



Headquarters
P.O. Box 3000
Johnstown Castle Estate
County Wexford
Ireland

TECHNICAL AMENDMENT A
To
WASTE LICENCE

Licence Register Number:	W0014-01
Licensee:	Kildare County Council
Location of Facility:	Silliot Hill Landfill, Silliot Hill and Brownstown, County Kildare

Reasons for the Decision

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of licence Reg. No. W0014-01 granted on 17/05/2002, as well as any amendments noted herein, any emissions from the activity will comply with and not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2005.

Technical Amendment

In pursuance of the powers conferred on it by Section 42B(1)(b) and (c) of the Waste Management Acts 1996 to 2005, the Agency amends Licence Reg. No. W0014-01, granted to Kildare County Council to carry on waste activities at Silliot Hill Landfill, Silliot Hill and Brownstown, County Kildare.

Henceforth, Waste Licence Register No. W0014-01 shall be read in conjunction with the amendments set out below.

This technical amendment is limited to the following:

Amendments

Glossary of Terms

BAT	Best Available Techniques.
Bioaerosol	An aerosol of biological particles.
Compost	Stable, sanitised and humus-like material rich in organic matter and free from offensive odours resulting from composting of separately collected biowaste which complies with the environmental quality classes outlined in Schedule F: Standards for Compost Quality of this licence.
Forced aeration	The supply of air to a compost pile, by pumping (positive pressure) or by sucking air through the composting material (negative pressure).
Incident	The following shall constitute an incident for the purposes of this licence: (i) an emergency; (ii) any emission which does not comply with the requirements of this licence; (iii) any trigger level specified in this licence which is attained or exceeded; and, (iv) any indication that environmental pollution has, or may have, taken place.
In-vessel composting	Different composting methods in which material for composting is contained in a building, reactor or vessel.
Municipal Waste	As defined in Section 5(1) of the Acts.
Stabilised Biowaste	Waste resulting from the mechanical/biological treatment of unsorted waste or residual municipal waste including treated biowaste which does not comply with the environmental quality classes outlined in Schedule F: Standards for Compost Quality, of this licence.
Windrow	An elongated pile of composting material.

To be inserted into the Glossary of the existing licence.

Conditions of Licence

Amend Condition 1

- 1.11 Before commencing accepting food waste or amendment material the licensee shall satisfy the Agency that it has obtained consent from the Department of Agriculture and Food to treat animal by-products in composting/biogas facilities.

To be inserted after condition 1.10 of the existing licence.

Amend Condition 2

- 2.5 The licensee shall carry out an audit of the energy efficiency of the site. The audit shall:-
- (i) identify all opportunities for energy use reduction and efficiency,
 - (ii) be carried out in accordance with the guidance published by the Agency; “Guidance Note on Energy Efficiency Auditing” and
 - (iii) be carried out at intervals as required by the Agency.
 - (iv) a summary of audit findings shall be submitted as part of the Annual Environmental Report.

The recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2.3.

- 2.6 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into the Schedule of Environmental Objectives and Targets.
- 2.7 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

To be inserted after condition 2.4 of the existing licence.

Amend Condition 3

- 3.7.4 The licensee shall provide on-site storage tanks for the collection and temporary storage of roof water from any site-buildings. This water shall be re-used in the process where possible.
- 3.7.5 While awaiting collection, mature compost shall be stored in areas protected against uncontrolled run-off and nuisance formation.

To be inserted after condition 3.7.3 of the existing licence.

- 3.9.2 The wheel cleaner shall be used by all vehicles leaving the facility as required to ensure that no process water or waste is carried off-site. All water from the wheel cleaning area shall be directed to the trade effluent drainage network.

To be inserted after condition 3.9.1 of the existing licence.

Amend Condition 4

- 4.8 Decommissioning & Residuals Management

Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution. The licensee

shall carry out such tests, investigation or submit certification, as requested by the Agency, to confirm that there is no risk to the environment.

To be inserted after condition 4.7 of the existing licence.

Amend Condition 5

5.2.6 The licensee shall ensure that incoming waste (and intermediate compost) is stored in a manner to prevent nuisance from odour, dust, vermin, birds, etc.

5.2.7 No waste shall be stored overnight at the facility in other than designated storage areas in the biowaste reception buildings.

5.2.8 All waste processing shall occur inside an appropriate building, unless otherwise agreed by the Agency.

5.2.9 A record of all inspections of incoming waste loads shall be maintained.

5.2.10 Waste shall be accepted at the facility from known customers or new customers subject to initial waste profiling and waste characterisation off-site. The written records of this off-site waste profiling and characterisation shall be retained by the licensee for all active customers and for a two year period following termination of licensee/customer agreements.

