

This report has been cleared for
 submission to the Board by the
 Programme Manager Frank Clinton.
 Signed A. O'Leary Date 29/6/11

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

Environmental Protection Agency
 An Ghníomhaireacht um Chaomhú Comhsháil

**REPORT OF THE TECHNICAL COMMITTEE ON OBJECTIONS
 TO LICENCE CONDITIONS**

TO:	Directors	
FROM:	Technical Committee	ENVIRONMENTAL LICENSING PROGRAMME
DATE:	1 st June 2011	
RE:	Objection to a Proposed Decision (PD) for KTK Landfill Ltd. in relation to the KTK Landfill located at Brownstown and Carnalway, Kilcullen, County Kildare, Waste Licence Register No. W0081-04.	

Application Details

Class of activity: (P = principal activity)	Third Schedule: D1, D5 (P), D13 & D15. Fourth Schedule: R4, R5 & R13.
Location of activity:	Brownstown and Carnalway, Kilcullen, County Kildare.
Licence application received:	The Agency initiated a review of waste licence register no. W0081-03 on 31 st August 2010.
PD issued:	2 nd March 2011
First Party Objection received:	29 th March 2011
Third Party Objection Received:	None

Company

This report relates to the first party objection received by the Agency on the 29th March 2011 regarding a Proposed Decision (PD) issued to KTK Landfill Ltd. in relation to the KTK Landfill.

KTK Landfill is an existing, privately owned and operated, and specially engineered landfill accepting commercial and non-hazardous industrial wastes at a facility at Brownstown and Carnalway, Kilcullen, County Kildare. The facility was constructed in 1999 and has a total capacity of approximately 1,540,500 tonnes. The landfill closed in 2008 and re-opened in 2009 in order to utilise available void space. The facility is approximately 25 hectares in size and is situated in a rural location some 2.5 km to the north-east of Kilcullen town. The facility was issued its first waste licence, W0081-01, on 12 April 1999 which authorised it to accept approximately 220,000

tonnes per annum of commercial and non-hazardous industrial waste. Adjacent to the north boundary of this facility is Silliot Hill Landfill (W0014-01) which is operated by Kildare County Council.

KTK Landfill Ltd. did not apply for the current licence review, W0081-04. This licence review was initiated by the Agency on 31 August 2010. This review was primarily concerned with ensuring that the landfill, in its current and final phase, is operating in compliance with all relevant requirements of the Landfill Directive (1999/31/EC) including the need to divert biodegradable municipal waste (BMW) from landfill. Condition 8.4 of the PD specifies waste must be treated before disposal in the landfill and its treatment needs to reflect the Agency's pre-treatment technical guidelines published in 2009 '*Municipal Solid Waste – Pre-treatment and Residuals Management: An EPA Technical Guidance Document*'. Limits on the acceptance of BMW were introduced in Condition 8.5 of the PD. There was also a consequential need identified in the PD for the licensee to update and revise waste acceptance procedures, maintain records to demonstrate compliance with new requirements and provide periodic reports on waste disposal and recovery at the facility.

Consideration of the Objection by Technical Committee

The Technical Committee comprised of Caroline Connell (Chair) and Ewa Babiarczyk. This report contains the comments and recommendations of the Technical Committee following an examination of the objection. Discussions were held with the Licensing Inspector, Mr. Brian Meaney. Objection No. 1 and 2 were discussed with the Office of Environmental Enforcement (OEE) Inspector for the facility Mr. Damien Masterson.

This report considers one valid first party objection, which was submitted by KTK Landfill Ltd. The main issues raised in the objection are summarised below. However, the original objection should be referred to at all times for greater detail.

First Party Objection

The Licensee submitted a letter addressed to the Agency in the form of a short introduction and three main points of objection as set out below.

Objection No. 1:

Condition 5.5.2 of the PD states that

“All leachate or contaminated water tankered from the facility shall be transported to Athy Waste Water Treatment Plant and disposed of there, unless otherwise agreed by the Agency. The quantity disposed of shall be restricted to 55m³ per day unless otherwise agreed by the Agency and with the prior agreement of the Sanitary Authority. Procedures for the disposal of leachate at the treatment plant shall be in accordance with any written requirements of the Sanitary Authority”.

