D/E scan

Josephine Kennedy

W0178-02

From: Michael Owens
Sent: 28 August 2009 11:15
To: Josephine Kennedy
Subject: FW: Article 16(3) notice for information on asbestos
Attachments: CRRL Asbestos Letter 11-05-2009a.pdf; W0178-02 - Article 16(3)(a)(i) 270809.pdf

Jo,

This is the reply that I received from Greenstar (GS) to an Article 16 that I sent out yesterday. I have attached a copy of the Article 16 as well.

It is for GS waste licence W0178-02.

These documents need to be entered into eDMS and copies put on public file. I have copies myself.

Give me a shout if you need.

Thanks,

Mick.

Michael Owens

☎ (+353 (0)53 9170702 (DD)
✉ m.owens@epa.ie

From: Colin Peebles [mailto:colin.peebles@greenstar.ie]
Sent: 28 August 2009 08:50
To: Michael Owens
Cc: Margaret Heavey; Michael Bergin
Subject: FW: Article 16(3) notice for information on asbestos

Michael,

Please find attached a copy of the submission made on 11th may 2009 regarding asbestos disposal at East Galway Landfill, as requested in your letter of 27th August. We tried to send this to you yesterday evening but it was bounced back to us by your mail box. I have therefore reduced the file size and would appreciate it if you could confirm receipt of the file.

Regards

Colin Peebles
Greenstar Ltd
T: 0867704241

From: Margaret Heavey
Sent: 27 August 2009 17:48

To: Colin Peebles; Michael Bergin
Subject: FW: Article 16(3) notice for information on asbestos

Colin,

This seems to be bouncing back from the EPA mail box. Can you please arrange for it to be sent in an appropriate format to Mr Owens first thing in the morning?

Regards,

Mgt

Margaret Heavey, Head of Landfill Development and Operations
Greenstar Ltd, Fassaroe, Bray, Co. Wicklow.
T: +353(01)2947900; M: +353 (0)86 3805196; F: +353 (01)2947990
E: margaret.heavey@greenstar.ie W: www.greenstar.ie

Greenstar is proud to sponsor the Green Awards 2009. www.greenawards.ie

P Before printing, think about the environment

From: Margaret Heavey
Sent: 27 August 2009 17:39
To: Michael Owens
Cc: Michael Bergin; Colin Peebles
Subject: RE: Article 16(3) notice for information on asbestos

Michael,

Please find attached submission as requested.

Regards,

Mgt

Margaret Heavey, Head of Landfill Development and Operations
Greenstar Ltd, Fassaroe, Bray, Co. Wicklow.
T: +353(01)2947900; M: +353 (0)86 3805196; F: +353 (01)2947990
E: margaret.heavey@greenstar.ie W: www.greenstar.ie

Greenstar is proud to sponsor the Green Awards 2009. www.greenawards.ie

P Before printing, think about the environment

From: Michael Owens [mailto:m.owens@epa.ie]
Sent: 27 August 2009 17:29
To: Margaret Heavey
Subject: Article 16(3) notice for information on asbestos

Hello Margaret,

As discussed earlier, please find attached a copy of the above notice.

Please call me at the direct number below if you have any queries.

Regards,

Michael.

Michael Owens
Office of Climate Change, Licensing and Resource Use
Environmental Protection Agency
Johnstown Castle Estate
Wexford
Ireland

☎ (+353 (0)53 9170702 (DD)
✉ m.owens@epa.ie

28/08/2009

##########

Greenstar Ltd.
Registered address: Burton Court, Burton Hall Road, Sandyford, Dublin 18, Ireland.
Business address: Unit 6, Ballyogan Business Park, Ballyogan Road, Sandyford, Dublin 18, Ireland.
Registered in Ireland.
Registered Number: 325120

##########

greenstar
setting the standard

Greenstar Limited
Unit 6, Ballyogan Business Park,
Ballyogan Road, Sandyford, Dublin 18

Tel: +353 1 294 7900
Fax: +353 1 294 4131

V.A.T. No. IE6345120M

Dr. Michael Henry
Environmental Protection Agency
Regional Inspectorate
John Moore Road
Castlebar
Co. Mayo

11th May, 2009

Re: Waste Licence No. W0178-01
Acceptance of Construction Materials Containing Asbestos (CMCA)

Dear Dr. Henry,

I refer to ongoing correspondence between the Agency and Greenstar with respect to the acceptance of Construction Materials Containing Asbestos (cement bonded asbestos) at the Connaught Regional Residual Landfill Site (CRRL).

It remains the view of Greenstar that the facility is already licensed to accept cement bonded asbestos and we request the Agency's urgent approval of this. In order to assist your decision, we wish to point out the following:

Waste Licence Application

1. In the Waste Licence Application Form – Disposal Activities (Landfill), submitted to the Agency in September 2002, it is clearly stated in "Table E.1.4 Other Wastes" that the facility would be accepting 1,000tpa of ***"Asbestos Based Construction Materials"***. The relevant page (p37) of the application can be found at Appendix 1 attached. Greenstar maintains that the standard application form was completed correctly and unambiguously in accordance with the guidance notes.

2. The Agency approved the acceptance of cement bonded asbestos at the facility in granting the Waste Licence, namely Condition 5.10. A copy of relevant sections of the licence is attached can be found at Appendix 2 attached. The form *"non-hazardous asbestos waste"* appears to have been coined in the drafting of the licence and was not proffered by Greenstar at any time. *"Asbestos waste suitable for disposal at non-hazardous landfill"* would be a more correct term.

3. Section 2.3.3 of Council Decision 2003/33/EC states ***"Construction materials containing asbestos and other suitable asbestos waste may be landfilled at landfills for non-hazardous wastes in accordance with Article 6(c)(iii) of the Landfill Directive without testing"***. Copies of the relevant sections of the decision are attached at Appendix 3.

4. Volume 1 – Non Technical Summary, Revised May 2003, and submitted in response to the Article 14(2)(b)(ii) Notice in May 2003 states at (page ix) that;
   "Only waste classified as suitable for acceptance at a non-hazardous landfill, in accordance with Council Decision 2003/33/EC, will be accepted at the proposed facility"

The Non Technical Summary reiterates Greenstar's intention to restrict the materials disposed at the facility to those that are compliant with the Council Decision and this includes CMCA.

5. The EPA Technical Guidance on *"The Landfilling of Asbestos Waste (2006)"* states that:

   "Certain hazardous waste is suitable for disposal in non-hazardous landfills: so called stable non-reactive hazardous waste (SNRHW).... CMCA can be determined to meet the definition of a stable non-reactive hazardous waste suitable for disposal in a non-hazardous landfill provided it is landfilled in accordance with the requirements of Section 2.3.3 of the Annex to the Council Decision, 2003/33/EC, on the criteria and procedures for the acceptance of waste at landfills".

   The proposed acceptance of CMCA at CRRL is consistent and compliant with the Technical Guidance a copy of which is attached at Appendix 4.

6. The glossary of terms (Interpretation) contained within the licence for CRRL states

   "Asbestos Waste: Includes bonded asbestos, such as tiles, which are not classified as hazardous waste and which are authorised for disposal at the facility".

   There is no use of the term *"Non-hazardous asbestos waste"* in the Interpretation section of the licence. The above description of bonded asbestos is in full agreement with the EPA Technical Guidance referred to above and Council Decision 2003/33/EC which state that bonded asbestos can be disposed in a non-hazardous landfill. Please refer to Appendix 2 for further details.

Planning Process

7. Council Decision 2003/33/EC was also referred to at the An Bord Pleanála Oral Hearing of 9th -11th March 2004 (day 3), chaired by Inspector Robert Ryan, where the acceptance of asbestos waste at the facility was questioned (The issue was raised by Mr. David Malone on Page 113 of the Oral Hearing Transcript – copy attached at Appendix 5). The Greenstar response by Mr Fitzsimons (Pages 115 & 116 of Oral Hearing Transcript – copy attached) references the Council Decision above. This clearly states Greenstar's intention that the facility would accept Construction Materials Containing Asbestos.

8. In conjunction with the above, please also note the An Bord Pleanála Inspector's Report based on site inspections of February and March 2004 which contains reference to the intended acceptance of asbestos waste at the site (copy attached at Appendix 6).

Related Waste Facility References

9. We would also refer to the waste licence issued to Kerry County Council for the landfill facility at Muingnaminnane, Tralee (W0001-03). The use of *"Non-hazardous asbestos waste"* can be noted in the glossary at the beginning of this licence. It reads as follows;
   "Non Hazardous Asbestos Waste: Includes bonded asbestos, such as tiles, which are not classified as hazardous and which authorised for disposal at the facility".

   This definition of non hazardous asbestos waste is exactly the same as the definition for asbestos waste used in the CRRL licence as illustrated in the point above.

However, the section of the Muingnaminnane licence (section 5.7.2) which deals with the acceptance of the waste stream refers to **"Asbestos Waste"**.

With the exception of the last paragraph of this section (which states the total amount to be accepted) it should be noted that the wording is exactly the same as that for KTK landfill. Copies of the relevant sections of the Kerry County Council licence are attached at Appendix 7.

10. Notwithstanding the above information regarding the licensed acceptance of Asbestos Waste at Muingnaminnane, it has also come to our attention that the acceptance of asbestos containing materials was never applied for by Kerry County Council. Appendix 8 contains a copy of the Waste Licensing Application Form for W1-3, please refer to the photocopied pages detailing the nature and quantities of wastes accepted, in particular p33, which states that the site did not currently accept asbestos at the time of the application nor was it proposed to be accepted, yet the Agency issued licence contains a condition (5.7.2) permitting its disposal.

    We fail to see how a site that did not apply to accept asbestos waste can be licensed to do so whilst Greenstar at numerous points during the licensing process made it clear that it was intended to accept such wastes yet we are being prevented by the Agency from doing so.

11. Until it ceased accepting waste in October 2008, Greenstar's non-hazardous KTK landfill successfully accepted CMCA waste, with numerous EPA audits confirming complete compliance with the licence conditions. With the exception of the terminology ***"non-hazardous"*** within the CRRL licence, the wordings for acceptance of asbestos waste at both sites is almost identical. The relevant wordings from each of the licences are attached at Appendices 2 & 9 with the relevant sections highlighted.

