

This report has been cleared for submission to the Board by the Programme Manager Frank Clinton.

Signed devere Date 2/7/10



**DEPARTMENT OF CLIMATE,
LICENSING &
RESOURCE USE**

INSPECTORS REPORT ON A LICENCE REVIEW

TO:	DIRECTORS
FROM:	Michael Owens assisted by Caroline Murphy - Licensing Unit
DATE:	06 July 2010
RE:	EPA-initiated review of a waste licence for Cork County Council – Bottlehill, Toreen South, Coom (Hudson), Coom (Fitzgerald), Glashaboy North, Bottlehill, County Cork. Licence Register No. W0161-02.

Type of facility:	Landfill
Class(es) of Activity:	4 th Schedule: Class 4 3 rd Schedule: Class 4, 5 & 13
Quantity of waste managed per annum:	189,000 tonnes increasing to 217,000 tonnes per annum
Classes of Waste:	Household, commercial, industrial and street cleaning.
Location of facility:	Bottlehill, Toreen South, Coom (Hudson), Coom (Fitzgerald), Glashaboy North, Bottlehill, County Cork
Licence review initiated:	23 rd December 2009
Third Party submissions:	John O’Riordan & Bottlehill Environmental Alliance, 01 st February 2010. Submitted on their behalf by Noonan Linehan Carrol Coffey Solicitors.
Licensee submission:	1 st February 2010.
Article 16(3)(a)(i) Notification	Not applicable
Article 16(3)(a)(i) Reply	Not applicable
EIS Required:	No
New or existing facility (i.e. operational pre- or post-16 July 2001)	Existing
Site Inspection	No site inspection was carried out for this review.

On the 23rd December 2009, the Environmental Protection Agency initiated a review of the waste licence relating to Bottlehill Landfill, Waste Licence Register Number W0161-01. The review was initiated by writing to the licensee and placing a newspaper notice in the Irish Independent. The reasons for initiating the review are as follows:

- Section 46(2)(b) of the Waste Management Acts, 1996 to 2010, requires that the EPA review a waste licence if “new requirements (whether in the form of standards or otherwise) are prescribed, by or under any enactment or Community act, being requirements that relate to the conduct or control of the activity to which the waste licence relates.” In this case, there is a need to further elaborate and give effect to articles 5 and 6 of Council Directive 1999/31/EC on the landfill of waste (the Landfill Directive) regarding the treatment of waste prior to landfill and diversion of biodegradable municipal waste from landfill.
- There is also a need to further the general Best Available Techniques (BAT) obligation to reduce the overall environmental impact of landfill. In this context, there are newly elaborated limits on the acceptance of biodegradable municipal waste at landfill (expressed in the document *Municipal Solid Waste – Pre-treatment and Residuals Management: An EPA Technical Guidance Document* published 19 June 2009) that have regard to the need to implement and achieve landfill diversion targets set out in the Landfill Directive. The diversion of biodegradable municipal waste will, *inter alia*, reduce landfill gas production and have consequent benefits regarding greenhouse gas emissions and the potential for odour nuisance.
- The EPA will also (a) determine whether new conditions on odour prevention and control should be proposed, (b) amend, replace or delete a number of other conditions where this is appropriate and (c) propose new conditions where these are deemed necessary.

The conditions limiting the acceptance of biodegradable municipal waste will contribute to implementation of the National Strategy on Biodegradable Waste (Department of the Environment, Heritage and Local Government, 2006).

The principal new/updated conditions relate to the following:

1. The imposition of new limits on the amount of biodegradable municipal waste that can be accepted at the facility (condition 1.6.2). From 1 January 2010, only 47% of municipal waste accepted at the facility for landfilling can be biodegradable. In 2013 this reduces to 30% and in 2016 to 15%. The benefits of this restriction include a reduction in landfill gas generation and hence odour nuisance potential and reduced leachate generation.
2. The requirement to treat all waste prior to acceptance for disposal (condition 1.6.1).
3. The need to measure waste intake and report compliance with the conditions described in items 1 and 2 above (condition 11.9).
4. Condition 5.6.2 prohibits the use of bio-stabilised residual waste¹ as daily cover unless the material has been stabilised in accordance with condition

¹ Defined in the PD.

1.7.4 of the licence and satisfies Department of Agriculture, Fisheries and Food requirements in relation to the treatment of animal by-products, recently articulated in DAFF guidance¹. Material not meeting these requirements must be disposed of in the landfill body³.

5. The need to ensure that all potential environmental liabilities are addressed (condition 12.2).

Compliance with Directives/Regulations

Error! Not a valid bookmark self-reference. sets out new and amended conditions that, subject to compliance with those conditions, will ensure that the facility operates in conformance with the provisions of the Landfill Directive (1999/31/EC) and will improve the overall environmental protection afforded by the licence.