The Licensee has recommended that the condition is reworded as follows

“All leachate or contaminated water tankered from the facility shall be transported for disposal to Waste Water Treatment Plants approved by the Agency. Procedures

for the disposal of leachate at the treatment plants shall be in accordance with any written requirements of the treatment plant operator”.

The Licensee feels that Athy Waste Water Treatment Plant (WWTP) should not be specified in Condition 5.5.2 as this plant has been unavailable to accept the leachate from KTK landfill since 2008 and as such KTK landfill leachate is transported to a variety of other approved waste water treatment facilities. The Licensee has highlighted that Condition 5.6 states that *“The licensee shall maintain for inspection by the Agency evidence to demonstrate that an agreement is in place regarding leachate acceptance (at an off-site facility or facilities) and treatment”.*

The OEE has received and approved requests from the Licensee since 2008 relating to the transport of leachate to facilities other than Athy WWTP.

The Licensee also feels that it is restrictive to impose a limit of 55m³/day and feels that this should remain the prerogative of the relevant treatment facility having regard to its regulatory controls.

In order to allow for the selection of alternative facilities for the treatment of leachate or contaminated water, the Technical Committee recommends the following amendment to Condition 5.5.2.

Recommendation:

Amend Condition 5.5.2 to read as follows:

All leachate or contaminated water tankered from the facility shall be transported to a facility or facilities agreed by the Agency. Procedures for the consignment of leachate shall be maintained to the Agency’s satisfaction.

Objection No. 2:

General overview:

The Licensee has objected to the increased monitoring required under *Schedule C.1.3 Monitoring of Landfill Gas Emissions* in comparison to the current licence. The Licensee has noted that measurements of additional parameters are required in the facility office and at the sewer discharge. The Licensee feels that these additional requirements are unreasonable for the following reasons:

- the current monitoring regime is sufficient;
- the landfill facility is due to close and be fully capped by the end of 2011 at which time the decommissioning and removal of certain infrastructure will be considered; and
- the cost of installing the additional monitoring equipment is not justified on the basis that the landfill will be closed and because other monitoring is in place.

Objection 2(a) - monitoring requirements at the facility office:

The Licensee has stated that the facility office will cease to be occupied in early 2012 as it is envisaged that the landfill will enter the aftercare phase. A methane gas alarm system is operational in the site office and has been routinely serviced and calibrated.

The Licensee has stated that this alarm system will continue to operate in accordance with Condition 6.12.2(iv). The Licensee feels that because the facility office will be largely unoccupied it is excessive to require additional monitoring and therefore the Licensee requests that the Agency removes the requirement to monitor carbon dioxide (CO₂) and oxygen (O₂) as per *Schedule C.1.3*.

Schedule C.1.3 was updated to reflect the Agency's current requirements regarding the monitoring of landfill gas emissions. Condition 6.12.2(iv) of the current licence and the proposed licence states that the telemetry system shall include for "...*Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility*". Table C.4 of the *Landfill Manual – Landfill Monitoring* (EPA, 2003) lists the site office as a typical landfill gas monitoring point in a non-hazardous landfill. It also lists parameters for monitoring which include: methane, carbon dioxide, oxygen, atmospheric pressure and temperature. The monitoring of landfill gas is required as part of the landfill gas management system both in the operational and the restoration/aftercare phases of the landfill.

Table 6 of KTK Landfill Limited's *Quarter 1, 2011, Environmental Monitoring Report* submitted to the Agency 18 April 2011 reported methane and carbon dioxide exceedence at gas well numbers G1 and G2 which are located on either side of the facility office. In correspondence dated 20 April 2011 received by the OEE from KTK Landfill Ltd. it was noted that from June 2008 to April 2010 gas levels in several of the site boundary gas monitoring boreholes had shown significant increases in both methane and carbon dioxide levels. Greenstar stated they remain concerned at the methane concentrations at well location G10 (9.6%) owing to its proximity to the offices and the ESB Sub Station on-site.

Condition 6.5 allows for a reduction in the frequency and scope of monitoring required based on an evaluation of data collected by the OEE.

Having regard to the above considerations, the Technical Committee does not recommend a change to monitoring requirements at the facility office as outlined in *Schedule C.1.3 Monitoring of Landfill Gas Emissions* of the proposed decision.