National Policy

12. The National Hazardous Waste Management Plan (2001) set out national policy on the management of hazardous waste and has identified self sufficiency in hazardous waste as a long term priority (Section 9.8). Section 6.4 of the NHWMP states that ***"Landfill capacity should be available for all asbestos waste"*** (copy attached at Appendix 10).

    Currently there are no landfills in Ireland accepting asbestos containing wastes. CRRL would provide a much needed outlet and reduce the need for costly export of this material.

13. The National Hazardous Waste Management Plan 2008 – 2012 makes a number of points on the handling of asbestos wastes in Ireland, including those below;
    - Acknowledgement that ***"substantial quantities of asbestos waste are still managed illegally"***. (Section 4.2.2)
    - A strategic need for ***"Development of landfill capacity to manage non-recoverable and non-combustible hazardous wastes and residues, including asbestos"*** (Section 6.2)
    - ***"Asbestos is the single largest hazardous waste stream that requires landfill disposal"*** (section 6.5)
    - ***"...it appears appropriate that providing landfill capacity for asbestos waste should be actively promoted..."*** (Section 6.5)
    - ***"...capacity for up to 20,000 tonnes of asbestos waste per annum is recommended for capacity planning purposes"*** (Section 6.5)
    - ***"It is further recommended that at least one other non-hazardous landfill facility be authorised to accept CMCA. Such a facility would be expected to provide (at least) a "regional" service to supplement a***

region or regions that are more distant from a national facility. A capacity of up to 5,000 tonnes of CMCA per annum should be accommodated" (Section 6.5)

- One of the consequence of not implementing the plan is quoted as ***"hazardous waste landfill capacity will not become available, ensuring that large quantities of asbestos waste in particular will continue to be exported or disposed of in an unauthorised manner"*** (section 8.3)

Copies of the above referenced sections can be found at Appendix 11.

14. The National Waste Report 2007 states that a total of 11,494 tonnes of asbestos waste was produced for the year. Of this a total of 6,168 tonnes (54%) was exported for disposal. The recent closure of KTK landfill will push this total closer to 100%. This is an unsustainable process that is costly, detrimental to the environment, in contrast to the proximity principle and will encourage increased illegal fly tipping of asbestos wastes. A copy of the relevant section of the National Waste Report can be found at Appendix 12 attached.

CRRL Proposal

15. The procedures for CMCA disposal at CRRL are identical to the tried and tested procedures successfully employed at KTK which were approved by the Agency. These have previously been submitted to the Agency for approval. A further copy of the procedure is attached at Appendix 13.

16. The construction of the asbestos bay will be in full accordance with the details set down in the UK Environment Agency Landfill Regulatory Directive Guidance Note 11 entitled:
    a. *The Disposal in Landfills for Non-Hazardous Waste of:*
        i. *Stable, Non-Reactive Hazardous Wastes*
        ii. *Asbestos Wastes*
        iii. *Waste with High Sulphate or Gypsum Contents*

17. Following the closure of KTK to commercial waste landfilling there are now no suitable outlets for CMCA in Ireland, meaning that any CMCA arising will require to be shipped overseas. This is in stark contrast to the proximity principle which requires that waste should be disposed of as near as possible to its point of origin.

18. As a result of the altered status of KTK resulting in the termination of the competitive CMCA disposal outlet it can also be assumed that because of high export costs the problems of illegal fly-tipping of CMCA may be exacerbated, an issue that has been recognised by the National Hazardous Waste Management Plan 2008-2012. Confirmation that CRRL can accept CMCA waste will help provide a much needed outlet for this waste stream.

16. We have also re-visited the relevant documentation associated with the acceptance of waste at the site, namely the Waste Licence Application and associated attachments, the response to the Article 14(2)(b)(ii) Notice and the EIS and associated attachments and can find no use of the term ***"non-hazardous asbestos waste"*** at any time during the application procedure on the part of Greenstar, or for that matter the EPA, until the issue of the waste licence.

17. We would also note that the Report of the Technical Committee on Objections to Licence Conditions refers at Section B1 to the acceptance of asbestos waste in response to an objection stating that the proposed acceptance of asbestos waste was not included in the non-technical summary of the EIS. It is noted that the Technical Committee state that they are ***"...satisfied that the assessment of the application and EIS was in accordance with relevant legislation..."***. We would again refer

you to the waste application stating the acceptance of asbestos based construction materials at the site.

Notwithstanding the Agency's use of "*Non-Hazardous Asbestos Waste*" in the wording of the licence, it can be clearly seen from the above information that CRRL is indeed already licensed to accept CMCA and as such we respectfully request written approval from the Agency to commence with the acceptance of said waste stream.

Should you require any further information, please do not hesitate to contact me.

Yours Sincerely

Donal Monahan,
Landfill Development,
For Greenstar Ltd.

List of Appendices

1. Excerpt from CRRL Waste Licence Application Form
2. Relevant Sections from CRRL Waste Licence, W0178-01
3. Excerpts from Council Decision 2003/33/EC
4. EPA Technical Guidance: The Landfilling of Asbestos Waste
5. Excerpt from An Bord Pleanala Oral hearing
6. Excerpt from An Bord Pleanala Inspector's Report
7. Relevant Sections from Waste Licence W0001-03
8. Excerpt from Waste Licence Application W0001-03
9. Relevant Sections from KTK Waste Licence, W0081-03
10. Excerpt from National Hazardous Waste Management Plan, 2001
11. Excerpt from National Hazardous Waste Management Plan, 2008-2012
12. Excerpt from National Waste Report, 2007
13. CRRL Asbestos Disposal Procedure

Appendix 1.

Excerpt from CRRL Waste Licence Application Form

TABLE E.1.4 OTHER WASTES

OTHER WASTES	Check (if accepted)	Tonnes per Annum	Check (if proposed to be accepted)	Tonnes per Annum	Additional Information
Plasterboard and Plaster	☐		☒	1,500	
Dried Paints, Dried Varnish & Dried Lacquer	☐		☐		
Foundry Sand & Sand Blasting Residues	☐		☐		
Glass	☐		☒	1,000	
Latex & Rubber Solutions	☐		☐		
Solid, Fully Polymerised Plastics	☐		☒	3,000	
Solid Rubber (excluding tyres)	☐		☒	500	
Empty Containers	☐		☐	1,500	
Non-Hazardous Ferrous and Non-Ferrous Metals			☒	3,000	
Asbestos Based Construction Materials*	☐		☒	1,000	
OTHER WASTES (APPLICANT TO SPECIFY)	**Check (if accepted)**		**Check (if proposed to be accepted)**		**Additional Information**
Other residual waste from waste recovery facilities	☐		☒	5,000	
Others non-hazardous waste mainly consisting of composites, fine elements such as unclassified non-combustibles and miscellaneous combustibles	☐		☒	8,000	
Other plastics	☐		☒	16,000	
	☐		☐		
	☐		☐		

Appendix 2.

Relevant Sections from CRRL Waste Licence, W0178-01

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

WASTE LICENCE
LANDFILL FOR NON-HAZARDOUS WASTE

Waste Licence Register No:	178-1
Licensee:	Greenstar Recycling Holdings Limited
Location of Facility:	Killagh More, Ballybaun (E.D. Killaan), Ballintober (E.D. Killaan), Ballinasloe, County Galway

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 Acts, 1996 to 2003 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 and objections received and the reports of its inspectors.

INTERPRETATION

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Acts, 1996 to 2003 (the Acts), unless otherwise defined in this section.

Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
Annually	All or part of a period of twelve consecutive months.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence, including any other material submitted to the Agency in writing by the licensee between the date of the application and the date of grant of this licence.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
Asbestos Waste	Includes bonded asbestos, such as tiles, which are not classified as hazardous waste and which are authorised for disposal at the facility.
BAT	Best Available Techniques as defined in Article 2(11) of Council Directive 96/61/EC concerning integrated pollution prevention and control.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
Bund	A structure to provide containment for any loss of liquid from a storage tank and associated pipework. The Agency's Landfill Design Manual (draft) sets forth design criteria.
CEN	(Comité Européen de Normalisation - European Committee for Standardisation.
Condition	A condition of this licence. In any case where this licence refers to a numbered condition, the reference shall be taken to mean the condition and any sub-condition therein which the context of the reference requires that reference is made to.
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.

Impulsive Noise	As defined in British Standard BS 4142, 1990. "Method for rating industrial noise affecting mixed residential and industrial areas".
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	Greenstar Recycling Holdings 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.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Noise Sensitive Location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Night-time	2200 hrs to 0800 hrs.
Oil Separator	Device installed according to the draft European Standard prEN 858 (Installations for the separation of light liquids, eg. oil and petrol).
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc which may be recycled.
Quarterly	At approximately three monthly intervals.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
Specified Emissions	Those emissions listed in *Schedule C: Emission Limits*, of this licence.
Specified Engineering Works	Those engineering works listed in *Schedule B: Specified Engineering Works*, of this licence.
SOP	(Standard Operating Procedure)
Treated Sludge	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use.
Telemetry	Automatic transmission and measurement of data from remote sources by

5.6.4 General maintenance of landscaping measures shall be carried out as outlined in the EIS in Section 12 (vi) of the 'Article 12 &13 Response' which was received by the Agency on 28/5/03.

5.7 Landscaping implementation programme

5.7.1 The licensee shall submit a landscaping implementation programme (including proposed timeframes) for the agreement of the Agency prior to the commencement of construction of the facility. This should include the following:

(i) Replacement and/or improvement of individual trees, tree lines/hedgerows and broadleaf woodland as outlined in Section 4.6.2 of the EIS. This shall include details on tree types, tree ages and locations.

(ii) Perimeter planting for the purpose of screening landfill construction and operation. This perimeter planting shall be put in place as soon as possible after the date of grant of licence and shall consist of the tree mix outlined in Drawing No. 336 (Rev. B), entitled 'Restoration Plan'.

(iii) Emplacement and planting of berms for the purpose of screening the borrow area, as referred to in Section 12 (ii) of the 'Article 12 &13 Response' received by the Agency on 28/5/03.

(iv) The installation of a berm along a portion of the eastern boundary of the facility for the purposes of screening landfill construction and operation. This berm shall be no lower than 3m high and shall be seeded/landscaped with tree mix 1A as outlined in Drawing No. 336 (Rev. B), entitled 'Restoration Plan'. The implementation programme shall include a map detailing the location and extent of the berm.