Table 1 List of new or amended conditions

Interpretation		✓	To update with new definitions and change to refer to Waste Management Acts, 1996 to 2010.
1.3	✓		Amend condition to refer to Waste Management Acts, 1996 to 2010.
1.5.3	✓		Amend condition to remove reference to baled waste.
1.5.4		✓	To prohibit the acceptance of explosive, corrosive, oxidising or flammable material to the landfill.
1.5.5		✓	To prohibit the acceptance of bulk gypsum waste at any landfill cell accepting biodegradable waste.
1.5.6		✓	Prohibit the dilution or mixture of waste in order to fulfil waste acceptance requirements.
1.6.1		✓	Only pre-treated wastes permitted at landfill.
1.6.2		✓	Applies limits on the acceptance of BMW.
1.6.3		✓	Permits two or more licensed landfills to fulfil, in combination, the requirements of Condition 1.6.2.
1.7		✓	Determines the BMW content of the accepted waste.
2.3.2.1		✓	Revised requirements, regarding Schedule of Environmental Objectives and Targets.
2.3.2.2		✓	Requires Landfill Environmental Management Plan (LEMP).
2.4.1	✓		Rewording of the condition to maintain the communications programme as it has already been established.
3.10.1	✓		Rewording of the condition to clearly set out that the onsite wastewater treatment plant cannot be

¹ Conditions for approval and operation of composting plants treating animal by-products in Ireland, 27 March 2009, Department of Agriculture, Fisheries and Food, Animal By-Products Section.

³ Conditions for approval and operation of biogas plants treating animal by-products in Ireland, 27 March 2009, Department of Agriculture, Fisheries and Food, Animal By-Products Section.

			used to treat leachate.
3.11.1	✓		Reference added to bund design guidance.
3.12	✓	✓	Amends condition to include new requirements regarding landfill liner.
3.15	✓		Updates requirements for installation of landfill gas infrastructure and management of landfill gas flare(s).
4.1		✓	Updates requirements regarding restoration of facility
4.2	✓	✓	Updates requirements regarding landscaping and final profile levels.
4.3	✓		Updates requirements setting out that alternative technical specifications for final capping of landfill can be utilised at the site with the agreement of the Agency.
4.4		✓	Sets out new requirements regarding submission of Closure, Restoration, Aftercare and Management Plan (CRAMP).
4.5		✓	Sets out new requirements regarding nature of Closure, Restoration, Aftercare and Management Plan (CRAMP).
5.3		✓	Update requirement for waste acceptance procedures.
5.4		✓	Permits temporary storage in waste quarantine areas.
5.5.1(a)	✓		Removes requirement to dispose of baled waste only but includes an additional reference to disposal of residual waste only.
5.5.1(b)		✓	Sets out new requirements for dimensions of landfill working face.
5.5.1(c)		✓	Sets out a requirement to compact deposited waste using steel wheeled compactors.
5.6.2		✓	Only bio-stabilised residual waste may be used as landfill cover.
5.10.8		✓	Sets out a requirement to examine the feasibility of providing on-site treatment of leachate.
5.12	✓		Updated to include reference to the National Parks and Wildlife Service.
6.4.3	✓		Timeframe for the submission of the proposal for the monitoring of water entering surface water retention lagoons.
7.3	✓	✓	Updates requirements regarding management of litter.
7.6	✓		Wording amended for better understanding and includes reference to the National Parks and Wildlife Service.

7.8		✓	Sets out requirements for odour control and monitoring, including a requirement to develop an Odour Management Plan.
8.8.1	✓		Updates the condition to require an annual topographical survey.
8.9.1	✓		Updates the requirement for a biennial biological assessment of surface water quality.
8.10.1	✓		Updates the requirement for an annual ecological assessment of the entire site and to include reference to the National Parks and Wildlife Service.
8.12.1	✓		Requirement to carry out slope stability assessments annually after the commencement of waste acceptance at the facility.
8.14	✓		The data management system has been established; therefore, the condition has been updated to state that this system needs to be maintained.
8.15	✓		As the groundwater monitoring programme has been set-up this condition was altered to require on-going annual monitoring.
8.16	✓		Updates the requirement for use of standard methods for waste acceptance testing.
9.2	✓		Amends wording to require an annual review of the Emergency Response Procedure.
9.5		✓	Sets a requirement to develop and maintain a Accident Prevention Policy.
10.2	✓		Updates requirements regarding recording of waste shipments.
11.3		✓	Sets requirements regarding waste recovery reporting
11.6.1	✓		Updates requirements regarding submission of the Annual Environmental Report.
11.7		✓	Requirement to provide written acknowledgement of receipt of each delivery of waste to the facility.
11.8		✓	Requirement to notify the Agency of receipt of waste that does not meet waste acceptance criteria.
11.9		✓	Requirements for reporting to demonstrate compliance with diversion targets.
12.1.1	✓		Updates requirements regarding financial charges.
12.2	✓	✓	Environmental Liabilities Risk Assessment – update of existing condition and supplementary new conditions.
12.3		✓	Requirement that landfill costs be covered by disposal charges and amendment of text to refer to Waste Management Acts, 1996 to 2010.
Schedule A, Table A.1.3		✓	Total permitted landfill capacity by volume.