Objection 2(b) - monitoring requirements at the sewer discharge:

The Licensee requests that the Agency removes the requirement to continuously monitor methane (CH₄) and O₂ at the sewer discharge as per *Schedule C.1.3* of the proposed decision as the Licensee feels this is excessive and that it would not reflect how leachate and effluent is managed at the facility. The Licensee presented the following information in support of this objection:

- The Licensee has installed a reverse osmosis (RO) system to treat leachate with post treatment aeration of the effluent to ensure ongoing compliance.
- Dissolved methane in the effluent is reduced substantially during the treatment process to concentrations routinely less than 0.04 mg/l.
- The Licensee confirmed that this effluent is discharged to the sewer via a 500m rising main to a gravity section of pipeline located at the public road.
- The rising main is normally fully charged with effluent as it is continuously discharged from the facility and therefore there is no head space in which to measure methane. Recent integrity testing of this section of sewer indicates that it passed and is therefore sealed.

- The gravity section, into which both KTK Landfill and Silliot Hill Landfill discharge, is located in the public road outside the boundary of the facility.
- As there are several perimeter landfill gas monitoring wells along the route of the sewer serving both KTK Landfill and Silliot Hill Landfill it is submitted that the monitoring of the landfill gas in the area is sufficient. Furthermore, the Licensee has stated that requiring KTK Landfill to monitor landfill gas in a sewer shared by both KTK and Silliot Hill Landfills is inequitable as it is Silliot Hill Landfill that discharges untreated leachate (but methane stripped) to the sewer.

Additional monitoring was added to *Schedule C.1.3* of the proposed licence in order to bring this licence in line with the Agency's current requirements regarding the monitoring of landfill gas emissions. As outlined in the *Landfill Manual – Landfill Operational Practices* (EPA, 1997) methane is flammable and explosive at concentrations of 5-15 % v/v in air and, if not properly monitored and controlled, the landfill gas can give rise to flammability and explosive properties.

The Technical Committee considers that the potential for gas build in the rising main is not a significant risk as the effluent has low levels of dissolved methane and the rising main is normally fully charged as effluent is continuously discharged from the leachate treatment system. Gas may occur at the section of the rising main closest to the public sewer where any headspace is likely to be filled with gas entering the rising main from the public sewer itself. As such the Technical Committee considers that continuous monitoring of CH₄ and O₂ is not required and that quarterly monitoring is appropriate.

However, the Technical Committee recommends that a note is added to Schedule C.1.3 stating that if the data collected from quarterly monitoring demonstrates that CH₄ and O₂ are at levels which are considered to cause health and safety, explosive or environmental risk, the OEE can increase the monitoring frequency for these parameters at this location.

It has been also noted that the text of Note 1 and Note 2 are missing from Schedule C2.2 of the PD. The Technical committee recommends the following text for Notes 1 and 2.

Recommendation:

Amend Schedule C.1.3 and Schedule C.2.2 to read as follows (amendments highlighted in yellow):

C.1.3 MONITORING OF LANDFILL GAS EMISSIONS

Location: Perimeter Landfill Gas boreholes ^{Note 1}
 and
 At least one monitoring point per cell (to be agreed)
 and
 Other selected locations as may be specified

	Boreholes and Cells	Facility Office	Sewer Discharge Note 3	
Methane (CH₄)	Monthly	Continuous	Quarterly	Infrared analyser/FID
Carbon dioxide (CO₂)	Monthly	Continuous		Infrared
Oxygen (O₂)	Monthly	Continuous	Quarterly	Electrochemical cell
Atmospheric pressure & trend	Monthly	Weekly		Standard method
Temperature	Monthly	Weekly		

- Note 1:** All perimeter monitoring boreholes must be installed to the standards specified in the Agency Guidance on Landfill Monitoring.
- Note 2:** Or other method agreed.
- Note 3:** The frequency of monitoring shall be increased upon the Agency’s instruction based on the results of quarterly monitoring.

C2.2 LEACHATE DISCHARGE TO SEWER

Location: To be agreed

	Note 2
Flow to sewer	Daily
Temperature	Daily
pH	Quarterly
BOD	Quarterly composite sample
COD	Quarterly composite sample
Suspended solids	Quarterly composite sample
Total organic carbon	Quarterly composite sample
Chloride	Quarterly composite sample
Ammonia	Quarterly composite sample
Nitrate	Quarterly composite sample
Orthophosphate	Quarterly composite sample

- Note 1:** All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures.
- Note 2:** Leachate composition to be monitored at the leachate holding tank.