5.8 Operational Controls

5.8.1 The landfill shall be filled in accordance with the three phase sequence specified in Drg. No. 1501072/01/320 (Rev. A).

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

5.8.3 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over without the prior agreement of the Agency.

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

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

5.8.6 Scavenging shall not be permitted at the facility.

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

5.8.8 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

5.8.9 Fuels shall be stored only at appropriately bunded locations on the facility.

5.8.10 All tanks and drums shall be labelled to clearly indicate their contents.

5.8.11 No smoking shall be allowed on the facility other than in the area of the administration building.

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

5.9 Inert Waste

5.9.1 Only inert waste as outlined in *Schedule F: Acceptance of Inert Waste for Recovery*, shall be accepted at the facility, unless otherwise agreed by the Agency.

5.10 Non-hazardous Asbestos Waste

5.10.1 Only non-hazardous asbestos waste shall be disposed of at the facility.

5.10.2 Non-hazardous asbestos based construction and demolition waste must be double wrapped in heavy gauge plastic which is clearly labelled to indicate the presence of asbestos.

5.10.3 Disposal of non-hazardous asbestos waste shall be into prepared bays or trenches of at least 2 metres in depth.

5.10.4 Deposited non-hazardous asbestos waste shall be covered immediately with at least 250mm of suitable material. At the end of the day, the waste shall be covered with a minimum of 500mm of suitable material.

5.11 Off-site Disposal and Recovery

5.11.1 Waste sent off-site for recovery or disposal shall be conveyed only by a waste contractor agreed by the Agency.

5.11.2 All waste transferred from the facility shall be transferred only to an appropriate facility agreed by the Agency.

5.11.3 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.

5.12 Borrow Area

5.12.1 A 3m high berm shall be constructed across the western boundary of the borrow area prior to removal of material from the borrow area. The berm shall be grassed immediately after completion.

5.12.2 Planting (for the purposes of screening) shall also be carried out around the perimeter of the borrow area prior to extraction of material from the borrow area.

5.12.3 During the period of operation, the borrow area and all stockpiles shall be maintained so as to minimise dust and noise generation. This shall include the following measures:

i) Road and stockpile wetting;

ii) Use of dust covers/tarpaulins;

iii) Carrying out of temporary seeding of exposed areas where possible; and

iv) Siting of stockpiles to provide acoustic screening.

5.13 Leachate Management

5.13.1 Leachate levels in the waste shall not exceed a level of 1m over the top of the liner at the base of the landfill.

5.13.1 The frequency of leachate removal/discharge from the leachate holding tank shall be such that a minimum freeboard of 0.75m shall be maintained in the holding tank at all times.

5.13.2 The level of leachate in the pumping chambers, lined cells and leachate holding tank shall be monitored continuously by a system that shall automatically activate leachate pumps to maintain leachate at the required level. A high level alarm shall also be installed in the punping chambers and the leachate holding tank.

5.13.3 Leachate stored in the leachate holding tank shall be disposed of by tankering off-site in fully enclosed road tankers to a Waste Water Treatment Plant agreed in advance by the Agency.

5.13.4 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency and shall be undertaken only within cells which have been lined and capped to the satisfaction of the Agency.

Appendix 3.

Excerpts from Council Decision 2003/33/EC

2.3.3. *Asbestos waste*

Construction materials containing asbestos and other suitable asbestos waste may be landfilled at landfills for non-hazardous waste in accordance with Article 6(c)(iii) of the Landfill Directive without testing.

For landfills receiving construction materials containing asbestos and other suitable asbestos waste the following requirements must be fulfilled:

— the waste contains no other hazardous substances than bound asbestos, including fibres bound by a binding agent or packed in plastic,

— the landfill accepts only construction material containing asbestos and other suitable asbestos waste. These wastes may also be landfilled in a separate cell of a landfill for non-hazardous waste, if the cell is sufficiently self-contained,

— in order to avoid dispersion of fibres, the zone of deposit is covered daily and before each compacting operation with appropriate material and, if the waste is not packed, it is regularly sprinkled,

— a final top cover is put on the landfill/cell in order to avoid the dispersion of fibres,

— no works are carried out on the landfill/cell that could lead to a release of fibres (e.g. drilling of holes),

— after closure a plan is kept of the location of the landfill/cell indicating that asbestos wastes have been deposited,

— appropriate measures are taken to limit the possible uses of the land after closure of the landfill in order to avoid human contact with the waste.

For landfills receiving only construction material containing asbestos, the requirements set out in Annex I, point 3.2 and 3.3 of the Landfill Directive can be reduced, if the above requirements are fulfilled.

2.4. Criteria for waste acceptable at landfills for hazardous waste

2.4.1. *Leaching limit values*

The following leaching limit values apply for granular waste acceptable at landfills for hazardous waste, calculated at L/S = 2 and 10 l/kg for total release and directly expressed in mg/l for C_0 (in the first eluate of percolation test at L/S = 0,1 l/kg). Granular wastes include all wastes that are not monolithic. Member States shall determine which of the test methods and corresponding limit values in the table should be used.

Components	L/S = 2 l/kg	L/S = 10 l/kg	C_0 (percolation test)
	mg/kg dry substance	mg/kg dry substance	mg/l
As	6	25	3
Ba	100	300	60
Cd	3	5	1,7
Cr total	25	70	15
Cu	50	100	60
Hg	0,5	2	0,3
Mo	20	30	10
Ni	20	40	12
Pb	25	50	15

(c) hospital and other clinical wastes arising from medical or veterinary establishments, which are infectious as defined (property H9 in Annex III) by Directive 91/689/EEC and waste falling within category 14 (Annex I.A) of that Directive.

(d) whole used tyres from two years from the date laid down in Article 18(1), excluding tyres used as engineering material, and shredded used tyres five years from the date laid down in Article 18(1) (excluding in both instances bicycle tyres and tyres with an outside diameter above 1 400 mm);

(e) any other type of waste which does not fulfil the acceptance criteria determined in accordance with Annex II.

4. The dilution of mixture of waste solely in order to meet the waste acceptance criteria is prohibited.

Article 6

Waste to be accepted in the different classes of landfill

Member States shall take measures in order that:

(a) only waste that has been subject to treatment is landfilled. This provision may not apply to inert waste for which treatment is not technically feasible, nor to any other waste for which such treatment does not contribute to the objectives of this Directive, as set out in Article 1, by reducing the quantity of the waste or the hazards to human health or the environment;

(b) only hazardous waste that fulfils the criteria set out in accordance with Annex II is assigned to a hazardous landfill;

(c) landfill for non-hazardous waste may be used for:

(i) municipal waste;

(ii) non-hazardous waste of any other origin, which fulfil the criteria for the acceptance of waste at landfill for non-hazardous waste set out in accordance with Annex II;

(iii) stable, non-reactive hazardous wastes (e.g. solidified, vitrified), with leaching behaviour equivalent to those of the non-hazardous wastes referred to in point (ii), which fulfil the relevant acceptance criteria set out in accordance with Annex II. These hazarouds wastes shall not be deposited in cells destined for biodegradable non-hazardous waste.

(d) inert waste landfill sites shall be used only for inert waste.

Article 7

Application for a permit

Member States shall take measures in order that the application for a landfill permit must contain at least particulars of the following:

(a) the identity of the applicant and of the operator when they are different entities;

(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 impact assessment is required under Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment [1], the information provided by the developer in accordance with Article 5 of that Directive;

(i) the financial security by the applicant, or any other equivalent provision, as required under Article 8(a)(iv) of this Directive.

Following a successful application for a permit, this information shall be made available to the competent national and Community statistical authorities when requested for statistical purposes.

Article 8

Conditions of the permit

Member States shall take measures in order that:

(a) the competent authority does not issue a landfill permit unless it is satisfied that:

(i) without prejudice to Article 3(4) and (5), the landfill project complies with all the relevant requirements of this Directive, including the Annexes;

[1] OJ L 175, 5.7.1985, p. 40. Directive as amended by Directive 97/11/EC (OJ L 73, 14.3.1997, p. 5).

Appendix 4.

EPA Technical Guidance: The Landfilling of Asbestos Waste

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Technical Guidance

Subject: The Landfilling of Asbestos Waste

Key Words:
Asbestos
Landfill
Waste
Hazardous

Responsibility:
The Office of Licensing and Guidance
The Office of Environmental Enforcement
Landfill Operators

Status of Document: Operational, December 2006

Authority for Document: Article 48(1) of the Waste Management (Licensing) Regulations, 2004

Introduction

Council Decision 2003/33/EC establishes criteria and procedures for the acceptance of granular waste at landfills pursuant to Article 16 and Annex II of the Directive 1999/31/EC on the landfill of waste.

The recent implementation of Section 2 of Council Decision 2003/33/EC on establishing criteria and procedures for the acceptance of waste at landfills has permitted (from 16th July 2005) the landfilling of suitable asbestos waste, a hazardous material, in non-hazardous landfills (but only if the cell is sufficiently self-contained). However, no limits are specified regarding the amount of this waste type that can be deposited.

Article 48(1) of the Waste Management (Licensing) Regulations 2004 require the classification of all landfill facilities. It is therefore necessary to articulate how much suitable hazardous waste can be deposited in a non-hazardous landfill before its designation has to be altered. There are also EIA implications that need to be considered in relation to the acceptance of hazardous waste at a non-hazardous landfill. This document sets out a discussion basis and guidance in relation to the classification of landfills accepting asbestos waste.

Asbestos

Asbestos is a term used to describe a number of naturally occurring fibrous silicate minerals. There are three main types of asbestos; chrysolite (white asbestos), amosite (brown asbestos) and crocidolite (blue asbestos). Asbestos is known for its unique properties of being resistant to abrasion, inert to acid and alkaline solutions and stable at high temperatures and because of these attributes it was used widely in construction and industry. Most common applications include moulded thermal lagging around pipes and boilers, sprayed asbestos fire protection, insulation panels and ducts as well as cement bonded asbestos used as roofing and gutters.

