

NATIONAL BAT COMPLIANCE

The following sections describe how the inert soil waste recovery facility at Halverstown complies with the relevant requirements of BAT. In the absence of any specific BAT guidance in respect of the proposed waste recovery activity, it is considered that BAT for this sector is best addressed by the guidance given in the Agency's *BAT Guidance Note for Waste Sector : Landfill Activities (December 2011)*, and specifically guidance presented therein in respect of inert waste landfills.

Environment impacts associated with waste recovery activities could include

- (i) Potential dust emissions arising from unloading, placement and compaction of imported topsoil, soil and stone and trafficking of HGV's over unpaved haul roads;
- (ii) Potential carbon dioxide (CO₂) emissions from plant and equipment working at the facility;
- (iii) Potential noise emissions / noise nuisance associated with working plant and HGVs;
- (iv) Potential contaminant emissions to land, surface waters and groundwater, specifically from placement of non-inert waste and spills / leaks of fuel and oil;
- (v) Potential nuisance associated with transport of mud onto the regional road network;
- (vi) Inadequate planning and financial provision for potential environmental liabilities, closure, restoration and aftercare of the proposed facility;
- (vii) Poor environmental management and control of waste activities at the facility;

The waste materials imported to, managed and recovered at the Halverstown waste recovery facility are inert (physically, chemically and biologically unreactive) and will not alter or adversely affect any other matter in contact with it in a way which would give rise to environmental pollution or harm human health. As such, the waste will not generate leachate, landfill gas or odour emissions, nor will it give rise to litter nuisance or attract vermin or birds, which would also create further potential nuisance.

It is considered that each of the potential impacts of the facility can be addressed through the application of the following best available techniques to minimise emissions or to manage / control them.

Air (Dust) Emissions

A number of measures are in place to minimise and manage air (principally fugitive dust) emissions at Halverstown. The following BAT measures in respect of potential dust generation activities are implemented at the waste recovery facility in order to minimise and control dust emissions:

All Activities

- Use of mobile water bowsers to damp down particulate materials across the entire site, as and when required, principally in windy periods during extended dry spells.

Soil Placement and Backfilling

- Damp down particulate materials as and when required;
- Restrict access to areas once they are backfilled / restored;
- Avoid soil handling during adverse (dry, windy) weather conditions and optimising timing of any site operations and/or development works;
- Place and compact imported soil in-situ immediately after being unloaded (to minimise windblown particulate matter);
- Minimise drop heights at all times (to minimise emissions);

Stockpiling

- Minimise stockpiling of imported soils;
- Use water sprays on soil stockpiles when necessary;
- Site stockpiles to take advantage of shelter from wind;
- Minimise stockpile mound heights at all times (to minimise emissions);

Traffic Movements

- Require traffic to adhere to defined haul routes within the recovery facility;
- Regularly maintain unpaved road sections by grading hardcore to minimise particulate matter generation;
- Maximise length of travel over paved road sections within the facility;
- Maximise separation distances between internal haul roads and sensitive receptors;
- Implement and enforce speed controls on all paved and unpaved roads;
- Direct traffic through wheel cleaning equipment wherever practicable;
- Use road sweepers on paved road sections as and when required;

Monitoring

- Undertake dust deposition monitoring close to sensitive receptors around the perimeter of the recovery facility and undertake reviews of ambient emissions at regular intervals to determine the effectiveness of dust management and control systems.

The *BAT Guidance Note for the Waste Sector : Landfill Activities (2011)* and the *Environmental Management Guidelines for the Extractive Industry (2005)*, both published by the EPA, indicate that a total dust deposition limit of 350mg/m²/day measured close to sensitive receptors / at site boundaries is appropriate for waste recovery activity (and adjoining concrete production activities).

Air (CO₂) Emissions

The backfilling and restoration of the former pit at Halverstown will, for the most part, entail use of conventional diesel powered HGV trucks and earthmoving equipment (mechanical excavators and/or bulldozers). There is only minor scope to increase the efficiency of HGV's, plant and earthworking equipment and to reduce emissions arising from their use and deployment at the recovery facility.

The following BAT measures are / will be implemented in order increase efficiency and to limit, abate and/or reduce carbon dioxide emissions generated by HGVs and plant at the waste recovery facility:

- Ensure all vehicles, plant and equipment based at the facility are regularly serviced and maintained and operating efficiently;
- Replace plant and/or vehicles at the end of their operational life;
- Ensure plant and equipment are switched off when not in use;
- Minimise, insofar as possible, vehicle movements across the facility
- Review opportunities to increase the proportion of sustainable biofuel used by HGVs travelling to and from the facility, and incentivising its use wherever practicable.

