Attachment-4-7-4-National BAT - Waste Sector Landfill Activities

The Drehid Waste Management Facility (Current IE Licence Reg. No. W0201-03) is designed and operated in accordance with the EPA's *Final Draft BAT Guidance Note on Best Available Techniques for the Waste Sector: Landfill Activities* published in December 2011.

Introduction:

The existing waste management infrastructure comprises a MSW waste landfill and a biowaste composting facility, as well as a leachate storage and landfill gas treatment compound located adjacent to Phase 9 of the existing landfill. The proposed additional landfill infrastructure and additional composting capacity will utilise the existing similar infrastructure already in place and operational at the facility. In addition, the new MSW processing and Composting facility will be contained within an extension to the existing compost building to maximise infrastructure and utility efficiency.

A selection of the measures employed at the Drehid WFM in accordance with this BAT Guidance Note are:

Control Techniques:

Techniques for Prevention and Minimisation of Resource Consumption

- Energy consumption is monitored at the facility and an Energy Efficiency Management Plan is in place;
- Actively seeking opportunities to buy and install energy-efficient equipment at the facility;
- All machinery and equipment will be regularly maintained and switched off when not in use, where possible;
- Landfill gas from the existing MSW Landfill is utilised to generate electricity – the proposed additional Landfill capacity will also be connected to this plant.

Raw Materials

- Output from the compost facility is utilised as day cover in the MSW Landfill, reducing the need to import engineering materials for this specific purpose.

Techniques for the prevention and minimisation of emissions:

Design Criteria

- The design of the landfill infrastructure is in accordance with the EPA Landfill Design Manual (Site Design).

Prevention of Emissions to Groundwater

- Groundwater monitoring wells are in place at the facility; and
- Landfill capping, liners, leachate management and surface water drainage networks are engineered to manage the movement of both contaminated and uncontaminated materials on the site. The design prevents the release of potential contaminants into groundwater.

Minimisation of Leachate Emissions:

- Landfill techniques, including minimising the active working face, are in place to minimise leachate generation;
- Daily and intermediate cover practices also minimise leachate generation;
- Adequate leachate storage facilities of raw leachate prior to removal from site; and
- Diversion and collection of uncontaminated storm water for discharge or appropriate use from lined areas awaiting waste placement.

Minimisation of (Potentially Contaminated) Storm Water Emissions:

- Appropriate capping, appropriately designed surface water collection systems and separation of process/non-process areas;
- Surface water monitoring;
- Settlement lagoons;
- Cut-off valves;
- Use of SCADA system;
- Use of appropriate restoration profiles; and
- Suitable landfill restoration and aftercare plans.

Management of Landfill Gas Emissions

- Minimise landfill gas production potential by pre-treating the waste prior to acceptance for landfilling;
- Prevent landfill gas from migrating through the ground in both gaseous and dissolved states and prevent emissions of methane to the atmosphere;
- Manage odour risks/nuisance;
- Prevent condensate build-up in gas collection network;
- Use of horizontal and vertical gas collection pipework in the waste body;
- Carry out regular balancing of gas wells;
- Collect all landfill gas and, where feasible, utilise it to produce energy;

- Where energy generation from landfill gas is not possible, landfill gas is burned in an enclosed flare; and
- Regularly monitor and balance gas extraction wells.

Minimisation of Dust Emissions

- Prompt compaction after discharge from the vehicle delivering the waste, followed by covering with suitable material (natural or artificial cover materials) to sufficient depth;
- Provision of spray equipment around active tipping area if dusty waste is a regular problem;
- Use of paved site roads; and
- Regular sweeping of surfaced site roads.

Odour Control

- Minimisation of open tipping face area;
- Prompt replacement, compaction and covering of wastes;
- Provision of landfill gas collection and management infrastructure prior to waste emplacement;
- Restriction of loads known to be particularly odorous and immediate burial of odorous wastes;
- Restrict tipping activities during periods of adverse weather conditions;
- Upgrading and sealing of sump covers;
- Monitoring and regular balancing of gas extraction wells;
- Use of horizontal and vertical gas extraction wells;
- Use of horizontal gas collection pipe work in active cell; and
- Use of appropriate materials for daily, interim and final cover/capping.

Minimisation of Litter, Noise, Birds, etc

- Use of a sheltered face in windy conditions;
- Use of cover materials;
- Strategically placed mobile catch fences and permanent catch fences;
- Provision of perimeter planting/ landscaping to reduce wind impacts;
- Selection of equipment that conforms to EU Noise Standards;
- Use buildings to contain inherently noisy fixed plant and equipment;
- Prediction of noise impact at specified noise sensitive locations, using standardised sound power levels for construction plant;
- Daily litter picking/nuisance inspections;
- Limiting activities with noise potential to certain hours;
- Assessment of severity of noise impact on residential areas due to a new development;

- Occasional flying birds of prey over the site; and
- Using pest-control specialists to control vermin levels.