The proportion of asbestos in construction materials can vary hugely between products. Asbestos insulation and lagging can contain up to 85% asbestos. Asbestos cement, depending on its use, can contain anything from 20-30% asbestos for roofing to 50% asbestos for products used near heat sources such as fireplaces (from 'Guidance for Controlling Asbestos-Containing Materials in Buildings' US, EPA). Construction Material Containing Asbestos (CMCA) is classified as hazardous waste under European waste legislation, and a specific EWC code applies (EWC 17-06-05).

Landfilling Rules

At the moment there is no approved hazardous waste landfill in the State. However, certain hazardous waste is suitable for disposal in non-hazardous landfills: so called stable non-reactive hazardous waste (SNRHW). Article 6(c)(iii) of Council Directive 1999/31/EC on the landfill of waste specifies those wastes which may be accepted in a non-hazardous landfill and allows for certain hazardous wastes to be deposited provided they are stable and non-reactive.

> *(c) [a] landfill for non-hazardous waste may be used for:*
>
> *(i) municipal waste;*
>
> *(ii) non-hazardous waste of any other origin, which fulfill the criteria for the acceptance of waste at landfill for non hazardous waste set out in accordance with Annex II;*
>
> *(iii) stable, non-reactive hazardous wastes (e.g. solidified, vitrified), with leaching behaviour equivalent to those of the non-hazardous wastes referred to in point (ii), which fulfil the relevant acceptance criteria set out in accordance with Annex II. These hazardous wastes shall not be deposited in cells destined for biodegradable non-hazardous waste,*

CMCA can be determined to meet the definition and criteria of a stable[1] non-reactive hazardous waste suitable for disposal in a non-hazardous landfill provided it is landfilled in accordance with the requirements of Section 2.3.3 of the Annex to the Council Decision, 2003/33/EC, on the criteria and procedures for the acceptance of waste at landfills.

> *2.3.3 Asbestos waste*
> *Construction materials containing asbestos and other suitable asbestos waste may be landfilled at landfills for non-hazardous waste in accordance with Article 6(c)(iii) of the Landfill Directive without testing. For landfills receiving construction materials containing asbestos and other suitable asbestos waste the following requirements must be fulfilled:*
> - *the waste contains no other hazardous substances than bound asbestos, including fibers bound by a binding agent or packed in plastic,*
> - *the landfill accepts only construction material containing asbestos and other suitable asbestos waste. These wastes may also be landfilled in a separate cell of a landfill for non-hazardous waste, if the cell is sufficiently self-contained,*
> - *in order to avoid dispersion of fibres, the zone of deposit is covered daily and before each compacting operation with appropriate material and, if the waste is not packed, it is regularly sprinkled,*
> - *a final top cover is put on the landfill/cell in order to avoid the dispersion of fibres,*
> - *no works are carried out on the landfill/cell that could lead to a release of fibres (e.g. drilling of holes),*
> - *after closure a plan is kept of the location of the landfill/cell indicating that asbestos wastes have been deposited,*
> - *appropriate measures are taken to limit the possible uses of the land after closure of the landfill in order to avoid human contact with the waste.*
>
> *For landfills receiving only construction material containing asbestos, the requirements set out in Annex 1, point 3.2 and 3.3 of the Landfill Directive can be reduced, if the above requirements are fulfilled.*

How Much Hazardous Waste Can Be Accepted At A Non-Hazardous Facility?
No limits are specified in the Directive regarding the amount of stable non-reactive hazardous waste that can be accepted at a non-hazardous facility.

Furthermore, both EU and National (Article 48, Waste Management (Licensing) Regulations, 2004) legislation states that every landfill has to be classed as inert, hazardous or non-hazardous but no guidance or threshold limits are given.

It is, therefore, necessary to determine what amount of stable non-reactive hazardous waste can be deposited at a facility classified and designed as a non-hazardous facility before that classification and design must be revised to a hazardous class facility. Of particular significance in this need to determine a limit, is that hazardous waste, unlike other waste types, generally does not degrade nor does the hazardous classification diminish when placed in a landfill. Such waste will represent a perpetual risk, and consequently facilities will need active and sustained management for the foreseeable future. This kind of a risk profile is not normally attached to a conventional non-hazardous waste facility.

---

[1] *The term stable, does not mean that the waste is stabilized as provided in European Commission Decision (2001/118/EC) amending Decision 2000/532/EC as regards the list of wastes. That defines stabilized wastes to be ones that have been treated so that they are no longer hazardous (i.e., stabilized wastes have had the hazard removed, whereas, in stable hazardous wastes the hazard is still present).*

It is also important to note the requirements of the Environmental Impact Assessment Regulations, (1989 to 2001), Part I, Class 9 which states that "*A waste disposal installation for the incineration or chemical treatment of hazardous waste, or the filling of land with such waste*" is considered to be a development for the purposes of these regulations. Council Decision of 23 July 2001 amending Commission Decision 2000/532/EC as regard the list of wastes (2001/573/EC) has classified CMCA waste as a hazardous waste. This further reiterates the need for the establishment of limits to ascertain how much stable non-reactive hazardous waste can be accepted at a non-hazardous landfill before it substantially alters the classification of that landfill and/or triggers the requirement for an Environmental Impact Statement (EIS).

Having regard to the arguments advanced, and the hazardous classification of the material, the view has been taken that where a non-hazardous landfill proposes to accept more than 10% (total intake) or 50,000 tonnes (whichever is the least) of stable non-reactive hazardous waste its classification will change to hazardous - if not for the entire landfill but at the very least for the cell containing the hazardous waste. Moreover, the Local Authority in whose functional area the facility is situated should be made aware of the requirements of the Environmental Impact Assessment Regulations, (1989 to 2001), Part I, Class 9.

The reasoning for these particular limits is that the specific engineering requirements of a separate cell for 50,000 tonnes of hazardous waste would be economically and technically feasible. The 10% is based on the view that from an operational control perspective any waste stream contributing >10% intake is significant with respect to the classification and risk profile of a site.

Additional Matters

A facility that accepts SNRHW is unlikely to be in a position to surrender its licence - as the hazardous waste, as cited above, will represent a perpetual risk. Consequently, there is a need for sustained institutional control to ensure the deposited waste remains undisturbed. The financing of such aftercare must be facilitated into the costing structure for the site.

Additionally, and as stated earlier the environmental risk profile for the site changes when hazardous waste is deposited. This will influence the indemnities required for both accidental and planned liabilities.

Comments and Feedback

Comments and feedback are welcome on these guidelines and should be addressed to Dr. Karen Creed, Office of Licensing and Guidance, P.O. Box 3000, Environmental Protection Agency, Johnstown Castle Estate, Wexford.

Appendix 5.

Excerpt from An Bord Pleanala Oral Hearing

PUBLIC INQUIRY IN RELATION TO THE CONSTRUCTION OF

AN ENGINEERED LANDFILL SITE FOR RESIDUAL WASTE

AND ANCILLARY FACILITIES, KILLAGH MORE, KILCONNELL,

BALLINASLOE, CO. GALWAY

HEARD BEFORE THE INSPECTOR,

MR. ROBERT RYAN

ON THURSDAY, 11TH MARCH 2004 - DAY 3

I hereby certify the following to be a true and accurate transcript of recordings of the evidence in the above-named action.

Patricia Myles.

be paid to. However, the developer clearly recognises the interests of the local community in this issue, that's why the condition relating to the setting up of the Liaison Committee was not appealed. That is why, in our suggested wording, there is express reference to that Community Liaison Committee deciding upon how the money shall be effectively spent. The only role effectively for the Local Authority is as a recipient in the first place of the monies from the developer.

MR. O'NEILL: Mr. Inspector, Mr. Malone would like to make one comment on Condition No. 2 if that would be permissible.

INSPECTOR RYAN: Yes.

MR. MALONE: Chairman, basically what I'm asking there in relation to Condition 2 that the wording be put in there that no asbestos waste be disposed of at the site. The reason for that, they have stated that they shall not accept nonhazardous waste. However, the fact of the matter is that the EPA have granted planning permission or a proposed licence for asbestos waste. Yet the EIS makes no reference to it. I just want to bring it in in context here, under the planning laws there is exempt developments but they are with conditions and it is the very same here. This waste that they are talking about, asbestos waste is, I acknowledge and I accept under

the planning. That's just a way to explain it for you. The other thing there is again that the EIS fails to identify any asbestos waste and the company fails to identify, yet it states that this asbestos waste is to be double bagged and covered with two metres of soil. The EIS doesn't say where and how that is to happen. It doesn't identify where the type of soil has to come in for that or how it is going to done. Again I put it to you, why would it be double bagged and put in two metres of soil if it wasn't hazardous waste? The EIS failed to identify the actual amount of this waste. They are talking about nonhazardous in Connaught but it doesn't actually say exactly how much. It fails to identify as well, in relation to the leachate, the leachate would breakdown those bags so why put them into double plastic bags, cover them and then as soon as they are covered, within six months or a year, whatever it is, there is no plastic bags and what is the effect of that? That's all, Chairman. That's all I will make on that.

INSPECTOR RYAN: Thank you very much. Do you wish to reply to that?

MR. FITZSIMONS: Very briefly. In that respect I think it affords a complete answer to the point raised by Mr. Malone. I would refer you to the Council decision, this is Council of the European Community, of 19th December 2002. That decision established criteria and

procedures for the acceptance of waste at landfills pursuant to provisions of the Landfill Directive. I would refer you specifically, Mr. Inspector, to Section 2.3.3 of that decision which deals with asbestos waste:

> "Construction materials containing asbestos and other suitable asbestos waste may be landfilled at landfills for nonhazardous waste in accordance with Article 6(c)(III) of the Landfill Directive without testing."

I will make a copy of that particular section available to you, Mr. Chairman.

INSPECTOR RYAN: Okay. Just to continue this section. I think Ms. McConnell made her views quite clear on why she wanted conditions 23 and 24 to be included and your view is also quite clear. So I think we can wrap this section up on the first party appeal conditions.

MR. FITZSIMONS: If I could reply briefly to some of the comments made by Ms. McConnell expressed in relation to 23 and 24.

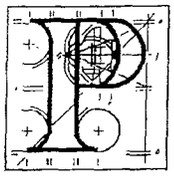
INSPECTOR RYAN: Okay.

MR. FITZSIMONS: The concern that the developer has in relation to condition no. 23 is that as this deals with landscaping predominantly there is duplication, at the very least, between the planning process and the waste licensing process and where there is such overlap and where landscaping is required under the

Appendix 6.

