

**KTK LANDFILL LTD.
BROWNSTOWN AND CARNALWAY,
KILCULLEN, CO. KILDARE.**

NON HAZARDOUS WASTE LANDFILL

Waste Licence Register 81-2

**APPLICATION FOR A
WASTE LICENCE REVIEW**

NON TECHNICAL SUMMARY

**Prepared By:
Environment & Resource Management Ltd.
No. 3 Tara Court,
Naas, Co. Kildare.**

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KTK Landfill Ltd.

Non Hazardous Waste Landfill

Brownstown & Carnalway, Kilcullen, Co. Kildare

**Application for a Review of
Waste Licence No. 81-2**

NON TECHNICAL SUMMARY

PREAMBLE

Environment & Resource Management Ltd. (ERML), acting on behalf of its client KTK Landfill Ltd. issued a letter to the Environmental Protection Agency ('the Agency' or EPA) on 20 July 2004, requesting advice in relation to a review of their Waste Licence and the information required by the Agency for such a review. The three-fold objectives of the review were articulated in the letter.

The Agency responded to the letter on 30 August 2004. They firstly acknowledged the request for a review in relation to the three stated objectives and then stated, "*.....a full review application is not required in this instance and the revised review procedure (as allowed for under Article 12(3)(a) of the Waste Management (Licensing) Regulations, 2004) will apply in this case*". The letter continues to list the information required in order that the review may be processed by the Agency. This information is contained in the report, appendices and accompanying drawings that follow.

**1. GROUNDS FOR THE APPLICATION FOR THE REVIEW OF
WASTE LICENCE REGISTER NUMBER 81-2**

The grounds on which this Application for review is being made were outlined in the ERML letter of 20 July 2004 and are summarised as follows:

**1.1 Grounds No. 1 – A Re-Designation of an Inert Waste Disposal
Area, to a Commercial & Industrial Waste Area**

The licensee wishes to dispose of non-hazardous Commercial and Industrial (C&I) wastes in an area previously identified in 1998 for the deposition of inert materials. The Agency in its letter of 14 July 2004 (Reference 81-2/AK031DM) acknowledges that the filling and restoration of this area is consistent with the planning permission and EIS submitted.

1.2 Grounds No. 2 - A Reorganisation of Landfill Support Infrastructure

The licensee wishes to relocate some of the infrastructure to other appropriate locations within the current boundaries of the licensed facility.

1.3 Grounds No. 3 – Amendments to the Restoration Plan

The licensee wishes to ensure that the post waste settlement landform has the minimum slopes and gradients that are recommended in the EPA's Landfill Manual on *Landfill Restoration and Aftercare*. The licensee proposes to place an additional surcharge of 1 metre (on average) of compacted waste and to fill the site so that the overall maximum level and general form of the post settlement restored surface that were presented in the April 1998 EIS and in the review application documents submitted to the EPA in July 2001 will be produced.

2. ARTICLES 5, 6 & 7 COMPLIANCE REQUIREMENTS

In accordance with Article 5, 6 and 7, the appropriate site and newspaper notices have been posted.

3. ARTICLE 9 COMPLIANCE REQUIREMENTS

In accordance with Article 9, written notice of the application for a review of the Waste Licence was given to Kildare County Council.

4. ARTICLE 12(1)(a) COMPLIANCE REQUIREMENTS

Full details of the applicant have been provided in this Waste Licence Review Application.

5. ARTICLE 12(4) COMPLIANCE REQUIREMENTS

The information to accompany the Application, as specified in Article 12(4) of the Waste Management (Licensing) Regulations, 2004 has been provided as follows:

- Newspaper Notice;
- Text of Site Notice;
- Copy of Notice to Planning Authority;
- Site Plans, Location of Site Notice, Points of Emissions and Points of Monitoring;
- Fee for Waste Licence Review.

6. SCALED DRAWINGS

Scaled Drawings showing the amendments to the design, layout and operation of the facility have been provided in Appendix 5.

7. PROPOSED CHANGE FROM INERT FILL TO C&I WASTES, TO FILL THE VOID LOCATED SOUTH OF PHASE 1

The original Waste Licence Application in 1998 (WL 81-1) proposed restoring the area now occupied by facility services infrastructure (south of the Phase 1 Development) with inert materials upon completion of landfilling in the rest of the site. The licensee now proposes to restore this area by developing an engineered cell (including lining, leachate and gas collection systems) and filling it with non-hazardous construction & demolition and commercial & industrial wastes in compliance with the waste acceptance procedures already agreed with the Agency for this landfill site. This proposal does not increase the annual waste intake to the site.