To be inserted after condition 5.2.5 of the existing licence.

5.4.13 All waste handling/processing plant shall be cleared of all waste and washed down on a weekly basis.

5.4.14 All wastewater from composting operations shall be collected and re-used in the composting process where possible. Any wastewater from the composting operations that is not re-used shall be either discharged to the wastewater drainage system or tankered off-site for treatment at a location to be agreed in advance by the Agency.

5.4.15 The licensee shall ensure that the doors to the biowaste treatment building remain closed at all times other than to facilitate the delivery/removal of wastes from the building.

5.4.16 The licensee shall on a daily basis monitor and record the temperature and the moisture content of the material at a number of locations to be agreed in advance by the Agency.

To be inserted after condition 5.4.12 of the existing licence.

5.6.4 Compost not meeting the above standard will be regarded as waste and records shall be kept of such waste.

5.6.5 No waste shall be deposited outside the biodegradable waste composting area without the prior permission of the Agency.

To be inserted after condition 5.6.3 of the existing licence.

Amend Condition 6

6.7 Dust/Odour Control

6.7.1 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.

6.7.2 In advance of the date of commencement of the licensable activities at the facility, the licensee shall install and provide adequate measures for the control of odours and dust emission, including fugitive dust emissions, from the facility. Such measures shall at a minimum include the installation of an odour management system.

To be inserted after condition 6.6 of the existing licence.

Amend Condition 7

7.1 The licensee shall ensure that all or any of the following:

- Vermin
- Birds
- Flies
- mud
- dust
- litter

associated with the activity do not result in an impairment of, or an interference with amenities or the environment at the facility or beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary. Any method used by the licensee to control or prevent any such impairment/interference shall not cause environmental pollution.

Delete Condition 7.1 of the existing licence and replace with the above condition.

7.7 No emissions, including odours, from the activities carried on at the site shall result in an impairment of, or an interference with amenities or the environment beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary.

To be inserted after condition 7.6 of the existing licence.

Amend Condition 9

9.2 Accident Prevention and Emergency Response

9.2.1 The licensee shall, within twelve months of the date of this amendment, ensure that a documented Accident Prevention Policy is in place, which will address the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.

- 9.2.2 The licensee shall, within twelve months of the date of this amendment, ensure that a documented Emergency Response Procedure is in place, which shall address any emergency situation which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.

Delete condition 9.2 of the existing licence and replace with the above condition 9.2.

- 9.4.5 In the event of a complete breakdown of equipment or any other occurrence which results in the closure of the transfer station building, any waste arriving at or already collected at the facility shall be transferred directly to appropriate landfill sites or any other appropriate facility until such time as the transfer station building is returned to a fully operational status. Such a breakdown event will be treated as an emergency and rectified as soon as possible.

To be inserted after condition 9.4.4 of the existing licence.

9.5 Incidents

- 9.5.1 In the event of an incident the licensee shall immediately:-

- (i) carry out an investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
- (ii) isolate the source of any such emission;
- (iii) evaluate the environmental pollution, if any, caused by the incident;
- (iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
- (v) identify the date, time and place of the incident;
- (vi) notify the Agency and other relevant authorities.

- 9.5.2 The licensee shall provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency to:-

- (i) identify and put in place measures to avoid reoccurrence of the incident; and
- (ii) identify and put in place any other appropriate remedial action.

To be inserted after condition 9.4 of the existing licence.

Amend Condition 10

- 10.8 Where compost product contains sewage sludge the licensee shall retain the following records on site:

- (i) A copy of the notifications to the Local Authority as required under Article 8 (1) and Article 8 (3) of SI 148 of 1998 (Waste Management (Use of sewage sludge in agriculture) Regulations, 1998).
- (ii) This shall include, *inter alia*: sludge analysis, records of sludge quantities, sludge properties, treatment type and location/name of the recipient of the sludge (sludge meaning compost containing treated sludge).

To be inserted after condition 10.7 of the existing licence.

Schedules to Licence

A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities

WASTE TYPE	WASTE Unit	MAXIMUM (TONNES PER ANNUM) Note 1
Household and Commercial waste	Transfer Station (including civic waste facility)	53,000
Compostables	Composting Facility	16,200
Waste derived amendment material	Composting Facility	7,000
TOTAL		76,200

Note 1: The individual limitation on waste streams may be varied with the agreement of the Agency subject to the overall limit staying the same.