Excerpt from An Bord Pleanala Inspector's Report

An Bord Pleanála



Inspector's Report

Development: Construction of an engineered landfill to accept 100,000 tonnes per annum of residual waste for 10 years plus ancillary facilities at Killagh More, Kilconnell, Ballinasloe, County Galway.

Planning Application

Planning Authority:	Galway County Council.
Planning Authority Reg. Ref.:	02/3811.
Applicant:	Originally Celtic Waste Ltd. (subsequently Greenstar Recycling Ltd.).
Type of Application:	Permission.
Planning Authority Decision:	Grant Permission.

Planning Appeal

Appellant(s):	(a) An Taisce. (b) Greenstar Recycling Ltd. (c) Kilconnell, New Inn, Cappataggle Anti-Dump Group. (d) Kilconnell, New Inn, Cappataggle Anti-Super Dump Committee.
Type of Appeal:	First Party -v- Conditions and Third Party.
Observers:	(a) Western Regional Fisheries Board. (b) Geraldine Cogavin. (c) Marcella Lohan. (d) William Finnerty. (e) Sean Kenny.
Date of Site Inspection:	05/02/2004 and 08/03/2004.
Inspector:	Robert Ryan

road improvements are carried out and these would ultimately be of benefit to the entire area. The development itself is for a finite relatively limited period.

Legal Issues

The Planning Authority requested additional information and subsequently clarification of information. In my opinion both requests were reasonable and clarification did not refer to any new issues not already requested. Both the replies lodged by the developers were accompanied by public notices which met the requirements laid out in the Planning Regulations.

The proposed development is not intended for hazardous waste and any such deposit would clearly be in breach of any licence issued by the EPA. The proposed development is described as "residual waste" and it is noted that this term is also used in "Changing Our Ways" and in the "Connaught Regional Waste Management Plan". These include definitions which it is considered are applicable in this case.

The issue of types of waste is essentially a matter for control under the Waste Licence, which has more relevance in that it deals with ongoing monitoring and is subject to review. Over two-thirds of the waste is stated to be household and commercial with the remainder consisting of industrial non-hazardous solids. It is stated that only waste in compliance with Council Decision 2003/33/EC will be accepted at the proposed landfill. I enclose a copy which I have downloaded from the website. It is noted under Section 2.3.3 that some asbestos waste can be landfilled subject to strict requirements being used.

Mr. Malone was concerned about various legal aspects, including transposition of EU Directives into Irish Law, failure to comply with EU Directives, etc. However, these are legal issues which cannot be determined by the Board and are essentially matters for resolution by various courts.

Devaluation

There is no doubt that a proposed landfill will have an impact on nearby property values. In part, this is due to the common perception that landfills are poorly managed and located with significant negative impacts by way of noise, traffic, visual amenity, dust, vermin, environmental pollution, etc. As pointed out by Mr. McCarrick, another critical element involves fear of the unknown and the uncertainty generated by a proposal such as this does create devaluation.

A modern engineered landfill bears little relationship with the previous landfills operated in the country. The costs involved allied to the controls imposed by a Planning Authority and/or the EPA mean that they are subject to ongoing attention which can result in closure or heavy fines being imposed. In addition, landscaping undertaken at an early stage can be very beneficial.

In my view this scheme should be limited to seven years so from construction phase to aftercare the total period would be in the order of 10 years which, in general development terms, can be termed as being relatively short. As this is a rural area of

Appendix 7.

Relevant Sections from Waste Licence, W0001-03

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

WASTE LICENCE
LANDFILL FOR NON-HAZARDOUS WASTE

FINAL DECISION OF A REVIEW OF A LICENCE

Waste Licence Register Number:	1-3
Licensee:	Kerry County Council
Location of Facility:	Muingnaminnane, Tralee, County Kerry

	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	Kerry County Council.
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the facility.
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Night-time	2200 hrs to 0800 hrs.
Noise Sensitive Location	Any dwelling, house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity, which for its proper enjoyment requires the absence of noise at nuisance levels.
Non-hazardous Asbestos Waste	Includes bonded asbestos, such as tiles, which are not classified as hazardous waste and which are authorised for disposal at the facility.
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc. which may be recycled.
Quarterly	At approximately three monthly intervals.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
SCADA system	Supervisory Control and Data Acquisition system.
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
SOP	Standard Operating Procedure.
Specified Emissions	Those emissions listed in *Schedule C: Emission Limits*, of this licence.
Specified Engineering Works	Those engineering works listed in *Schedule B: Specified Engineering Works*, of this licence.

5.6.8 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

5.6.9 Fuels shall be stored only at appropriately bunded locations on the facility.

5.6.10 All tanks and drums shall be labelled to clearly indicate their contents.

5.6.11 No smoking shall be allowed on the facility.

Composting

5.6.12 Unless otherwise agreed by the Agency, only source segregated organic (i.e. kitchen and garden) waste, green waste and compost shall be used in the operation of the organic waste composting facility.

5.6.13 The bulking agent to facilitate the composting process shall be bark mulch or other such similar bulking material agreed in advance by the Agency.

5.6.14 All wastes accepted to the waste composting unit shall be introduced into the compost process within 24 hours of delivery.

5.6.15 The compost windrows shall be covered with a suitable geotextile cover at all times except when biodegradable waste including bulking agents are being added to the windrows, when moisture content of the windrow is being supplemented or when the compost is being mixed.

5.6.16 No waste shall be left uncovered in the composting area from the close of operation on Saturday until Monday morning opening unless otherwise agreed by the Agency.

5.6.17 The licensee shall maintain a daily written record of temperature and turning of the compost.

5.6.18 Not withstanding Conditions 5.6.12 to 5.6.17 inclusive the composting operations shall be in accordance with Section D.1.c.3) of the Article 14 response received by the Agency on the 3rd August 2004 unless otherwise agreed by the Agency.

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

5.7 Waste Handling

5.7.1 Compost

5.7.1.1 The green waste composting facility shall not process greater than 2000 tonnes of green waste per annum. Written records of the quantities and type of wastes composted must be maintained.

5.7.1.2 The licensee shall maintain procedures for the handling/management of the composting process to include operational controls to ensure the quality of the finished product and mitigate emissions as has been agreed with the Agency.

5.7.1.3 In order not to be considered a waste, compost produced by the facility shall comply with the quality standards as have been agreed with the Agency. Analysis of the compost shall be at a frequency as has been agreed with the Agency.

5.7.2 Asbestos Waste

5.7.2.1 Asbestos waste to be disposed of at the facility shall comply with the requirements of Article 6(c)(iii) of the Landfill Directive (1999/31/EC) and be accepted and managed in accordance with the procedures laid down in Section 2.3.3 of the Annex to Council Directive 2003/33/EC.

5.7.2.2 Asbestos based waste must be double wrapped in heavy gauge plastic, which is clearly labelled to indicate the presence of asbestos.

5.7.2.3 Disposal of asbestos waste shall be into prepared bays or trenches of at least 2 metres in depth.

5.7.2.4 Deposited asbestos waste shall be covered immediately with at least 250mm of suitable material. At the end of the day, the waste shall be covered with a minimum of 500mm of suitable material.

5.7.2.5 No asbestos waste shall be present within 2.5 metres of the final surface levels.

5.7.2.6 The amount of asbestos containing waste shall be limited to a maximum of 1% of total annual waste intake for the landfill.

5.8 Off-site Disposal and Recovery

5.8.1 Waste sent off-site for recovery or disposal, shall be conveyed only by a waste contractor agreed by the Agency.

5.8.2 All waste transferred from the facility shall be transferred only 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 Civic Waste Facility

5.9.1 Only private vehicles shall use the Civic Waste Facility. Commercial waste disposal contractors or local authority waste collection vehicles shall not use the facility as a transfer station for disposal of waste.

5.9.2 All waste deposited in the Civic Waste Facility shall be either: -

a) Into a skip;

b) Into the hopper of the compactor for disposal;

c) Into a receptacle for recovery; and

d) In the case where inspection is required, into a designated inspection area.

5.9.3 The licensee shall assign and clearly label each container at the Civic Waste Facility to indicate their contents.

5.9.4 The licensee shall only allow the receptacle/skip labelled for household waste to be sent to landfill. All other receptacles/skips shall be sent off-site for recovery unless otherwise agreed by the Agency.

5.9.5 At the end of the working day the floor of the Civic Waste Facility shall be cleared of waste.

5.10 Leachate Management

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

5.10.2 The level of leachate in the pump sumps shall be monitored as outlined in *D.4 Leachate Management* of the EIS.

5.10.3 The frequency of leachate removal from the leachate lagoons shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoons at all times.

5.10.4 Leachate stored in the leachate storage lagoons shall be disposed of by tankering off-site in fully enclosed road tankers.

5.10.5 The licensee shall maintain written procedures for the handling of leachate removal from the lagoon and subsequent removal by tanker from the facility for treatment. These

Sealed by the seal of the Agency on this the 30th day of March, 2005

PRESENT when the seal of the Agency
was affixed hereto:

Larry Stapleton, Director

Appendix 8.

Excerpt from Waste Licence Application, W0001-03

Waste Licensing

Waste Disposal Activities (Landfill Sites)

Application Form

EPA Ref. Nº: (Office use only)	1-3

This document does not purport to be and should not be considered a legal interpretation of the provisions and requirements of the Waste Management Act, 1996.

Environmental Protection Agency
P.O.Box 5000, Johnstown Castle Estate, County Wexford
Telephone: 053-60600 Fax: 053-60699

TABLE B.9(B) QUANTITIES OF WASTE IN RELATION TO EACH CLASS OF ACTIVITY APPLIED FOR

Waste Type	Max. t.p.a.
Household	34,500
Commercial	28,500
Construction / Demolition	2,500
Industrial non-hazardous solids	9,500
Biodegradeable waste for composting	2,000
Total	**77,000**

B.10 Quantity and Nature of Waste

Provide the annual amount of waste accepted/to be accepted at the site and an estimation of the total quantities of waste in place, (if applicable), and to be disposed of during the lifetime of the facility. Additional information should be included in **Attachment B.10.** The tonnage per annum should be given of that ...pected for the life of the licence, with at least the next five years tonnages provided.