Schedule C, Schedule C.5	✓		Amends wording to include to 'flare(s)' rather than 'flare'.
Schedule D, Table D.1 – Column labelled 'Landfill Gas Flare'	✓		Updated to facilitate use of multiple landfill gas flares onsite, where required.
Schedule D, Table D.1 Note 1(a)	✓		Amends text of note to include monitoring location reference numbers for landfill gas flares.
Schedule D, Table D.1 Note 10	✓		No other groundwater monitoring locations have been agreed with the Agency under Condition 8.15; therefore, Note 10 is amended to state " <i>other locations as agreed with the Agency</i> ".
Schedule D, Table D.2	✓		Amends wording to include to 'Flare(s)' rather than 'Flare'.
Schedule D, Table D.7		✓	Waste monitoring
Schedule D, Table D.8		✓	Ambient odour monitoring
Schedule E	✓		Updates requirements with regard to recording and reporting to the Agency
Schedule F, Table F.1		✓	Addition of 'Note 1' to Table F.1 requiring the agreement of the Agency for the continued use of certain wastes (solid road planings, solid tarmacadam, solid asphalt) for recovery at the facility.
Schedule G	✓	✓	Updated requirements with regard to the Annual Environmental Report including removal of all specific references to baled waste in the Schedule of Environmental Objectives and Targets.

Other Proposed Changes to the Licence

It is proposed to remove Condition 5.9.2 on the acceptance of asbestos waste at the facility from the RD on the basis that asbestos cannot be accepted under the existing licence condition and that no request was made to amend it.

Submissions

First Party Submission

As the EPA initiated this review, the licensee (Cork County Council) was entitled to make a submission. A detailed submission was received and the following items are addressed within:

A. Biodegradable Waste Diversion Targets

Regarding the application of binding landfill waste acceptance limits for biodegradable waste, the licensee is of the opinion that:

1. It is 'inequitable' as it does not take account of the measures taken within the Cork Region to reduce municipal waste, including the biodegradable fraction, being sent to landfill.
2. It disregards the two core principles of European Waste Strategy, namely the Polluter Pays Principle and the Producer Responsibility Principle, both of which seek to ensure that the responsibility and costs of waste generation are borne by those who generate the waste.
3. It fails to take account of each region's respective annual contribution to:
 - (i) The national total of landfilled BMW and the respective contributions, by each Region, to the national total.
 - (ii) The measures taken by each region to reduce MSW arisings.

With regard to the measures taken by each region to reduce MSW arisings, evidence is provided in the submission of particular efforts and gains made by Cork County Council by way of the various regulatory and awareness-raising schemes, implemented under Cork County's series of Waste Management Plans, and as described in their submission on the review. It is considered by the licensee that the methodology used in the calculation of the targets and their allocation to landfill places a disproportionate burden on the licensee.

Response:

Notwithstanding any progress being made by Cork County Council to reduce the amounts of municipal and biodegradable waste being sent to landfill, it remains a fact that the landfill directive applies to all landfills and the restriction on the acceptance of biodegradable municipal waste therefore applies ultimately to all landfills. Consequently, the EPA is applying the relevant conditions to all landfill licences. Therefore, it is not considered inequitable to impose acceptance limits for BMW at this landfill gate. As pointed out above, the conditions limiting the acceptance of biodegradable municipal waste will contribute to implementation of the National Strategy on Biodegradable Waste (Department of the Environment, Heritage and Local Government, 2006), with the benefits of this restriction including a reduction in landfill gas generation, odour nuisance potential and leachate generation.

B. Monitoring Requirements

With regard to the monitoring requirements for testing bio-stabilised residual waste at the landfill, the licensee refers, by way of illustration, to the requirements of the relevant Condition and Schedule in the recently revised licence for Youghal landfill (W0068-03) and also to the EPA's '*Draft Protocol for the Evaluation of Biodegradable Municipal Waste sent to Landfill by Pretreatment Facilities*'. The licensee argues that such a monitoring regime, should it be applied to the landfill at Bottlehill, would place a significant sampling and testing burden on the landfill operator, which would be over and above the requirements of Annex II of the Landfill Directive (1999/31/EC).

Response:

It is not accepted that the testing of every 500 tonnes of biostabilised residual waste (as proposed in condition 1.7.5 and schedule D.7 of the RD) is a significant sampling and testing burden. It should be noted that this does not refer to the testing of all biodegradable waste accepted for disposal at the landfill. The Draft Protocol refers to methods of determining the quantity of biodegradable municipal waste land filled and this is required to assist in demonstrating compliance with BMW diversion targets as now required by EPA landfill licences.

C. Licence Conditions Related to Baling of Waste

There are a number of conditions in the current licence regarding acceptance and landfilling of baled waste. The licensee is seeking the removal of the requirement to receive predominantly baled waste at the facility by way of removal of reference to baled waste in the relevant licence conditions. The licensee argues that the baling of waste prior to landfill is no longer best practice in terms of landfill operation and it is their opinion that the option to accept baled or unbaled waste should be at the discretion of the facility operator.

To support its case in the matter, the licensee provided a detailed review of various documents from the licence application, oral hearing and the licence itself. The licensee reviewed all references to baled waste in these documents and discussed matters such as waste haulage and delivery to the facility, provision and use of infrastructure, dimensions of landfill working face and control of nuisance.

Response:

There is nothing, in my opinion, flawed in the arguments offered by the licensee in its review of these documents.

