

Licence Review Application No. – LA010323

NON-TECHNICAL SUMMARY

Submission By: Miltown Composting Systems Ltd.
Miltownmore,
Fethard,
Co. Tipperary

Submission To: Environmental Protection Agency.
Office of Climate Licensing & Resource Use,
PO Box 3000,
Johnstown Castle Estate,
Co. Wexford

A INTRODUCTION

A.1. General

This document summarises the information included in the application to the Environmental Protection Agency (EPA) for the review of Licence Ref. W0270-02.

B FACILITY OVERVIEW

B.1. Ownership & Location of Facility

The Milltown Composting Systems Ltd. (Milltown) in-vessel composting facility at Milltown More, Fethard, County Tipperary operates under an Environmental Protection Agency (EPA) Waste Licence (Ref. W0270-02) issued on the 13th of September 2019. The facility also has approval from the Department of Agriculture Food and the Marine (DAFM) to operate as a composting plant accepting Category 2 and Category 3 animal by-products.

The facility originally began operations in 2004 under a Waste Permit (Ref. WP 019 02) issued by South Tipperary County Council. The predominant materials accepted was organic fines material from the treatment of mixed municipal solid waste, with smaller amounts of non-hazardous industrial and municipal wastewater sludges, and off specification animal feed. The actual amount processed on site is dependent on market conditions and fluctuates to meet market demand. Increased source segregation for commercial activities has increased the volume of organic bio-waste and organic fines material requiring biological processing in the Southern Waste Management Region. To meet the market demand for the requirements for increased biological treatment, Milltown proposes to increase its capacity to a maximum of 75,000 tonnes/year and to increase the maturation capacity by reconstructing two old agricultural sheds as maturation sheds.

C PROPOSED LICENCE REVIEW

Milltown Composting Systems Ltd. is applying to the Environmental Protection Agency (EPA) for the review of their existing Waste License (W0270-02). Milltown proposes to increase its capacity from the current limit of 50,000 tonnes per annum to a maximum of 75,000 tonnes/year and to include the reconstruction of two former agricultural sheds as maturation sheds (Sheds 2B and 3B).

The proposed development will continue to operate as an aerobic composting plant with the capacity to accept and process a broad range of compostable organic materials including source segregated household kitchen waste; catering wastes; non-hazardous industrial and municipal wastewater sludges and organic fines generated in the physical treatment of mixed municipal waste (MMW). The proposal is to increase the tonnage throughput in the plant from 50,000 tonnes per annum to up to 75,000 tonnes per annum. Due to the relatively short time period that the organic material spends in the composting bays during the process phase in Shed 1 and the waste reception shed it is considered that the existing process facility bays will be capable of processing the increased throughput. However, the capacity to mature the material following processing will require an increase in maturation area at the facility. As part of the proposed development it is proposed that two reconstructed agricultural sheds to the west of the existing reception shed (i.e., maturation sheds 2B and 3B) occupying a floor area of 3,560m² would be used for extended maturation capacity for sheds 2 and 3 to allow for the proposed increase in throughput. The site office, canteen/changing room and the container used to store lubricating/hydraulic oil and the power washer will remain in the same location as present. The existing biofilters south of Shed 1 and north of shed 3 will not change but

there is a proposed third biofilter that would treat extracted air from maturation sheds 2B and 3B from the maturation of organic material. That biofilter would be located to the south of maturation shed 2B.

All rainwater from the roofs of the proposed new sheds will be directed to the on-site Integrated Constructed Wetland (ICW) for treatment and polishing prior to discharge from the site. The sections of the existing licence (W0270-02) to be reviewed are outlined in Table 1.