TABLE B.10.1 ANNUAL QUANTITIES AND NATURE OF WASTE

Year	Total MSW Waste (tpa)	Commercial Waste (tpa)	Non Hazardous Industrial Waste (tpa)	Total MSW Landfilled (tpa)
2006	25,760	21,280	7,093	54,133
2007	26,533	21,918	7,306	55,757
2008	27,329	22,576	7,525	57,430
2009	28,149	23,253	7,751	59,153
2010	28,993	23,951	7,984	60,928
2011	29,863	24,669	8,223	62,755
2012	30,759	25,409	8,470	64,638
2013	31,682	26,172	8,724	66,577
2014	32,632	26,957	8,986	68,574
2015	33,611	27,766	9,255	70,632
Total	**295,310**	**243,951**	**81,317**	**620,578**

Note: A growth rate of 3% p.a. is achievable for a 10 year lifespan

TABLE B.10.2 TOTAL QUANTITIES AND NATURE OF WASTE

	Non-hazardous waste (tonnes)	Hazardous waste (tonnes)	Total (tonnes)
Already deposited	0	0	0
To be deposited prior to closure	620,000	0	620,000

Maximum Annual Tonnage

The maximum annual tonnage of waste to be accepted at the site should be indicated and the year to which the quantity relates indicated.

Maximum Annual Tonnage (tpa)	77,000
Year	2006

B.10 Major Industrial Hazard Regulations

State whether the activity consists of, comprises, or is for the purposes of, an industrial activity or isolated storage to which Regulations 12 to 18 of the European Communities (Major Accident Hazards of Certain Industrial Activities) Regulations, 1986 (SI No. 292 of 1986), as amended by the European Communities (Major Accident Hazards of Certain Industrial Activities) (Amendment) Regulations, 1989 (SI No. 194 of 1989) and the European Communities (Major Accident Hazards of Certain Industrial Activities) (Amendment) Regulations, 1992 (SI No. 21 of 1992) apply.

Regulations Apply	Yes ☐	No ☒

If yes, **Attachment B.12** should include the relevant details.

B.11 Type of Facility

State which of the following is relevant to the current application.

(a) landfill for hazardous waste	☐
(b) landfill for non-hazardous waste	☒
(c) landfill for inert waste	☐

E. WASTE ACCEPTANCE AND HANDLING

E.1 Existing Waste Types and Quantities

A detailed inventory of the types and quantities of wastes currently accepted at the site and proposed to be accepted should be submitted.

TABLE E.1.1 WASTE TYPES AND QUANTITIES

WASTE TYPE	TONNES PER ANNUM (existing)	TONNES PER ANNUM (proposed)	TOTAL (over life of site) tonnes
Household	34,500	29,531	295,310
Commercial	28,500	24,395	243,951
Construction / Demolition	2,500		
Industrial non-hazardous solids	9,500	8,131	81,317
Biodegradeable waste for	2,000		
Total	**77,000**	**62,057**	**620,000**

TABLE E.1.2 HAZARDOUS WASTE TYPES AND QUANTITIES *

Not applicable

HAZARDOUS WASTE	DETAILED DESCRIPTION	Tonnes Per Annum (Existing)	(Tonnes Per Annum Proposed
Waste Oil			
Oil filters			
Asbestos			
Oil/Sand Mixtures or Mixtures of Oil and Other Material			
Wood Preservative Waste			
Petroleum and Gas Treatment Wastes			
Inorganic Chemical Processes Wastes			
Organic Chemical Processes Wastes			
Agrochemical Wastes			
Infectious Healthcare Waste			
Chemical Industry Waste			
Photographic Processing Waste			
Paint and Ink			
Batteries			
Fluorescent Light Bulbs			
OTHER HAZARDOUS WASTE (APPLICANT TO SPECIFY)			

* Reference should be made to the following legislation when filling out this section: Council Directive 2000/532/EC, Council Directive on hazardous waste (2001/118/EC) and amended Council Directive on hazardous waste (2001/119/EC)

TABLE E.1.4 OTHER WASTES

OTHER WASTES	Check (if accepted)	Tonnes per Annum	Check (if proposed to be accepted)	Tonnes per Annum	Additional Information
Plasterboard and Plaster	☒		☐		
Dried Paints, Dried Varnish & Dried Lacquer	☒		☐		
Foundry Sand & Sand Blasting Residues	☒		☐		
Glass	☒		☐		
Latex & Rubber Solutions	☒		☐		
Solid, Fully Polymerised Plastics	☒		☐		
Solid Rubber (excluding tyres)	☒		☐		
Empty Containers	☒		☐		
Non-Hazardous Ferrous and Non-Ferrous Metals	☒		☐		
Asbestos Based Construction Materials*	☐		☐		
OTHER WASTES (APPLICANT TO SPECIFY)	Check (if accepted)		Check (if accepted)		Additional Information
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		

*Any special treatment should be specified

Attachment E.1 should contain any relevant additional information.

Appendix 9.

Relevant Sections from KTK Waste Licence, W0081-03

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

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

WASTE LICENCE

Licence Register No:	81-3
Licensee:	KTK Landfill Limited
Location of Facility:	Brownstown and Carnalway, Kilcullen, County Kildare.

KTK LANDFILL

Condition 8. Materials Handling

8.1 Disposal or recovery of waste shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.

8.2 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. The waste shall be transported only from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.

8.3 Waste Acceptance and Characterisation Procedures

8.3.1 Only pre-treated wastes are acceptable for disposal as set out in Article 6 (a) of the Landfill Directive.

8.3.2 Waste shall only be accepted at the facility, from Local Authority waste collection or transport vehicles or holders of waste permits, unless exempted or excluded, issued under the Waste Management (Collection Permit) Regulations 2001.

8.3.3 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility. Shredded tyres shall not be disposed of at the facility from 16 July 2006.

8.3.4 No hazardous wastes (other than as may be permitted under Condition 8.5) or liquid wastes shall be disposed of at the facility.

8.3.5 The licensee shall ensure that inert waste accepted at the facility is subject to treatment where technically feasible.

8.3.6 The licensee shall maintain written procedures for the acceptance and handling of all wastes. These procedures shall include details of the pre-treatment of all waste to be carried out prior to acceptance at the facility and shall also include methods for the characterisation of waste in order to distinguish between inert, non-hazardous and hazardous wastes. The procedures shall have regard to the EU Decision (2003/33/EC) on establishing the criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive (1999/31/EC) on the landfill of waste.

8.4 Inert Waste

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

8.5 Asbestos Waste

8.5.1 Asbestos waste to be disposed of at the facility shall comply with the requirements of Article 6(c)(iii) of the Landfill Directive (1999/31/EC) and be accepted and managed in accordance with the procedures laid down in Section 2.3.3 of the Annex to Council Directive 2003/33/EC.

8.5.2 Asbestos based waste must be double wrapped in heavy gauge plastic, which is clearly labelled to indicate the presence of asbestos.

8.5.3 Disposal of asbestos waste shall be into prepared bays or trenches of at least 2 metres in depth.

8.5.4 Deposited asbestos waste shall be covered immediately with at least 250mm of suitable material. At the end of the day, the waste shall be covered with a minimum of 500mm of suitable material.

KTK LANDFILL

8.5.5 No asbestos waste shall be present within 2.5 metres of the final surface levels.

8.5.6 The amount of waste containing asbestos shall be limited to a maximum of 10% or 100,000 tonnes (whichever is the least) of total waste intake for the landfill.

8.6 With the exception of use of recovered fuels as may be approved for this site by the Agency, no waste shall be burnt at the facility.

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

Condition 9. Accident Prevention and Emergency Response

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

9.2 The licensee shall 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.

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

(i) isolate the source of any such emission;

(ii) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;

(iii) evaluate the environmental pollution, if any, caused by the incident;

(iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;

(v) identify the date, time and place of the incident;

(vi) provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency to:-

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

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

Appendix 10.

Excerpts from National Hazardous Waste Management Plan, 2001

6.4 Sectoral issues for certain waste types

This section summarises the key points pertaining to eighteen discrete hazardous waste types. These represent the principal categories of hazardous waste arising in Ireland and those for which particular concern was expressed during the consultation phases. As stated in section 4.7, priorities should be selected from the sectors and products listed below for inclusion in the prevention programme. The priorities should reflect the likelihood of reducing the environmental impact of the wastes and those sectors and/or products where early progress can be made should be selected initially.

Waste type	**Waste oil**
Main recovery or disposal route	Oil recovered for use as fuel
Residues	Sludge to landfill or further processing Waste water to sewer
Capacity in Ireland	Adequate - capacity may be expanded with relatively little investment.
Bottlenecks or difficulties	Directive 75/439/EEC on the disposal of waste oils requires regeneration as the preferred processing option. This option would reportedly require greater economies of scale than exist in Republic of Ireland. Currently, waste oil is recovered for use as a fuel. Possible lack of outlet in future in Ireland for sludge residue.

Waste type	**Oil filters**
Main recovery or disposal route	Oil recovered for use as fuel Steel recovered in Ireland
Residues	Residues as waste oil processing Other plastic and paper residues
Capacity in Ireland	Adequate
Bottlenecks or difficulties	Collection rates have significant scope for improvement

Waste type	**Lead acid batteries**
Main recovery or disposal route	Lead recovered Plastic recoverable
Residues	Acid to neutralisation and disposal
Capacity in Ireland	Adequate Significant quantities of whole units are exported to the UK for recovery. The lead fraction (at least) must be exported for recovery.
Bottlenecks or difficulties	Collection rates have significant scope for improvement

Waste type	**Agrochemical and its packaging**
Main recovery or disposal route	Landfill - unsuitable for disposal in unlined landfill. Scope for recovery of packaging thereby ensuring suitable management of chemical residues.
Residues	Neutralisation or incineration
Capacity in Ireland	None
Bottlenecks or difficulties	Some disposal probably taking place on farms. Spent sheep dip a problem requiring appraisal. No segregation currently carried out - therefore no separate collection, processing, recovery or disposal.

Waste type	**Drums and large containers contaminated with dangerous substances**
Main recovery or disposal route	Large proportion is processed at drum recycling facilities.
Residues	Further processing of drained residues likely – physico-chemical or thermal treatment.
Capacity in Ireland	Adequate.
Bottlenecks or difficulties	Increased regulation of unauthorised activities required.