Before assessing the licensee's submission I carried out an examination of a number of relevant technical documents to ascertain whether the acceptance of unbaled waste, rather than baled waste, at a landfill would result in greater risk to the environment. The following documents were reviewed:

- Investigations for Landfills (EPA, 1995)
- Landfill Operational Practice (EPA, 1997)
- Landfill Restoration and Aftercare (EPA, 1999)
- Landfill Site Design (EPA, 2000)
- Landfill Monitoring (EPA, 2003)
- Current EPA BAT Guidance Note for the Waste Sector: Landfill Activities (EPA, 2003)
- Groundwater Protection Responses for Landfills (EPA, 2006)
- Protection of Groundwater when siting Landfills (EPA, 2006)
- Municipal Solid Waste: Pretreatment and Residuals Management - an EPA Technical Guidance Document (EPA, 2009)
- New draft EPA BAT Guidance Note on Waste Landfill (circulated for consultation in 2009)
- IPPC Reference Document on BAT for the Waste Treatment Industries (European Commission, 2006)
- EU Landfill Directive (1999/31/EC)

Overall, there is no indication in any of the above documents that there is an additional environmental risk posed by the deposition of unbaled waste over that of baled waste. In many cases, the matter of baled or unbaled waste does not arise at all in the document.

The licensee's submission deals with a large number of technical questions addressing the management of unbaled waste at the landfill, as opposed to predominantly baled waste. The technical issues are assessed here in no particular order of importance. Reference will be made as appropriate to relevant historic documents regarding this licence, namely,

- The original waste licence application submitted in 2001
- The Environmental Impact Statement (EIS)
- The inspector's report considered by the Board of the EPA
- The oral hearing report

Where any of these documents deals with the question in hand, it will be discussed. If these documents do not deal substantively with the question in hand, this will be stated. The objective is to ensure that full coverage is given to any commitments made by the licensee or the EPA in the licensing process that would indicate relative advantage of one form of waste presentation (i.e. baled or unbaled) over another.

a) Site Infrastructure and Engineering

The engineering of the landfill cells has been carried out as required by the EU Landfill Directive. The acceptance of unbaled waste at the facility will have no impact on the nature, provision or use of site infrastructure.

The Non-Technical Summary of the EIS and the original inspector's report both touch on the matter but do not provide any indication that the acceptance of unbaled waste would affect site infrastructure. I can find no additional critical information in any of the other historical documents related to this matter.

b) Waste Amounts and Transport

The EIS examined traffic movements to the site and referred specifically to the projected numbers of deliveries of baled and unbaled waste. It was originally envisaged in the application that unbaled waste would be delivered to the facility in 15 tonne loads with baled waste being delivered in 20 tonne loads. There is local concern that, if all waste arrives in unbaled form, there will be an increase in delivery traffic to the site.

The licensee submits that contemporary waste management practices for unbaled waste, such as bulking up of unbaled waste at transfer stations and the use of larger capacity transport vehicles, now effectively eliminates that advantage previously provided by movement of baled waste only. To that effect, the licensee proposes that the use of 23 tonne loads to deliver unbaled waste will in fact reduce the number of predicted vehicle trips to the site.

A number of questions were raised at the oral hearing as to whether or not the original application and EIS had clearly set out the relative proportions of baled and unbaled waste to be accepted at the facility given the local understanding at the time of application that almost all waste was to arrive in baled form from the Materials Recovery Facility (MRF) and that only minor amounts of waste would be in unbaled form. It was during the oral hearing that figures emerged regarding the intention at the time to accept 40% unbaled waste and 60% baled waste at the facility.

The oral hearing did therefore consider the matter of acceptance of a significant proportion of unbaled waste. In addition, as the landfill facility already has the capability to accept unbaled waste, the measures and controls already in place in the

current licence to manage acceptance and deposition of unbaled waste will continue to apply by way of the full suite of controls in the RD.

It is my view that the acceptance of waste in unbaled form will have no bearing on the projected amounts of waste that will eventually be consigned to the facility nor will it lead to a greater number of waste deliveries over the lifetime of the facility. I can find no additional critical information in any of the other historical documents related to this matter.

c) Waste Acceptance Procedures

Reference is made in the EIS to the development of procedures to manage acceptance and deposition of baled waste which would address matters such as use of closed containers for waste delivery and waste inspections.

As per condition 7.3.6 of the RD, waste will be accepted at the site only in fully covered containers. Condition 5.3 of the RD sets out updated requirements for the development of waste acceptance procedures which will address the acceptance of unbaled waste at the facility and will require the prior agreement of the Agency before implementation. Conditions 5.3 and 5.4 require inspection of all waste shipments, both at the point of arrival at the facility and at the point of deposition at the working face. The acceptance of waste in predominantly unbaled form will have no impact on these requirements. I can find no critical information in any of the other historical documents related to this matter.

d) Landfill Liner

It was proposed in the EIS that two bales of waste would be placed on top of the drainage layer in the landfill cells so as to provide some additional protection to the liner underneath from potential damage or puncture by unbaled waste materials.