Noise Emissions

The following BAT measures in respect of potential noise generation activities are implemented at the waste recovery facility in order to minimise and control noise emissions:

Facility Layout / Design

- Retain any perimeter banks or vegetation around the property boundary to provide acoustic as well as visual screening;
- Ensure plant and equipment at the facility work below original ground level within the existing pit inasmuch as possible in order that former pit faces can be used to provide additional acoustic screening;

Management and Working Practices

- Ensure noise generating activities within the facility are undertaken in locations where noise attenuation would minimise the potential noise related impact at nearby noise-sensitive properties;
- Ensure that, wherever possible, internal haul roads are routed so as to maximise the separation distances to nearby noise-sensitive properties;
- Ensure all haul roads are kept clean and maintained in a good state of repair (i.e. any potholes would be filled and large bumps removed, to avoid unwanted rattle and “body-slap” from heavy goods vehicles);
- Ensure heavy goods vehicles entering and leaving the site have tailgates securely fastened;
- Ensure all mobile plant and equipment used at the facility have noise emission levels that comply with the limiting levels defined in EC Directive 86/662/EEC and any subsequent amendments;
- Ensure plant is operated in a proper manner with respect to minimising noise emissions (e.g. minimisation of drop heights, no unnecessary revving of engines, plant used intermittently not left idling);
- Ensure all plant is subject to regular maintenance (i.e. all moving parts kept well lubricated, all cutting edges kept sharpened, the integrity of silencers and acoustic hoods maintained);
- Ensure all plant and equipment at the facility is fitted with effective exhaust silencers which are maintained in good working order to meet manufacturers’ noise rating levels. Defective silencers to be replaced immediately.

Monitoring

- Undertake noise monitoring close to sensitive receptors around the perimeter of the recovery facility and undertake reviews of emissions at regular intervals to determine the effectiveness of noise management and control systems.

The *Guidance Note for Noise in Relation to Scheduled Activities (2007)* and the *Environmental Management Guidelines for the Extractive Industry (2006)*, both published by the EPA, indicate that a rated noise emission limit of 55dB(A) L_{Ar} during daytime working hours and 45dB(A) L_{Ar} during night-time hours is appropriate for the waste recovery facility. Available baseline noise monitoring surveys and noise analyses in respect of future waste recovery activity at Halverstown indicates that there will be no exceedance of these threshold values.

Emissions to Land / Water

The waste recovery facility at Halverstown is located in within the River Barrow catchment, located in the South Eastern River Basin District. The closest surface water courses to the facility is located approximately 1.5km to the south, and these essentially form the headwaters of a small stream.

There are no surface water courses at the application site or immediately adjacent to it. Rainfall across the recovery facility at Halverstown percolates down through existing soil on the pit floor to

recharge the underlying groundwater table. There is no discharge of surface water from the site to any surface water course. Any storm runoff from the placed inert material infiltrates naturally to the ground.

The application site is located above the Usk gravel aquifer which is classified as a Locally Important Sand / Gravel aquifer. The underlying bedrock is classified as a Poor Aquifer (PU). It is likely that any groundwater in the gravel is in continuity with the underlying bedrock aquifer, although this is likely to be limited to the upper, weathered zone of the bedrock. The locally important gravel aquifer has been identified as a sensitive receptor in the receiving environment.

Groundwater vulnerability mapping indicates that groundwater vulnerability beneath the recovery site is classified as High (H), with some unsaturated sand and gravel (>3m) overlying the groundwater table.

Groundwater level data obtained around the application site indicates that groundwater flows out of the site to both the north and south as the site is located at a topographic high point. Groundwater quality results from the wells at the facility indicate that the groundwater is generally of good quality, with levels generally below the relevant groundwater quality threshold values, albeit there is some slight impact, most likely from agricultural activity in the surrounding local area.

Although the waste streams imported to the soil waste recovery facility at Halverstown are inert and expected to be free from contamination, there is a minor risk that the recovery activities could result in contaminant emissions to land and groundwater, specifically from placement of non-inert waste, the presence of suspended solids in surface water run-off and spills / leaks of fuel and oil. The following BAT measures are implemented at the facility in order to minimise uncontrolled release of polluting materials or liquids / liquors to land, surface waters and groundwater:

Land

- Establish waste acceptance procedures and management systems to identify the source of imported waste materials in advance and to confirm that they are inert;
- Implement a multi-level soil testing regime for imported waste materials, comprising characterisation testing, compliance testing and on-site verification;
- Ensure that any imported waste which is suspected to be non-inert is transferred to the waste inspection and quarantine area (a covered shed constructed over a concrete slab) and held there pending receipt of test results;
- Remove any quarantined materials that prove to be non-inert off-site, for disposal or recovery at an authorised waste facility.