Waste type	**Asbestos**
Main recovery or disposal route	Landfill No recovery option
Residues	Landfill
Capacity in Ireland	None for asbestos waste classified as hazardous waste (classification refers only to "insulation materials containing asbestos" and "wastes containing asbestos from electrolysis").
Bottlenecks or difficulties	Lack of hazardous waste landfill capacity. Landfill capacity should be available for all asbestos waste.

9. Build on on-going prevention, research and demonstration initiatives – for example, the *Cleaner Production Pilot Demonstration Programme.*

9.8 Longer term priorities beyond the five year review period of the Plan

1. The achievement of self sufficiency in hazardous waste management.
2. No increase in hazardous waste disposed of over 1996 quantities.
3. The qualitative reduction (i.e. reduction in the degree of hazard) of hazardous waste.

Appendix 11.

Excerpt from National Hazardous Waste Management Plan, 2008-2012

National Hazardous Waste Management Plan 2008-2012

ENVIRONMENTAL PROTECTION AGENCY

An Ghníomhaireacht um Chaomhnú Comhshaoil

PO Box 3000, Johnstown Castle, Co. Wexford, Ireland

Telephone: +353 53 9160600 Fax: +353 53 9160699

Email: info@epa.ie Website: www.epa.ie

Lo Call 1890 33 55 99

registration services) on business use of facilities could minimise businesses "shopping around" civic amenity sites. Collective tendering by local authorities for contracts to manage the deposited waste from several civic amenity sites would likely reduce unit costs to local authorities and service providers alike.

Asbestos

Large amounts of asbestos are collected annually, but anecdotal evidence suggests that substantial quantities of asbestos waste are still managed illegally, either due to ignorance of legal obligations or the high cost of employing specialist contractors for small jobs. A network of collection and transfer facilities should be established to capture the small-scale arisings from DIY and small contracting jobs. Local authorities should be resourced and then directed by the Department of the Environment, Heritage and Local Government to provide at least one transfer station for small quantities of asbestos in each local authority area. An obvious solution is to use the existing civic amenity site network, although not all existing sites will be suitable for such use. Where local authority-owned sites are not available or suitable, it may be possible for local authorities to contract authorised private sector waste facilities to accept asbestos on their behalf. The EPA will prepare guidance, in consultation with local authorities and the Health and Safety Authority, on the minimum operational and environmental standards for managing asbestos at such sites. The development of this network would be expected to provide reassurance that there is no reason for illegal or "backyard" disposal or accumulation of asbestos.

Information to householders and small businesses

Householders and small businesses should be informed through ongoing information campaigns conducted by or on behalf of local authorities of the hazardous waste collection services available in their areas. Practical guidelines on the segregation and storage of hazardous waste at households and business should be provided. Central co-ordination of information campaigns, particularly the creation of messages and the design and printing of materials, may be appropriate. Finance could be raised from producer responsibility initiatives to help pay for information campaigns.

Mobile collection services for householders

Local authorities should provide periodic community mobile "chemcar" services as a means of highlighting and creating awareness about household hazardous waste. Mobile services are also useful to fill geographical gaps in static facilities' service provision and should be considered in the context of geographical areas that are remote or distant from civic amenity sites. Mobile collection services can be used to highlight seasonal wastes, for example the

- addressing the deficit in capacity for the substantial waste stream currently exported for thermal treatment (i.e. co-incineration, use as fuel or incineration) – see sections 6.3 and 6.4;
- development of landfill capacity to manage non-recoverable and non-combustible hazardous wastes and residues, including asbestos – see section 6.5; and
- expansion of other recovery and treatment capacity in Ireland for waste that does not need thermal treatment or landfill – generally referred to as physico-chemical treatment – see section 6.6.

It should be clearly understood that while this Plan can set out options and make recommendations, based on environmental criteria, on the need for treatment facilities for hazardous waste, infrastructure is provided by private organisations or through public private partnerships. The development of new capacity for the treatment of hazardous waste, whether in new or expanded facilities, would be expected, given competitive gate fees, to reduce the export of hazardous waste.

6.3 Options proposed as alternative treatment techniques

A number of alternative treatment methods are available for several different hazardous waste streams, including such techniques as:

- alkaline hydrolysis
- ball milling
- base catalysed dechlorination
- catalytic treatment
- 'Cerox'
- gasification
- gas-phase chemical reduction
- molten metal
- molten salt
- molten slag
- 'PCB Gone'
- plasma arc technologies
- 'Silver II'
- solvated electron technology
- steam detoxification
- supercritical water oxidation
- thermal desorption

A brief technical description of these technologies is provided in Appendix E. There are clear possibilities for the use of some of these technologies for the treatment of hazardous waste in Ireland. The Plan supports the provision of such technologies where technically and economically feasible. Some of these alternatives are niche-market treatment options (often for such wastes as persistent organic pollutants or chlorinated chemicals). Some are currently in development or have not yet been commercially proven. In many cases, their application is technically limited and adequate supplies of waste would be needed to justify investment. However, in order to ensure that realistic alternatives are given adequate consideration, the following is recommended:

Obviously it is difficult to predict how much hazardous waste will remain after, and even if, all suitable material is diverted for recycling and use as a fuel. However, it is clear that diverting less solvent to recycling or for use as fuel in cement kilns would leave greater quantities sent for incineration, whether in Ireland or abroad. It should be noted that the export of this material is currently taking place in a secure, competitive and available marketplace abroad. Irish waste is not likely to be restricted from entering other Member States, although there are some policy barriers to the UK disposal market[72] and capacity barriers in the German incineration market[73]. It is therefore a matter for the private sector to judge whether investment in an Irish hazardous waste incineration facility, or alternative treatment technologies, would make commercial sense in the context of the evolving European market.

It is however evident from this analysis that there is a quantity of hazardous waste that is currently exported for incineration for which incineration will remain the most likely management route in the continued absence of commercialised alternative treatment techniques. It must therefore be concluded that, in combination with the blending of waste solvent for use in cement kilns, or indeed in the absence of cement kilns in the mix (whether indigenous or foreign), and in the absence of alternative techniques that are capable of treating a wide range of diverse waste streams, incineration will be needed in order for Ireland to move towards self-sufficiency in the treatment of hazardous waste.

The proposed incineration facility for Ringaskiddy[74] is authorised to treat up to 50,000 tonnes of hazardous waste per annum.

6.5 Landfill of asbestos and other hazardous waste

Table 18 shows the scale of landfilling of Irish hazardous waste. Other than contaminated soil, asbestos is the single largest hazardous waste stream that requires landfill disposal. Inorganic sludges and other industrial hazardous wastes are also landfilled. In 2006, a large amount of contaminated soil was exported for landfill disposal.

One facility, KTK Landfill (waste licence register number W0081-03), is authorised to accept up to 6,000 tonnes of waste construction materials containing asbestos (EWC code 17 06 05*). This facility is scheduled to close by 2009. No other commercially available capacity exists for hazardous waste landfill in Ireland and there are no facilities currently proposed to replace KTK's asbestos disposal capacity from 2009.

[72] The *UK Plan for Shipments of Waste* prohibits most imports of waste for disposal from Ireland into Great Britain, but allows for certain hazardous waste imports for disposal into Northern Ireland (and exports from Northern Ireland). There are no restrictions on access to recovery or recycling markets. See section 6.8 below.

[73] In Germany, implementation of the landfill directive has reduced available incineration capacity. A ban on the landfill of untreated waste has driven large quantities of municipal waste into German incinerators, reducing the capacity available to the import market.

[74] Indaver, waste licence register number W0186-01.

landfill operators that might consider accepting asbestos or any other hazardous waste. In addition, any existing licence would need to be reviewed before asbestos could be accepted.

Given these regulatory requirements, it appears appropriate that providing landfill capacity for asbestos waste should be actively promoted. The cost of exporting asbestos waste is prohibitive, particularly for small scale or DIY operators. This is in all likelihood driving asbestos into the unreported or illegal waste sectors. The generation of asbestos is a legacy of construction materials used in the past and is linked to the rate of renovation, demolition or extraction of asbestos from older buildings. The quantities shown in Table 18 represent the current requirement for landfill capacity for *reported* asbestos waste. It is proposed that additional capacity is allowed to account for illegal disposal of asbestos and to take account of increased promotion of legal collections of asbestos[79]. Thus capacity for up to 20,000 tonnes of asbestos waste per annum is recommended for capacity planning purposes.

Other than asbestos, a relatively small amount of hazardous waste (other than contaminated soil) requires access to off-site commercial landfill – approximately 1,917 tonnes in 2004 and 6,890 tonnes in 2006. It is likely that licence conditions for the landfill disposal of this material would require an element of pre-treatment (such as stabilisation or solidification) which would increase the volume of landfilled waste. Therefore, up to 10,000 tonnes per annum is recommended for capacity planning purposes.

It is recommended that at least one hazardous waste landfill be developed in Ireland, capable of accepting the wide range of hazardous wastes that would otherwise be exported for landfill. Such a facility would be expected to provide a key national service and should have an available capacity of at least 25,000 tonnes per annum. A national facility should facilitate good transport links with the main urban and industrial centres. The facility could be co-located with an existing or planned landfill facility with the objective of utilising existing infrastructure such as site roads, weighbridges and staff facilities, thereby saving costs.

It is further recommended that at least one other non-hazardous landfill facility be authorised to accept construction materials containing asbestos[78]. Such a facility would be expected to provide (at least) a "regional" service to supplement a region or regions that are more distant from a national facility. A capacity of up to 5,000 tonnes of construction materials containing asbestos per annum should be accommodated.

These recommendations for two landfill facilities are summarised in Table 19.

[79] In chapter 4, a network of asbestos transfer stations operating from civic amenity sites is proposed. The availability of drop off facilities at equitable cost should minimise the illegal disposal or backyard accumulation of asbestos.