According to Mr Caoimhin Nolan, the OEE inspector for the facility, it is in fact the movement of onsite vehicles that represents the greatest risk to the landfill liner and consequently, it is common practice to place an initial layer of waste at the bottom of each cell upon which site vehicles can then safely operate. The licensee is proposing that the first layer of waste overlying the drainage medium will be laid at thickness of 1 to 2m to provide a protective layer for the lining system. I can find no additional critical information in any of the other historical documents related to this matter.

e) Landfill Working Face

It is contended by the licensee that with effective waste compaction and daily cover of unbaled waste, an equally structured working face as would be established with baled waste can be achieved.

This position is accepted. Unlike baled waste, the landfilling of unbaled waste will not result in the creation of a near vertical working face. The application of daily cover to the compacted unbaled waste is more easily carried out compared to the management of stacked baled waste which requires the application of plastic sheeting at the end of the working day.

The EIS non-technical summary proposed that the landfill facility would have two working faces, one for baled waste (30m by 30m) and one for unbaled waste (40m by 40m). However, the existing licence allows only one working face at the landfill. This limit remains under Condition 5.5.1(a) of the RD. In addition, Condition 5.5.1(b) of the RD sets out specific limits for the dimensions of the landfill's sole working face. I

can find no additional critical information in any of the historical documents related to this matter.

f) Waste Placement

The licensee discusses in detail the relative advantages and disadvantages of placing baled and unbaled wastes. It is my view that there is no one critical difference between placement of baled versus unbaled waste that provides an over-riding advantage for baled waste. The placement of unbaled waste may provide some additional challenges for the landfill operator in terms of installation of gas and leachate management infrastructure but these are not new to landfill operators accepting unbaled waste in Ireland and will, in any case, be effectively controlled by Conditions 2 (Management of the Facility), 3 (Facility Infrastructure) and 5 (Facility Operation and Waste Management) of the RD. I can find no additional critical information in any of the historical documents related to this matter.

g) Landfill Gas Formation

While the deposition of unbaled waste may lead to a different approach to the installation of landfill gas collection networks at the facility such infrastructure can be installed with comparative ease in modern, well managed, landfills accepting unbaled waste. Condition 3.15 of the RD has been amended to reflect modern requirements for installation and management of landfill gas infrastructure. I can find no additional critical information in any of the historical documents related to this matter.

h) Nuisance

The EIS set out the measures envisaged at the time to control windblown litter, scavenging birds, fly and vermin infestation, odour, noise and dust. It is suggested in the EIS that the deposition of baled waste may present some benefits over unbaled waste.

The case is made in the licensee's submission that the prevention of litter blow is the first and most effective step in litter management at a landfill facility and refers to its own achievements regarding diversion of dry recyclables (a litter source) from residual waste sent to landfill. However, it is also accepted by the licensee that waste in baled form can reduce the potential for litter arising as the waste is being deposited. Reference is made to the fact that Arthurstown landfill, which accepts only baled waste, has, as a consequence, no need for litter netting. The licensee points out that the Bottlehill facility has litter nets installed at the cell perimeter to capture all wind blown litter. Nonetheless, the licensee is also proposing the additional use of 'close-in' netting, which will be deployed in and around the landfill working face to capture escaping litter when unbaled waste is being deposited.

It is proposed to amend Condition 7.3 of the current licence, which provides for control of litter, to include two new subconditions. Condition 7.3.3 of the RD provides for the use of mobile litter netting systems in close proximity to the landfill working face, while Condition 7.3.7 requires the development of procedures for operation of the facility during adverse wind conditions.

The pre-treatment requirement for all waste prior to delivery to the facility will reduce the amount of biodegradable waste requiring deposition, which will in turn reduce the presence of food sources for scavenging birds, vermin and flies. In addition, the speedy compaction and covering of unbaled waste by steel wheeled compactors, which is required by condition 5.5.1(c) of the RD, will also reduce the risk of such

nuisance. All existing controls for scavenging birds (condition 7.6) and fly infestation (condition 11.5) as set out in of the current licence will remain in force in the RD.

With regard specifically to odour nuisance, most odour complaints arise due to lack of proper management of waste (e.g. poor compaction, covering and gas collection, etc.). Measures were proposed in the EIS for control of odour. These measures are similar to those proposed for control of nuisances such as litter and scavenging birds. The application of the new BMW diversion targets and the requirement to pre-treat all waste prior to landfill will reduce the biodegradable fraction of the waste arriving at the facility, which in turn will reduce the risk of odour generation and nuisance.

In addition, Condition 3.15 of the RD has been amended to reflect modern requirements regarding installation and management of landfill gas infrastructure. Consequently, passive landfill gas management will not be permitted at the site, a measure which will reduce the risk of odour nuisance. All other landfill gas infrastructural, management and monitoring requirements, as set out in the current licence, will remain in force in the RD and will be unchanged by the acceptance of unbaled waste only. Notwithstanding this, Condition 7.8 of the RD sets out new detailed requirements regarding odour control and monitoring, with a specific requirement to develop an Odour Management Plan.

In relation to noise, the licensee proposes that suitable delivery vehicles will be able to bring the unbaled waste directly to the working face of the landfill rather than, as had been first envisaged, having the waste transferred to site-hauling vehicles at the marshalling yard prior to haulage to the landfill working face. The elimination of this 'double-handling' of waste at the marshalling yard will result in a reduction in site vehicle movements and associated noise levels. Mitigation measures proposed in the EIS for control of noise and dust will still apply.

