

Landfill Site: Velvetstown
Site Reference: 16/W
Division: North Cork
Area Office: Charleville

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Introduction

The European Court of Justice ruled on the 26th April 2005 that Ireland was non compliant with the Waste Framework Directive (75/442/EEC) between 1977 and 1997.

A proper and sufficient permitting system for private and local authority landfills had not been in place for the above years in accordance with the Directive.

The EPA prepared the “Code of Practice Environmental Risk Assessment for Unregulated Waste Disposal Sites” in response to the ECJ ruling.

The code came into effect in April 2007 and provided Local Authorities with guidance on:

- The Identification of Unregulated Landfill Sites
- Risk Screening & Prioritisation (Tier I)
- Site Investigations & Verification (Tier II)
- Quantitative Risk Assessment (Tier III)
- Remediation Techniques
- Reporting Requirements

The Code of Practice Environmental Risk Assessment for Unregulated Waste Disposal Sites

The Code of Practice Environmental Risk Assessment for Unregulated Waste Disposal Sites required All Local Authorities to

1. Identify all landfills within functional area (including public & private).
2. Place all sites on a register in accordance with section 22 of the Waste Management Act (WMA).
3. Carry out risk assessments on each site in accordance with COP.
4. Carry out a quantitative risk assessment on all Medium and High risk sites
5. Prepare remediation plans in line with risk assessments.
6. Apply to EPA to certify these sites in accordance with SI 524 of 2008
7. Provide verification reports showing successful outcome of remediation works.

Circular WPRR: 09/08

- Circular WPRR: 09/08 along with S.I. 524 of 2008 were issued on the 22nd December 2008 and required that all Category 1 Landfills (LA operated landfills) be identified and placed on the EPA section 22 register by the 30th June 2009.
 - This has been completed by Cork County Council.
- All Tier I Investigations were also required to be completed by 31st December 2009.
 - Cork County Council has completed this task and placed the findings on the EPA Section 22 register.

Site Description

Velvetstown Landfill is situated 2 Km north of Buttevant and is bordering the national primary route the N20. The site is approximately 0.40 ha in size and was originally used as a quarry.

The Landfill began operating in the late 1960s and is believed to have ceased operations in 1979/1980. The maximum site depth was found to be 4m. Municipal waste was mainly disposed of at this site. A yellow bare scrub now covers the site and a heap of C&D and Tarmac waste is situated on the northern end of the site.

Tier I Study

Cork County Council completed a Tier I study on the landfill at Velvetstown in December 2007 in accordance with the “Code of Practice Environmental Risk Assessment for Unregulated Waste Disposal Sites (COP)” published by the Environment Protection Agency (EPA).

The Assessment concluded that the site was a Class B – Moderate Risk site, due to the potential for leachate migration to the Regionally Important Aquifer. As a result a Tier II Assessment was required.

Tier II Assessment – Cork County Council

1. In March 2010, the Council in conjunction with the NRA commenced the Tier II Assessment. The National Road Authority is participating in the investigation as there is a proposal to construct a motorway between Cork and Limerick. As part of the construction process the Council were requested to identify any landfills along the proposed route. This consisted of an Exploratory Phase Investigation and an ensuing Detailed Phase Investigation.
2. The Exploratory Phase included:-
 - a) A trial pitting and slit trenching programme to determine the lateral and vertical extent of the fill, the nature of the waste and to establish the nature of the underlying subsoil;
3. The Detailed Phase included:-
 - a) The collection and analysis of samples of the waste for waste characterisation; collection and chemical analysis of surface water, leachate and soil samples and collection and geotechnical testing of soil samples.
4. The report found that:
 - The site was underlain by up to 3m of waste material. This was then covered by a clay cover material which varied in depth between 0.3 and 0.5m. Brown firm clay was found beneath the waste material, this was up to 2.2m in thickness.
 - The waste found in the Landfill was classified as being inert. The Velvetstown landfill is thought to be in the late Stage V of the biodegradation process. The impact the Landfill is having on groundwater is minute. No Landfill gas or Leachate was detected.

Tier III Assessment – Cork County Council

1. The Tier III Assessment involves the review of the Conceptual Site Model (COP) put forward in the Tier I investigation as well as the findings of the Tier II Assessment.
2. The risk posed was found to be a Moderate Risk (Class B) and therefore a Quantitative Risk Assessment (QRA) was required. A Quantitative Risk Assessment is required should the risk be deemed to intrinsically pose a high or moderate risk to the environment or human health. It uses an efficient and progressive approach to identify the risks with the aim of establishing a pollutant linkage from a source (S) via a pathway (P) to a receptor (R). Should a pathway not exist there is no risk.
3. The only identified Source- Pathway–Receptor risk was for leachate discharge to the bedrock aquifer. The presence of a clay layer beneath the waste and the groundwater monitoring results suggest that this pathway is curtailed.

QRA Conclusions & Recommendations

1. The risk rating should be amended and changed to Low Risk (Class C). The existing clay cover should be re-worked to improve compaction and minimise the infiltration of rainfall through the waste body. This would reduce the permeability of the clay layer.
2. An appropriate assessment of the SAC located within 1 Km of the landfill be undertaken by the fitting personnel to see if the landfill poses a risk to the site.