To replace Schedule A of the existing licence.

C.5 Emission Limits Values for Biofilters

Emission Point reference no: **Biofilter 1, Biofilter 2**

Parameter	Emission Limit Value
Ammonia	50 ppm (v/v)
Hydrogen sulphide	5 ppm (v/v)
Mercaptans	5 ppm (v/v)

To be inserted after Table C.4 in Schedule C of the existing licence.

D.1 Monitoring Locations

Monitoring locations shall be those as set out in page 20, Volume 2 of 3 of the EIS and Drawing No. 2001-114-01-001RevB '1:1000 Site Layout Plan' of the application unless otherwise stated.

Table D.1.1 Monitoring Locations

LANDFILL GAS	PM ₁₀	DUST	NOISE	SURFACE WATER	GROUND WATER	LEACHATE
STATIONS		STATIONS (Note 8)	STATIONS	STATIONS (Note 3)	STATIONS	STATIONS (Note 5)
(Notes 1 & 6)	Note 7	D1	N1	SW1	(Note 4)	L1
		D2	N2	SW2		L2
		D3	N3	SW3		L3 (MH2)
		D4	N4	SW4		L4 (MH3)
		D5	N5	SW5		L5 (BH17)
		D6	N6	SW6		L6 (BH18)
		D7	N7 (Note 2)	SW7		L7 (MH1)

Note 1: Landfill gas monitoring probes at locations shown in Drawing No 2001-114-01-001 RevB '1:1000 Site Layout Plan'

- Note 2:** Noise monitoring stations at locations shown in Drawing No 2001-114-01-001 RevB '1:1000 Site Layout Plan'. N7 additional noise monitoring station to be located in the south eastern corner of the facility.
- Note 3:** Surface Water Monitoring stations at locations shown in Figure 5.1 '1: 15,000 Monitoring Point Location Map (Surface Water & Groundwater)' Volume 2 of the EIS.
- Note 4:** Groundwater Monitoring stations at locations shown in Figure 5.1 '1: 15,000 Monitoring Point Location Map (Surface Water & Groundwater)' Volume 2 of the EIS and those identified in Table 5.2 'Groundwater and Leachate Elevation Data' of Volume 2 of the EIS.
- Note 5:** Leachate monitoring stations referred to in Sections 2.6.1 'Leachate Management Plan' and 5.2 'Hydrogeology', Volume 2 of the EIS. Monitoring Stations to be relabelled as per Table D.1.1.
- Note 6:** Landfill gas monitoring stations for landfill gas combustion plant and flare to be agreed.
- Note 7:** Three locations to be agreed within three months of the date of grant of this licence.
- Note 8:** Locations to include point(s) representative of ambient air quality around the composting facility. Any additional locations to be agreed in writing by the Agency in accordance with Condition 8.2.

To replace Table D.1.1 of the existing licence.

D.9 Monitoring of Emissions to Air

Emission Point Reference No.: **Extraction from composting building/unit.**

Parameter	Monitoring Frequency	Analysis Method/Technique
Dust (mg/m ² per day)	Quarterly ^{Note 1}	Standard Method ^{Note 2}
Odour	Quarterly ^{Note 3}	See Note 3
Bacteria	Annually	Grab sample ^{Note 4}
Aspergillus fumigatus	Annually	Grab sample ^{Note 4}
PM ₁₀ (µg/m ³)	Biannually	See Note 5

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

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

Note 3: Odour measurements shall be by olfactometric measurement and analysis for mercaptans, hydrogen sulphide, ammonia, and amines.

Note 4: Enumeration of colonies to be carried out as described in "Standardised Protocol for the Sampling and Enumeration of Airborne Micro-organisms at Composting Facilities", the Composting Association 1999.

Note 5: As described in prEN12341 "Air Quality - field test procedure to demonstrate reference equivalence of sampling methods for PM10 fraction of particulate matter" or an alternative agreed in writing by the Agency.

Control of Emissions to Air

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Extraction	Continuous with alarm/call-out	Pressure gauge or equivalent approved Pumps/engines
Aeration	Continuous	Oxygen probe
Temperature control of compost	Continuous	Temperature probe

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

Table D.10 Air & Odour Monitoring ^{Note 1}
Biofilters

Emission Point Reference No.: To be Agreed by the Agency

Parameter	Monitoring Frequency	Analysis Method/Technique
Bed Media		
Odour assessment ^{Note 2}	Daily	Subjective inspection
Condition and depth of biofilter ^{Note 3}	Daily	Visual inspection
Moisture content	Biannually	Standard method
PH	Biannually	pH probe
Ammonia	Biannually	Standard Method
Total viable counts	Biannually	Standard Method
Inlet and Outlet Gas		
Ammonia	Biannually	Standard Method
Hydrogen sulphide	Biannually	Standard Method
Mercaptans	Biannually	Standard Method
Amines	Biannually	Standard Method

The test methods in the above schedule have been amended to include reference to Standard Method.