8.3 Consequences of not implementing the Plan

Some of the consequences of not putting in place a programme to implement the National Hazardous Waste Management Plan are as follows:

- many generators of hazardous waste will remain unaware of their obligations in respect of the management of hazardous waste;
- levels of unreported hazardous waste will remain high and could grow;
- small businesses and households will continue to have limited access to affordable collection services, resulting in small scale hazardous waste being disposed of with general refuse in landfills not designed or licensed for hazardous waste;
- improvements and consistent high standards in civic amenity site storage of hazardous waste will not materialise, resulting in potential for poor management of deposited materials;
- producers will not be made responsible for the proper management of hazardous waste resulting from products placed by them on the market;
- knowledge will not be developed on available and optimal hazardous waste management routes in Ireland to avoid large-scale export of waste for thermal treatment;
- hazardous waste landfill capacity will not become available, ensuring that large quantities of asbestos waste in particular will continue to be exported or disposed of in an unauthorised manner.

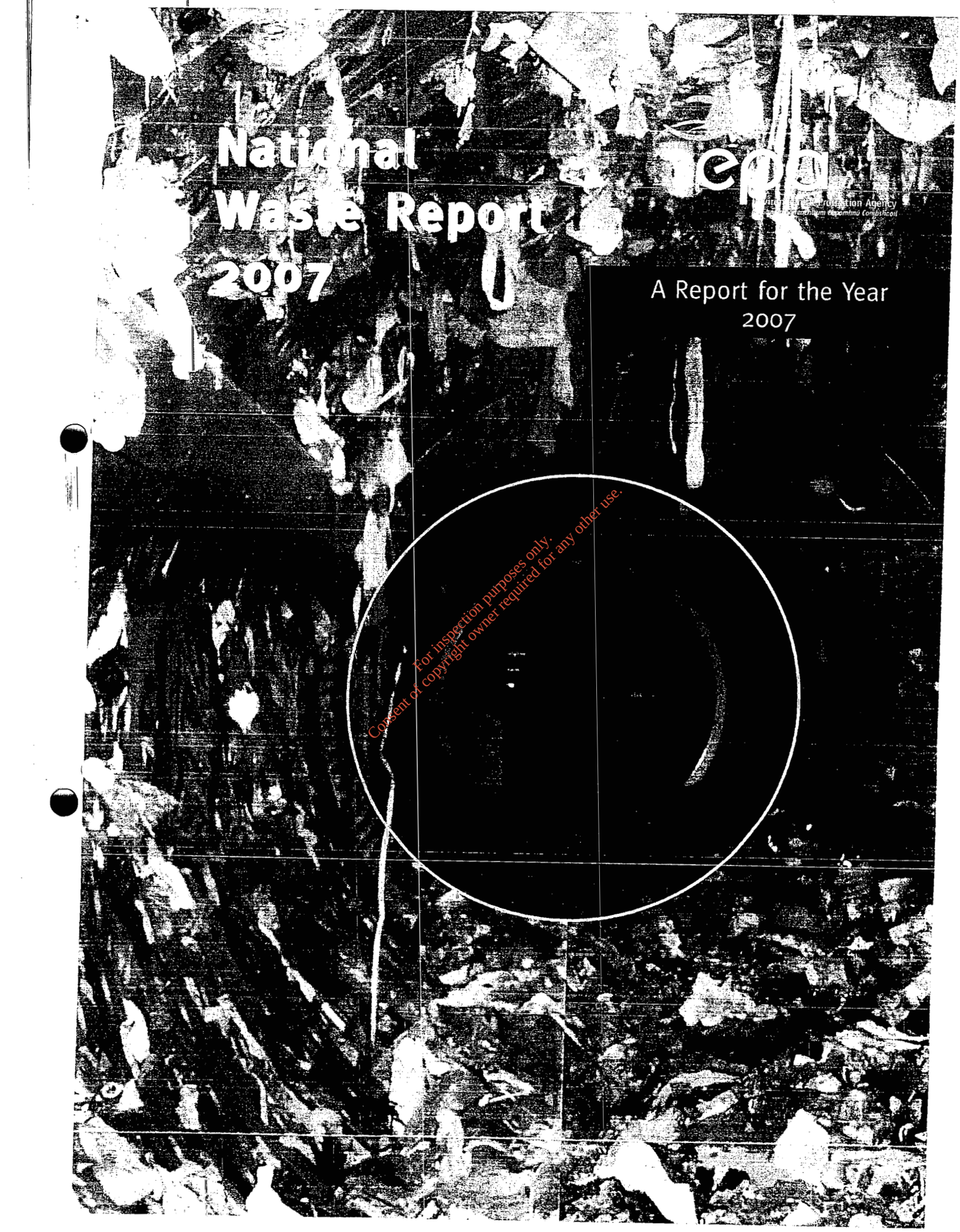
8.4 Objectives, targets and indicators

Table 20 summarises the objectives that will be adopted for the National Hazardous Waste Management Plan (section 1.4) and includes environmental objectives identified during the strategic environmental assessment (section 1.5). Table 21 and Table 22 summarise the targets and indicators that will provide a means of measuring progress towards these objectives. Targets and indicators are intended to allow for monitoring the implementation of the Plan (management indicators) and monitoring any environmental effects of the Plan's implementation (environmental indicators). There are two principal mechanisms for reporting on the Plan's implementation progress. The national waste report will provide annual or biannual statistics on hazardous waste generation, treatment and export. A periodic report on the implementation of the Plan will also be prepared – see section 8.5.

Appendix 12.

Excerpt from National Waste Report, 2007

National Waste Report 2007



A Report for the Year 2007

Table 22 Location of treatment of reported hazardous waste, 2007

Category	On-site at industry (tonnes)	Off-site in Ireland (tonnes)	Exported (tonnes)	Total (tonnes)
Solvents	44,347	17,704	48,671	[36]94,224
Solvents (halogenated, where specified)	15,845	2,220	6,743	[36]24,733
Oil waste (mineral oil)	251	28,432	617	29,300
Industrial hazardous waste (other)	4,698	2,709	33,854	41,261
Salts and saltcake	13,949	1		13,950
Healthcare risk waste		8,985	478	9,463
Oily sludges	18	13,887	7	13,912
Lead-acid batteries			10,565	10,565
Equipment (electrical, electronic, mechanical)		[37]6,859	6,423	13,282
Chemical waste (other)		178	4,091	4,269
Paint, ink and varnish waste (including packaging)	7	517	2,805	3,329
Acid and alkali waste		546	2,384	2,930
Asbestos waste		5,326	6,168	11,494
Aqueous washing liquids and mother liquors (07 __ 01*)	3,508	1,420	10,747	15,675
Solid wastes from MFSU of pharmaceuticals (07 05 13*)	2		3,790	3,792
Sludges and filter cakes		162	5,036	5,198
Batteries (small, non-lead acid)		3	328	331
Packaging (contaminated or containing residues)	58	1,825	785	2,668
Photographic chemical waste		123	680	803
Oil filters			640	640
Construction and demolition waste (hazardous)			82	82
Metal- and heavy metal-containing waste		5	42	47
Absorbents, wiping cloths etc. (EWC 150202)	32	4	1,894	1,930
Fluorescent lamps		282	116	398
Pesticides, herbicides			71	71
Laboratory and general chemical waste	17	52	332	401
Thermal treatment and combustion residues			32	32
Medicines			1	1
Municipal hazardous waste (other)			89	89
Polychlorinated biphenyls			71	71
Total	**82,732**	**91,240**	**147,542**	**304,941**

(Source: IPPC annual environmental reports; recycling organisation survey; TFS records)

[36] A total of 16,573 tonnes of waste solvent (halogenated and non-halogenated) was blended at facilities in Ireland prior to export for use as fuel in cement kilns and incinerators. The blended solvents were exported as a waste. These quantities are correctly counted in both the 'treated off-site in Ireland' column and the 'exported' columns. However, they have been discounted in the 'total' column to avoid double counting in the total amount of hazardous waste generated.

[37] A total of 6,849 tonnes of cathode ray tube (CRT)-based televisions and monitors was treated at five facilities. The treatment facilities report that 3,251 tonnes of CRT glass was subsequently exported for further processing and recycling.

Appendix 13.

CRRL Asbestos Disposal Procedure

Title	Asbestos Disposal					
Ref	CRR26	Rev	0	Date	20/12/05	
Iss.		App.		Pg	1 /2	

1.0 Scope

Ensures the acceptance and disposal of construction material containing cement bonded asbestos at Connaught Regional Residual landfill are in compliance with the requirements of condition 5.10 of waste licence 178-1 and Section 2.3.3 of Council Decision 2003/33/EC.

2.0 Responsibility

The FM will implement this procedure. Relevant staff are responsible for completing and maintaining various EMS records.

3.0 Procedure

3.1. Asbestos waste can only be disposed into a specially constructed asbestos waste disposal bay. The bay must be at least 2m in depth. The asbestos waste must be double wrapped in heavy gauge plastic which is clearly labelled to indicate the presence of asbestos.

3.2. All new asbestos waste sources must undergo basic characterisation. The site can only accept cement bonded asbestos waste.

3.3. All construction material containing asbestos entering the site are required to have appropriate supporting documentation including C1 form and waste EWC code.

3.4. Load is directed to asbestos waste disposal bay, by weighbridge operator.

3.5. Waste is unloaded at waste disposal face and on-site verification is performed by the Site Supervisor/General Operator. The following information is noted/verified on the C1 form.

- Type/classification of waste
- Source of waste
- Physical form of waste (bound, double plastic wrapped).
- Waste EWC code.

3.6. If waste disposal face visual inspection is consistent with approved basic characterisation the asbestos is unloaded using excavator and/or pallet forks. If waste is deemed unacceptable, disposal will not commence and the Facility manager/Deputy Facility Manager is contacted.

3.7. A waste load deemed unacceptable at the waste disposal face will be redirected to waste inspection/quarantine area for further investigation.

3.8. Acceptable inert waste is placed in the Asbestos Waste Bay via excavator and pallet forks and covered immediately with a minimum of 250mm of suitable material.

3.9. Prior to the end of the working day the asbestos waste shall be covered with a minimum of 500mm of suitable material and site supervisor or appropriate deputy will inspect the area to ensure full compliance with licence conditions.

3.10. On completion of asbestos disposal, the disposal vehicle proceeds to the 'Out' weighbridge where the net weight of the load is recorded. A weighbridge docket is issued, and the weight is also recorded on the C1 form.

3.11. Any unacceptable loads of waste asbestos will be stored in the waste inspection/quarantine area while arrangements are made for the recovery or disposal at an appropriate alternative facility.

3.12. The location of the asbestos disposal cell will be measured and recorded so that any future drilling operations at the site can avoid this area.