To form the engineered landfill cell, all of the infrastructure currently in the Services Platform (i.e. hardstand, wheel wash, weighbridges, offices, the concrete structure used as a waste quarantine bay, the Biocycle waste water treatment plant, silt settling tank, oil separator, the underground services and ducting) must be relocated and/or decommissioned.

Earthworks will be carried out to form roads, hardstands and a lined cell for the receipt of wastes that will be required for restoration of the area of the existing Services Platform.

As with all previous phases of development, a composite lining system comprising a minimum of 1 metre of compacted clay/silt till with a maximum co-efficient of permeability of 1×10^{-9} m/second and a 2 mm thick HDPE geomembrane is proposed.

The side slope lining system will comprise a composite system placed on battered side slopes.

The proposed leachate management system (which will be similar to that constructed in the rest of Phase 1 and in other phases) will be a 0.5 m thick drainage stone blanket, with a co-efficient of permeability greater than 1×10^{-3} m/sec, with the leachate freely flowing in the drainage blanket towards the pumped sumps at either end of the cell.

The proposed method of monitoring leachate levels at the base of the landfill will be pressure transducers installed within the drainage layer. The pressure transducers will be connected to a data logger, which will provide real time data to the on-site management team.

The overall master plan for Gas Management at the facility is one that includes enclosed flares and a gas utilisation plant to convert the landfill gas to electricity via 3 No. gas engines. A system of wells and piping have been installed at the facility. As filling is carried out, the wells and piping will be replaced and extended, in order to cover the entire landfill area.

An environmental assessment of the potential effects on the environment due to the proposed change from inert materials to C&I wastes to fill the void located south of Phase 1 are discussed in this review application under the following headings:

- Potential Emissions;
- Mitigation Measures;
- Potential Impacts.

Once the proposed mitigation measures are adhered to, the potential emissions comprising dust, litter, noise, leachate and surface water should not have a significant effect on the surrounding environment.

8. REARRANGEMENT OF SERVICES INFRASTRUCTURE

To allow restoration of the area south of the existing Phase 1 landfill development area, new infrastructure, roads and hardstanding will be/have been provided to replace/enhance the infrastructure/hardstanding currently located in the existing service platform. Specifically, the licensee will provide all the infrastructure detailed pursuant to the present Waste Licence conditions.

After all of the required infrastructure is in place, it is proposed to decommission the infrastructure in the existing services platform.

An environmental assessment of the potential effects on the environment due to the rearrangement of services infrastructure levels are discussed in this review application under the following headings:

- Potential Emissions;
- Mitigation Measures;
- Potential Impacts.

Once the proposed mitigation measures are implemented, the potential emissions from dust, litter, noise, leachate and surface water should not have a significant effect on the surrounding environment.

9. UPDATED PLAN FOR THE RESTORATION OF THE FACILITY

An updated plan for filling and restoring the site has been prepared by the licensee and its consultants. This plan takes into account the nature of

the wastes being landfilled on the site and some extensive research over the last two years into waste settlement and densification.

It is proposed to place commercial and industrial (C&I) wastes on this site to the required levels to ensure that the final settled surface meets the requirements of the Agency and also to resemble levels originally proposed in 1998. It is proposed to place C&I waste from the present until the end of October 2008 to form a domed hill. Interim capping materials circa 0.5 m thick will be placed during this period on the edges and flanks of the domed hill, as areas are brought up to proposed levels.

The licensee proposes to fill, cap and restore the facility to have a final profile similar to the contours shown on Drawing KTK/2008. This plan has been developed in conjunction with Martin Murray Architects to provide a natural landscape feature that would blend into the surrounding countryside. The initial maximum height of 151 mOD and the overall surface will reduce in time as the wastes below settle. The predicted post settlement final levels are shown on Drawing KTK/2009. Consistent with the planning permission, the maximum level shown is at 145 mOD.

The final capping will comprise the following or similar from the finished surface down:

- a) Topsoil (150 -300 mm thick);
- b) Subsoil, such that the thickness of subsoil and topsoil is at least 1 metre;
- c) A geocomposite sheet that comprises a geosynthetic top drainage layer, geosynthetic clay liner and a geosynthetic gas drainage layer.

