately at each point at which leachate is discharged from the site.

(3) Monitoring of surface water (if present) shall take place at least two points, one upstream from the landfill and one downstream.

(4) Gas monitoring must be carried out for each section of the landfill and representative samples must be collected and analysed in accordance with Table 1.

(5) A representative sample of leachate and water shall be taken for monitoring purposes in accordance with Table 1.

TABLE 1

	Operational phase	After-care phase ¹
Leachate volume ²	Monthly ^{1, 3}	Every six months

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Leachate composition ^{2,4}	Quarterly ¹	Every six months
Volume and composition of surface water ⁵	Quarterly ¹	Every six months
Potential gas emissions and atmospheric pressure ⁶ (CH ₄ , CO ₂ , O ₂ , H ₂ S, H ₂ etc)	Monthly ^{1,7}	Every six months ⁸

Notes to Table 1

¹ Longer intervals may be allowed if the evaluation of data indicates that they would be equally effective. For leachates, the conductivity must always be measured at least once a year.

² These do not apply where leachate collection is not required under paragraph 2(1)(c) of Schedule 2.

³ The frequency of sampling may be adapted on the basis of the morphology of the landfill waste (in tumulus, buried, etc) (but only if the Environment Agency considers that the conditions of the landfill permit should allow for it).

⁴ The parameters to be measured and substances to be analysed vary according to the composition of the waste deposited. They must be specified in the conditions of the landfill permit and reflect the leaching characteristics of the wastes.

⁵ On the basis of the characteristics of the landfill site, the Environment Agency may determine that these measurements are not required.

⁶ These measurements are related mainly to the content of the organic material in the waste.

⁷ CH₄, CO₂, O₂ regularly, other gases as required, according to the composition of the waste deposited, with a view to reflecting its leaching properties.

⁸ Efficiency of the gas extraction system must be checked regularly.

Protection of groundwater.

3.(1) The sampling measurements taken must be sufficient to provide information on groundwater likely to be affected by the discharge from the landfill, with at least one measuring point in the groundwater inflow region and two in the outflow region.

(2) The number of measurements referred to sub-paragraph (1) may be increased on the basis of a specific hydrogeological survey or the need for an early identification of accidental leachate release in the groundwater.

(3) Sampling must be carried out in at least three locations before filling operations in order to establish reference values for future sampling.

4.(1) The monitoring of groundwater shall be carried out in accordance with Table 2.

(2) The parameters to be analysed in the samples taken must be derived from the expected composition of the leachate and the groundwater quality in the area.

(3) In selecting the parameters for analysis, the mobility in the groundwater zone must be taken into account.

(4) Parameters may include indicator parameters in order to ensure an early recognition of change in water quality (the recommended parameters are pH, TOC, phenols, heavy metals, fluoride, AS, oil/hydrocarbons).

TABLE 2

	Operational phase	After-care phase
Level of groundwater	Every six months ¹	Every six months ¹
Groundwater composition	Site-specific frequency ^{2, 3}	Site-specific frequency ^{2, 3}

Notes to Table 2

¹ If there are fluctuating groundwater levels, the frequency must be increased.

² The frequency must be based on the possibility for remedial action between two samplings if a trigger level is reached, i.e. the frequency must be determined on the basis of knowledge and the evaluation of the velocity of groundwater flow.

³ When a trigger level is reached (see paragraph 5), verification is necessary by repeating the sampling. When the level has been confirmed, a contingency plan set out in the landfill permit conditions must be followed.

Trigger levels.

5.(1) Significant adverse environmental effects, as referred to in sections 12(4) and 13(5)(b), should be considered to have occurred in the case of groundwater when an analysis of a groundwater sample shows a significant change in water quality.

(2) The level at which the effects referred to in sub-paragraph (1) are considered to have occurred (“the trigger level”) must be determined taking account of the specific hydrogeological formations in the location of the landfill and groundwater quality.

(3) The trigger level must be set out in the conditions of the landfill permit whenever possible.

(4) The observations must be evaluated by means of control charts with established control rules and levels for each downgradient well.

(5) The control levels must be determined from local variations in groundwater quality.

Topography.

6. The topography of the site and settling behaviour of the landfill body shall be monitored in accordance with Table 3.

TABLE 3

	Operational phase	After-care phase

This version is out of date

Structure and composition of landfill body ¹	Yearly	
Settling behaviour of the level of the landfill body	Yearly	Yearly reading

Note to Table 3

¹ Data for the status plan of the relevant landfill: surface occupied by waste, volume and composition of waste, methods of depositing, time and duration of depositing, calculation of the remaining capacity still available at the landfill.