Overall, all relevant controls for nuisance and nuisance monitoring remain unchanged in Conditions 7 and 8.13 of the RD, respectively. The matter of nuisance was raised in the oral hearing report but did not offer anything critical that would alter my position. I can find no additional critical information in any of the other historical documents related to this matter.

i) Fire Risk

It is contended by the licensee in their submission that the incidence of fires at modern landfills is a rare, if ever occurring, event. However, it is also accepted that the risk of fire exists and must be prevented by good compaction of waste by a landfill compactor, which reduces oxygen supply to waste.

Waste compaction by steel wheeled compactors is required by condition 5.5.1(c) of the RD. The deposition of predominantly unbaled waste will not, by itself, increase the risk of fire at the landfill. I can find no additional critical information in any of the historical documents related to this matter.

j) Density of Waste Body

It is pointed out by the licensee that maximising the density of waste as deposited has numerous advantages relating to stability, settlement, landscaping, fire control, vermin and nuisance control. It is stated that the degree of density achievable with compaction of unbaled waste by modern compactors at the landfill face cannot be achieved with waste bales. An example is provided of the landfilling practices at Glasgow City Council's municipal landfill facility where bales of waste were broken prior to landfill so that effective compaction and waste densities could be achieved.

Glasgow City Council has now apparently abandoned the acceptance of waste in baled form at their facility.

Unbaled waste may have different settlement characteristics to baled waste and the process can be difficult to predict. Therefore, effective compaction to achieve maximum waste densities as soon as possible is required. This will be an advantage with respect to the placement of the final capping layer and landscaping.

It is apparent from the oral hearing report that it was originally intended to accept 40% unbaled waste and 60% baled waste at the facility. I consider that the acceptance of such a mixed waste form would contribute to differential waste settlement given that the waste types have different compaction characteristics. This in turn could lead to stability issues at the facility. Therefore, the acceptance of predominantly unbaled waste will, post compaction, lead to the formation of a more uniformly dense waste body than would otherwise have been achievable with a more equal mixture of baled and unbaled waste. In this regard, the licensee's position is accepted. I note again that compaction of deposited waste by steel wheeled compactors is required by condition 5.5.1(c) of the RD. I can find no additional critical information in any of the other historical documents related to this matter.

k) Leachate Generation and Surface Water Management

The landfilling of predominantly unbaled waste will have no impact on the rate or amount of leachate generated in the waste body as the rate of degradation of waste in a landfill is determined mainly by the temperature and moisture content of the waste mass rather than whether it is baled or unbaled. All existing licence requirements regarding leachate management infrastructure remain in force in the RD. I can find no additional critical information in any of the other historical documents related to this matter.

l) Surface Water Management

The management of surface water at the site will not be affected by the acceptance and deposition of primarily unbaled waste and I can find no additional critical information in any of the historical documents related to this matter.

m) Groundwater

The oral hearing report referred to the local 'hydrologically sensitive environment' in which the landfill is located with the inference being that the landfilling of baled waste rather than unbaled waste posed less of a risk to groundwater.

The deposition of pre-treated unbaled waste will not introduce a greater risk to groundwater than already exists and that has already been assessed in the EIS and accounted for by way of relevant controls in the RD. I can find no additional critical information in any of the other historical documents related to this matter.

n) Other Matters

The acceptance of unbaled waste will not introduce any additional risk to the hen harrier population over and above those already outlined and discussed in the application, EIS and inspectors report. All relevant controls in the existing licence regarding ecological protection (condition 5.12) remain unchanged in the RD.

The acceptance of unbaled waste at the facility will not have a visual impact on the locality that has not already been assessed in the EIS.

Regarding the phasing of landfill operations and the closure and aftercare of the facility, there is nothing to suggest that the landfilling of unbaled waste will affect any of the related operational or closure/aftercare plans.

In the oral hearing report, it is stated that if the landfill is to operate within (as applied at the time) 'current waste management requirements' the nature of the waste accepted at the landfill:

- Should be 'truly residual, preferably in baled form with a significantly reducing organic content', and that
- Only baled waste 'that has been fully pre-treated for maximum separation and recovery, particularly of the organic fraction' should be accepted at the facility.

The original licence application and EIS set out a proposal for a facility for disposal of pre-treated residual waste which was designed to accept both baled and unbaled waste. The requirement to pre-treat all waste according to modern EPA guidance (2009) and the proposed application of BMW acceptance limits will result in a significantly reducing organic fraction of the waste accepted for landfill at the facility. Moreover, current waste management practice does not specifically require deposit of baled waste alone. The Agency has not applied this requirement to any other waste licence since the granting of the Bottlehill licence. I can find no additional critical information in any of the other historical documents related to these matters.

o) Proposed Amendments to Licence Conditions

Regarding its request to amend the various provisions in the current licence to remove the reference to baled waste, the licensee addresses each requirement in turn. These are assessed and responded to below.

- (i) The licensee proposes that the licence introduction be amended to remove the reference to waste in baled form.

Recommendation:

Remove all reference to baled waste in the introduction to the RD.