Water

- Ensure all fuels, oils, lubricants and other potentially hazardous chemicals held at the facility are stored in
 - (a) large tanks surrounded by protective concrete barriers / containment bunds in order to eliminate the potential for mobile plant to collide or impact with them;
 - (b) smaller drums or intermediate bulk containers (IBCs) on bunded pallets surrounded by protective barriers;
 - (c) double skinned containers and/or mobile bowsers.
- Undertake regular visual inspection and testing of the integrity of tanks, drums, bunded pallets and double skinned containers;
- Divert all domestic wastewater from the staff welfare facilities via existing septic tanks and wastewater treatment facilities prior to discharging effluent to ground;

- Ensure all vehicle re-fuelling is undertaken on sealed hardstand areas adjacent to the fuel storage tank (or from a mobile double skinned fuel bowser);
- Maintain and test the integrity of drainage infrastructure, including drainage pipework and the hydrocarbon interceptor at regular intervals ;
- Undertake maintenance of plant and machinery over paved surfaces (or off-site, if appropriate);
- Ensure all plant is regularly maintained and inspected daily for leaks of fuel, lubricating oil or other contaminating liquids / liquors
- Ensure spill kits (with containment booms and absorbent materials) are available on-site to contain / stop the migration of any accidental spillages, should they occur;
- Establish a traffic management system at the facility to reduce conflicts between vehicles, and the potential risk of collisions and associated fuel spills or oil leaks;
- Establish and enforce speed limits across the facility to further reduce the likelihood and significance of collisions;

Monitoring

- Continue regular monitoring of groundwater quality (at 3 No. existing groundwater wells);
- Undertake ongoing reviews of emissions at regular intervals to determine the effectiveness of water management systems.

It is expected that by implementing these measures, emissions to surface water will meet the quality threshold values for key indicator parameters (BOD, suspended solids, total ammonia, total nitrogen and total phosphorous set by the *BAT Guidance Note for Waste Sector : Landfill Activities (2011)* and/or the waste licence (or any review thereof).

Environmental Liabilities

Operation of the proposed waste recovery facility could give rise to both known and potentially unknown future liabilities, principally in respect of land and/or groundwater and also, to a lesser extent, to atmosphere. Some potential liabilities could also arise in respect of the future closure, restoration and aftercare of the facility. Failure to make adequate financial provision for these liabilities could give rise to adverse impacts on the environment.

In order to identify and quantify these prospective liabilities, a Closure, Restoration and Aftercare Management Plan (CRAMP) and Environmental Liabilities Risk Assessment (ELRA) will be prepared in due course. The amount of financial provision required in respect of unexpected facility closure or site remediation following significantly adverse environmental incident will be agreed with the EPA as required on foot of any future risk assessment.

Transport of Mud onto Roads

The intensification of backfilling and restoration activities at the former pit at Halverstown will result in additional traffic movements of HGV's over areas of unpaved ground within the waste recovery facility and as such, in unfavourable weather conditions, could result in mud being carried off-site and onto the public road network, giving rise to potential health and safety risks to other road users.

The following BAT measures are implemented in order to limit, abate and/or minimise deposition of mud on public roads by HGV's and other vehicles exiting the waste recovery facility.

- Direct all traffic exiting the facility through the existing wheelwash facility and over paved internal roads thereafter out to the public road network;
- Regularly clean and maintain the wheelwash facility;

- Use a road sweeper to clean local public roads as and when required
- Maximise travel over paved road sections within the facility;
- Regularly inspect and maintain any unpaved road sections within the facility so as to minimise potential accumulation of mud on wheels of HGV lorries.

Environmental Management Systems

Kilsaran Ltd. currently implements its Environmental Management System (EMS) in respect of waste recovery and concrete production activities at Halverstown. The EMS is subject to ongoing review and development and Kilsaran will update the existing EMS as required in due course to incorporate any additional mitigation measures and management procedures which may be necessary to

- (i) mitigate specific impacts and emissions arising from the intensification of waste recovery activities and
- (ii) further implement best practice environmental management and control measures for waste recovery activities.

The existing environmental monitoring programme at Halverstown will continue in force for the duration of the backfilling and recovery operations. Emission limit values for the backfilling and recovery activity are generally consistent with those set by previous and/or existing planning permissions and/or environmental permits.

The environmental management measures and BAT techniques outlined above will be reviewed and revised in light of conditions attaching to any waste licence issued by the EPA in respect of waste recovery activities at Halverstown.

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