Associated with the capping works will be the installation of perimeter drainage systems to take clean run-off from the restored landfill surface. The perimeter drainage systems will be a shallow swale, formed in the restoration layers that would be lined with a geotextile and graded stone to avoid erosion. The outlet for such perimeter swales will be directly to soak holes or to surface water management ponds on the landfill surface, which will drain to soak holes or the wet grassland that is located within the buffer zone that lies to the south of the main area of landfill development.

9.1 Landscaping Plan

A modified three-stage landscaping plan is presented in this Waste Licence Review:

- Stage I - Ongoing Landscaping Works During Operations (2005 to October 2008);
- Stage II - Site Restoration from October 2008 to End of Year 2011;

- Stage III Ongoing Maintenance Landscaping Beyond Year 2012.

In accordance with EPA requirements, an aftercare period is being planned to ensure environmental pollution is controlled and that there are no significant risks to the environment. The details of the aftercare management plan will be agreed with the EPA.

10. ANTICIPATED CHANGES IN ANNUAL WASTE INPUTS AND CAPACITY OF THE SITE

10.1 Waste Types and Quantities

No anticipated changes in Annual Waste Inputs for the broad classes allowed under the current licence are expected, as a result of the acceptance of this Waste Licence Review.

10.2 The Void of the New Fill Area

The post waste settlement capacity of the proposed new lined area is calculated to be 160,000 m³.

10.3 The Amended Total Void for the Facility

The post settlement capacity of the facility including the new lined area is 2.6 million m³.

11. IMPACTS & PROPOSED CHANGES TO EXISTING WASTE LICENCE CONDITIONS

The Waste Licence Conditions expected to be affected by the Waste Licence Review, justification for the proposed changes to the existing conditions and the proposed changes to the conditions of the licence which are required in order to be consistent and facilitate the proposed amendments to the facility, are presented in Table 11.1 of Section 11 of the main report.

12. RELATION OF AMENDED WASTE INPUT TO REGIONAL WASTE MANAGEMENT PLAN

The proposed new lined area will assist with the objectives of the Kildare and Dublin Waste Plans, by providing a facility for recovery C&D wastes and providing disposal facility for residual wastes that is designed, constructed, operated, monitored and managed in accordance with the Directive on the Landfill of Waste.

13. MATTERS RELATING TO SECTION 40(4) OF THE WASTE MANAGEMENT ACT 1996

Matters relating to Section 40(4) of the Waste Management Act 1996 are addressed under the following subject headings as part of this Waste Licence Review, namely:

- Emissions from the Disposal Activities;
- Environmental Pollution;
- EU Landfill Directive on the Landfill of Waste (1999/31/EC);
- BAT and Prevention of Facility Emissions;
- Consistency with the Objectives of the Waste Plan;
- Fit and Proper Person;
- Requirements Under Section 53 of Waste Management Act, 1996 – Financial Provisions Regarding Waste Recovery and Disposal;
- Energy Use;
- Noise;
- Accidents;
- Restoration and Aftercare.

14. PLANNING STATUS OF SITE

Planning Permission (Reference No. 98/608) included restoring the site to surrounding ground contours by depositing imported dry waste materials from construction and demolition sites, road and pipeline projects and commercial/industrial premises, within an engineered facility on a 25 ha site. As part of this development, the Services Platform is to be decommissioned and restored to a sloping surface. In order to restore this area, the services infrastructure must be relocated to temporary positions until it is removed from the site in accordance with Condition 18 of the Planning Permission.

Decommissioning of the services platform, restoration, aftercare and maintenance of the site were addressed in the original EIS submitted with the planning application in April 1998.

At the permitted filling rates and anticipated rates of waste settlement, there is not sufficient time within the limits imposed by Condition 3 of the planning permission, to restore the landfill to the agreed final levels and achieve appropriate post-settlement conditions for long-term stability of the engineered capping system. A separate planning application will be lodged to provide additional time to bridge this gap between the planning condition in question and the standards required under the Waste Licence.

A second Planning Permission has been granted (Reference No. 04/861), which allows the development of a gas utilisation plant at the north side of the site. This proposed plant has been the subject of technical submissions to the Agency and has received Agency approval.

15. EIS REQUIREMENT

As there is no intention to change the nature and annual quantity of waste input into the site and as the intention of the Restoration Plan is to create a landform that will after settlement of the wastes be similar in form to that shown on the drawings submitted with the April 1998 Planning Application and the September 1998 Waste Licence Application, there is no need for an EIS.

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