- (ii) The licensee proposes an amendment to the explanation in 'Part I Activities Licensed' of the licence for activity Class 13 to provide for temporary storage of baled and unbaled waste in the marshalling yard and also to remove the reference to the use of sealed containers.

Recommendation:

Continue to permit waste disposal activities Classes 4, 5 and 13 of the Third Schedule of the Waste Management Acts 1996 to 2010. However, it is recommended that the explanation provided for Class 13 be amended to read as follows:

'This activity is limited to the temporary storage on-site of unacceptable waste in the waste quarantine area prior to transport to another site'.

It is not proposed to permit temporary storage of waste at the waste marshalling yard.

- (iii) The licensee proposes that condition 1.5.3 be amended to remove requirement to accepted only baled waste for disposal at the facility.

Recommendation:

Amend Condition 1.5.3 to read as follows in the RD:

'Only residual waste shall be accepted for disposal at the facility'.

- (iv) The licensee proposes that condition 5.5.1 be amended to remove the reference to baled waste in relation to:
- The operation of a single working face as required by condition 5.5.1(a), and
 - The requirement, as set out by condition 5.5.1(b), for the licensee to submit to the Agency a report as to the size of the landfill working face.

Recommendation:

Amend condition 5.5.1(a) to read as follows in the RD:

'Only one working face shall exist at the landfill at any one time for the deposit of residual waste other than the deposit of cover or restoration materials'.

Amend condition 5.5.1(b) to read as follows in the RD:

'The working face of the landfill shall be no more than 25 metres long and 25 wide (i.e. $625m^2$ surface area), no more than 2.5 metres in height after compaction, and have a slope no greater than 1 in 3'.

- (v) The licensee proposes the amendment of 'Schedule G: Content of the Annual Report' of the licence to remove reference to waste in baled form.

Recommendation:

Amend relevant provision of Schedule G to read as follows in the PD:

'...Quantity and composition of waste received, disposed of and recovered during the reporting period and each previous year.'

Third Party Submission

One third party submission was received by the Agency from solicitors Noonan Linehan Carroll Coffey on behalf of John O'Riordan and the Bottlehill Environmental Alliance. The following are items included in the submission:

a) Baled Waste

It is requested that the Agency reject the licensee's request to have the licence amended by removal of reference to baled waste. In support of this request, a number of excerpts from the oral hearing report are provided which outline the Chairman's reservations in relation to the matter at the time. It is contented in the submission that the Chairman's concerns are as relevant today as they were when first made. In light of this contention, each concern raised is addressed in turn below:

(i) Nature and Volumes of Waste to be Accepted

The Chairman stated that the *'The most significant issue with respect to the proposed waste licence is the nature of the waste and its volumes'*.

Response:

The facility has the capability to accept both baled and unbaled waste. Prior to arriving at the facility, all waste will require pre-treatment according to the EPA's

guidance document. Therefore, whether the waste is baled or unbaled will not affect the 'nature' of the waste arriving at the facility. As discussed above, it is my view that the acceptance of waste in unbaled form will have no bearing on the projected amounts of waste that will eventually be consigned to the facility.

(ii) Definition of Residual Waste

The Chairman outlined his difficulty in obtaining a clear meaning or implication for the term 'residual waste' at the time of the oral hearing.

Response:

The term 'residual waste' is now defined in the RD. In addition, the Agency issued guidance on the matter in 2009. All waste must undergo treatment as per the Agency guidance document before despatch to the facility. This requirement provides certainty and consistency as to what the terms 'treatment' and 'residual waste' actually mean and entail.

(iii) Materials Recovery Facilities (MRF)

The Chairman referred to the fact that, while it was the intention of Cork County Council at the time of original application to route all waste through 'treatment stations or MRFs', no MRFs were in place at that time.

Response:

Cork County Council do not now intend to provide a network of MRFs but to utilise privately operated MRFs, which are currently available.

(iv) Number of Landfill Working faces

The Chairman made a statement that *'having effectively two operating faces (baled and loose waste) in the landfill throughout the life of the site is neither good operating practice nor good risk management'*

Response:

This matter has already been dealt with above.

(v) Organic Waste Volumes

The Chairman raised concerns about the volumes of organic waste that will be deposited over the lifetime of the facility. He predicted at the time *'that there is likely to be as much organic waste dumped per year at the end of the life of the landfill as at the beginning, notwithstanding the legislative requirement to separate out organic waste and to reduce the volumes landfilled in the medium term – the proportions of organic waste may be improving but the absolute tonnage amounts are predicted to remain relatively stable'*.

He continued to state that, as a consequence of the above that *'there will be ongoing, long term leachate and gas management problems. The long term sustainability of such a waste management solution at this site remains in question'*.

Response:

It is now national policy to reduce the amounts of biodegradable waste being deposited at landfills. The conditions proposed in the RD that limit the acceptance of

biodegradable municipal waste will contribute to implementation of that policy. The benefits of this restriction include a reduction in landfill gas generation, odour nuisance potential and leachate generation. In addition, Condition 3.15 of the RD has been amended to reflect modern requirements for installation and management of landfill gas infrastructure and all existing licence requirements regarding leachate management infrastructure remain in force in the RD.