Note 1: Where appropriate all analyses shall be carried out by a competent laboratory using standard and internationally acceptable techniques. The testing laboratory and the testing technique shall be agreed by the Agency in advance.

Note 2: This subjective assessment should be carried out by a staff member immediately upon arriving on-site.

Note 3: The biofilter shall be examined to ensure that no channelling is evident, and that moisture content is adequate. watering, turning, restructuring and the addition of supplementary bed materials, or total bed replacement shall be carried out, as required, subject to bed performance.

Table D.11 Monitoring of Processes
Monitoring of Composting Process

Parameter	Monitoring Frequency	Monitoring equipment/method
<ul style="list-style-type: none"> Composting piles 		
<i>Temperature vs. time</i>	Continuous	Temperature probe/recorder
Oxygen Content	Daily	Oxygen probe with recorder
<ul style="list-style-type: none"> Compost maturation (curing) piles 		
<i>Temperature</i>	Continuous	Temperature probe
<i>Moisture</i>	Daily	Subjective by operator

To be inserted after Table D.8 of Schedule D of the existing licence.

Schedule F: Standards for Compost Quality

Compost Quality

No sample shall exceed 1.2 times the quality limit values set.

[The following criteria (where they apply to compost) are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH₄-N, NO₃-N, pH and dry matter content should also be measured.]

1. Maturity (Compost)

The state of the curing pile must be conducive to aerobic biological activity.

Compost shall be deemed to be mature if it meets two of the following groups of requirements or other maturity tests as may be agreed with the Agency:

1. Respiration activity after four days AT₄ is ≤10mg/O₂ perg dry matter or dynamic respiration index is ≤1,000mg O₂/kg VS per h.
2. Germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90% of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50% in comparison with the control sample.
3. Compost must be cured for at least 21 days; and Compost will not reheat upon standing to greater than 20°C above ambient temperature.

Or

Compost must be cured for a six month period and offensive odours from the compost shall be minimal for the compost to be deemed mature.

2. Trace Elements (Compost) ^{Notes 1, 2 & 3}

Maximum Trace Element Concentration Limits ^{Note 4}

Parameter (mg/kg, dry mass)	Compost Quality Standards ^{Note 5}		Stabilised Biowaste ^{Note 5}
	Class 1	Class 2	
Cadmium (Cd)	0.7	1.5	5
Chromium (Cr)	100	150	600
Copper (Cu)	100	150	600
Mercury (Hg)	0.5	1	5
Nickel (Ni)	50	75	150
Lead (Pb)	100	150	500
Zinc (Zn)	200	400	1500
Polychlorinated Biphenyls (PCB's)	-	-	0.4
Polycyclic Aromatic Hydrocarbons (PAHs)	-	-	3
Impurities >2 mm ^{Note 6}	<0.5%	<0.5%	<3%
Gravel and Stones >5 mm ^{Note 6}	<5%	<5%	-

Note 1: These limits apply to the compost just after the composting phase and prior to mixing with any other materials.

Note 2: Incoming sludges (other than sewage sludges) shall be monitored quarterly (on a client by client basis) for the parameters outlined in this table in addition to selenium (Se) and molybdenum (Mo).

Note 3: Monitoring of arsenic (As) is required if waste timber is used in the composting process.

Note 4: The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

Note 5: Normalised to 30% organic matter content.

Note 6: Compost must not contain any sharp foreign matter measuring over a 2 mm dimension that may cause damage or injury to humans, animals and plants during or resulting from its intended use.

3. Pathogens (Compost)

Pathogenic organism content must not exceed the following limits:

<i>Salmonella spp.</i>	Absent in 50 g	n = 5
<i>Faecal coliforms</i>	≤1000 Most Probable Number (MPN) in 1g	n = 5

Where: n = Number of samples to be tested.

4. Monitoring (Compost)

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

To replace Schedule *F* of the existing licence.

This technical amendment shall be cited as Amendment A, (in pursuance of Section 42B(1) of the Waste Management Acts 1996 to 2005) to Waste Licence Register No.W0014-01.

Sealed by the seal of the Agency on this the 16th day of July 2007

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

Dara Lynott Director