Objection No. 3:

Condition 8.5.1 (i) states that “*Until 30 June 2013 inclusive, a maximum of 47% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW), measured on a calendar year basis or, in 2010 and 2013, part thereof...*”

The Licensee feels that the current limit of 47% does not accurately reflect the national obligation to divert biodegradable waste from landfill and is therefore overly restrictive. The Licensee also feels that as Greenstar has direct experience of falling waste arisings and of reductions in waste for landfill in recent times, the information available to the Agency through quarterly BMW reports submitted by licensed landfills would facilitate a reckoning of the waste disposed to landfill and the corresponding BMW quantity. The Licensee has stated that the result of such an exercise would lead to an increase in the acceptable BMW limit. The Licensee has stated that, as it stands, the 47% limit has only triggered automatic non-compliances for many landfills for 2010 due to circumstances that are largely beyond the control of landfill operators and therefore the Licensee requests that the Agency amends the 47% limit using more recent data.

The calculation on BMW diversion from landfill in the EPA technical guidance document *Municipal Solid Waste - Pre-treatment and Residuals Management* (2009) was based on 2007 statistics. The 2009 National Waste Report identifies that there was a decrease of 8.4% in the generation of municipal waste in comparison to 2008 and that Ireland was on track to meet the first EU Landfill Directive BMW diversion target due by July 2010. The OEE have reported that the national target for 2010 was achieved, but with general non-compliance with the 47% limit expressed in landfill licences. There is no scope to amend the 47% limit in this one licence alone. Amendment of the limit can only be done simultaneously for all landfill licences to ensure uniform controls on BMW being accepted in all landfills accepting MSW.

The Licensee also feels that the uneconomic gate fees being charged by some landfills undermine the viability of investment in alternative treatment facilities and therefore the waste that is being presented to landfill operators has undergone treatment that, overall, fails to meet the 47% limit. The Licensee has stated that in order to ensure that national policy is implemented it is incumbent upon the Agency to ensure that landfill gate fees are adequate to ensure compliance with Section 53A of the Waste Management Act. The Licensee believes that such an action will in turn stimulate investment in and use of bio-diversion facilities. The Licensee considers that stimulating investment through an increase in the landfill levy compounds the problem as it raises the overall cost of landfill while further depressing the gate fee payable to the operator triggering further difficulties in relation to Section 53A compliance. The technical committee is not in a position vis-a-vis this licence application to consider these matters of national policy and general landfill licence enforcement.

Section 53A of the Acts is addressed in Condition 12.4 of the PD.

Taking the above into consideration the Technical Committee recommends no change.

Recommendation:

<i>No change</i>

Additional recommendation

The Technical Committee also recommends that the disposal and recovery activity classes referenced in the PD are updated to reflect the class codes and descriptions outlined in the amended Waste Management Acts 1996 to 2011 (change introduced by the European Communities (Waste Directive) Regulations 2011).

Recommendation:

Delete the activities listed in “Part I Schedule of Activities Licensed” and replace with the following:

***Licensed Waste Disposal Activities, in accordance with the Third Schedule
Of the Waste Management Acts 1996 to 2011***

- D1** Deposit into or on to land (e.g. including landfill, etc.).
- D5** Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.).
- D13** Blending or mixing prior to submission to any of the operations numbered D 1 to D 12 (if there is no other D code appropriate, this can include preliminary operations prior to disposal including pre-processing such as, amongst others, sorting, crushing, compacting, pelletising, drying, shredding, conditioning or separating prior to submission to any of the operations numbered D1 to D12).
- D15** Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

***Licensed Waste Recovery Activities, in accordance with the Fourth Schedule
Of the Waste Management Acts 1996 to 2011***

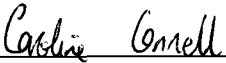
- R4** Recycling/reclamation of metals and metal compounds.
- R5** Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
- R13** Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

Overall Recommendation

It is recommended that the Board of the Agency grant a revised licence to the Licensee.

- (i) for the reasons outlined in the Proposed Decision,
- (ii) subject to the conditions and reasons for same in the Proposed Decision, and
- (iii) subject to the amendments proposed in this report.

Signed:



Caroline Connell

Inspector

Environmental Licensing Programme

Office of Climate, Licensing and Resource Use