(vi) Nature of Pre-treatment of Waste

The Chairman made the following statement in the oral hearing report:

'if this site is to operate under a licence consistent with current waste management practice, it should only be baled waste and also truly 'treated' (i.e. fully/practically separated waste) having passed through an appropriate facility'

Response:

This matter has already been dealt with under 'Other Matters' above.

(vii) Acceptance of Baled Waste Only

The contention is made in the submission that the Chairman's opinion regarding the necessity to allow acceptance of baled waste only was accepted by the Agency and that this acceptance was reflected in conditions 1.5.3 and 5.5 of the current licence. These conditions set out some requirements regarding the acceptance and deposit of baled waste only.

Response:

This contention is not accepted. The Agency included these conditions in the Bottlehill Landfill licence as their inclusion was requested by the licensee in the licence application. Subsequent to the granting of the current licence for Bottlehill Landfill, the Agency has not applied similar conditions to any other landfill licence.

b) Treatment Facilities and Waste Acceptance

As the use of a Council provided MRF is now to be replaced with privately operated treatment facilities and due to what is described as '*the additional challenge posed by the multitude of separate facilities sending waste to the site*', it is requested that the Agency be more specific in relation to the licence conditions regarding waste treatment, characterisation and acceptance over and above the requirements set out in the current licence in condition 5.3.

Response:

As proposed in the RD, all waste must first undergo treatment as per the Agency guidance document before landfilling at the facility. The RD has a range of new conditions covering such matters as prohibition of certain waste types, treatment of waste and limits on biodegradable waste. A new Condition 5.3 sets out updated requirements for the development of waste acceptance procedures, which will require the prior agreement of the Agency before implementation. Condition 1.6 on the limitation of biodegradable municipal waste means the character of municipal waste accepted will be quantified. Conditions 5.3 and 5.4 set out detailed requirements in the RD with regard to inspections of all waste shipments, both at the point of arrival at the facility and at the point of deposition at the working face. Overall, it is considered that the RD fully addresses third party concerns on the matter.

c) Leachate Treatment

Reference is made to the current licence and to the requirement to obtain confirmation from Cork County Council about the suitability and effectiveness of the Mallow Waste Water Treatment Plant to accept and treat leachate from the Bottlehill facility. It is requested that evidence should now be provided in relation to the WWTP's ability to ensure '*compliance with the requisite standards currently and into the future*' when the plant commences treatment of the leachate.

Response:

The RD retains this requirement by way of Condition 5.10.7. Among the provisions of this condition is the requirement for Cork County Council to demonstrate to the Agency that the Mallow WWTP is capable of treating the leachate to appropriate standards and, should this not be possible, that an alternative WWTP that is capable of treating the leachate is identified.

Moreover, it is proposed to include a new condition in the RD. Condition 5.10.8 of the RD requires the licensee to examine the feasibility of providing onsite treatment of the leachate generated at the site.

d) Hydrological and Hydrometeorological Study and Catchment Delineation

An excerpt is provided from the oral hearing report which outlines the Chairman's concerns regarding the hydrological assessment in the EIS and the need to confirm the hydrological and hydrometeorological regime at the site with '*full delineation of the surface and groundwater catchments involved*'. It is requested that this work now be done, or confirmed as the case may be, and it is considered by the third party that the licence review presents an opportunity to do so.

Response:

Notwithstanding the concerns of the Chairman, the current licence did not set a requirement to carry out any of the specific work referred to above. The Chairman in fact accepts (in the same excerpt) that a 'worst case' approach was taken with the design of the site and that the site could be engineered to contain and manage the relevant emissions. The facility has been designed to meet the requirements of the Landfill Directive and it is my view that this 'worst case' approach suitably protects surface water and groundwater in the vicinity of the facility. Consequently, it is not proposed to insert any additional requirements in the RD regarding the hydrological and hydrometeorological regime at the site.

Cross Office Consultation

The OEE inspector for the site, Caoimhin Nolan, was consulted during the review process. OEE inspector Kealan Reynolds was also consulted. Both inspectors have extensive experience and knowledge of matters related to landfill operation and waste licence enforcement. Advice in relation to litter control, operations in high winds, bird control, landfill settlement, landfill gas infrastructure and management and general licence conditions was taken and incorporated into the RD.


Recommended Decision

We have considered all of the relevant technical documents and all of the documentation governing the grounds for the review of this licence. Overall, we cannot find any technical reason as to why the predominant acceptance of baled waste

should be an environmentally superior option over the general acceptance of unbaled waste. Operational practices may change on site but at no greater risk to the environment. BAT will continue to be applied and the change from baled to unbaled waste will not require any engineering or infrastructure changes.

The carrying on of the activities in accordance with the conditions of the RD will not cause environmental pollution and will ensure compliance with the Landfill Directive. The new/amended conditions will not affect the existing level of regulation of emissions from the facility. We recommend that the Agency grant a revised licence subject to the conditions set out in the RD and for the reasons as drafted.

Signed



Michael Owens/Caroline Murphy
Inspectors

Procedural Note

In the event that no objections are received to the Proposed Decision on the application, a licence will be granted in accordance with Section 43(1) of the Waste Management Acts 1996-2010.