Table 1: Proposed Licence Conditions for Review

Condition/Schedule	Current	Proposed Change
Introduction	Miltown Composting Systems Limited operate an in-vessel composting facility in Fethard, County Tipperary. This licence is for the acceptance of 50,000 tonnes of organic fines material from the treatment of mixed municipal solid waste, with smaller amounts of non-hazardous industrial and municipal wastewater sludges	Miltown Composting Systems Limited operate an in-vessel composting facility in Fethard, County Tipperary. This licence is for the acceptance of 75,000 tonnes of organic material including brown bin , organic fines material from the treatment of mixed municipal solid waste, with smaller amounts of non-hazardous industrial and municipal wastewater sludges
Schedule A.2 (Table A.2)	Maximum (Tonnes Per Calendar Year) – 50,000	Maximum (Tonnes Per Calendar Year) – 75,000
Schedule B.1.1	Emission Limit Values for Biofilters Emission Point Reference No. – A2-1 Biofilter Location E615717, N633439 Emission Point Reference No. – A2-2 Biofilter Location To be Agreed by Agency	Emission Limit Values for Biofilters Emission Point Reference No. – A2-1 Biofilter Location E615717, N633439 Emission Point Reference No. – A2-2 Biofilter Location E615787, N633520 Emission Point Reference No. – A2-3 Biofilter Location To be Agreed by Agency
Schedule C.1.1	Control of Emissions to Air – Emission Point Reference No: A 2-1 (E615717, N633439) (Biofilter 1 to the South of Shed 1) A 2-2 (to be agreed by the Agency) (Biofilter 2, to the north of Shed 2)	Control of Emissions to Air – Emission Point Reference No: A 2-1 (E615717, N633439) (Biofilter 1 to the South of Shed 1) A 2-2 (E615787, N633520) (Biofilter 2, to the north of Shed 2) A 2-3 (to be agreed by the Agency) (Biofilter 3, to the south of maturation Shed 3B)
Schedule C.1.1	Monitoring of Emissions to Air Emission Point Reference No: A2-1, A2-2	Monitoring of Emissions to Air Emission Point Reference No: A2-1, A2-2, A2-3

The review of the licence will result in the facility continuing to operate under the Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013. Miltown are proposing to increase the daily throughput of the facility to approximately 240 tonnes per day, up to a maximum of 75,000 tonnes per year, which would exceed the 75 tonnes per day threshold under article 11.4(b) of the European Union (Industrial Emissions) Regulations 2013 (S.I., 138 of 2013) whereby the facility would require to continue to operate under an Industrial Emissions (IE) licence. According to the First Schedule to EPA Act 1992 as amended the facility falls under the following;

11.4 (b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001(S.I. No. 254 of 2001) apply:

- (i) biological treatment

(ii) pre-treatment of waste for incineration or co-incineration

The activity does not come under the EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations (S.I. No. 74 of 2006) and a derogation under Section 86A(6) is not being sought for the facility.

C.1. Planning Authority

The planning authority for the site is Tipperary County Council. A planning application was submitted to Tipperary County Council for the proposed increase in tonnage throughput at the facility and the reconstruction of agricultural sheds as maturation sheds. In accordance with Schedule 5 of the Planning Regulations 2001 an Environmental Impact Assessment Report (EIAR) was prepared as part of the planning application to Tipperary County Council (Planning Ref. 2260121) and this EIAR is included with the licence review application. The planning documents for the for increased throughput at the facility and the reconstruction of the agricultural sheds as maturation sheds are attached with the review application.

C.2. EIAR SUMMARY

An Environmental Impact Assessment Report (EIAR) is submitted as part of the application and a summary of the likely significant effects and mitigation measures are outlined below.

Environmental Factor	Likely Effects Identified	Brief Description of Effect	Mitigation Measures Proposed to Control Effects
Surface Water	Runoff from Process Area to Surface water Receptors	Organic impacts on Surface water emissions from the site	<p>As part of the existing development, a Containment Tank (47.54 m³) was installed as part of the leachate recirculation system at the southwest corner of Shed 1. This tank is used for the storage and recirculation of potentially contaminated surface water runoff from the ramped intake area and the reception building floor to ensure that any surface water runoff is directed in a controlled manner to the on-site contaminated water/leachate recirculation system. The impacted water is used as part of the composting process (dampening the pre-composting bays in Shed 1).</p> <p>As part of the leachate/impacted surface water collection system, collected water is directed initially to a pump sump tank located south of the amendment storage area. Depending on the volume of liquid directed to the pump sump tank through the leachate collection system the collected liquid is manually pumped from the pump/sump tank back up to the filtration system in the pump house for re-circulation to the pre-composting bays. For large volumes of liquid release (i.e., large spill or fire water) automatic pumping will take place to pump any possible initial firewater or major spillage liquid back up the consigned contaminated water storage tank. This pump/sump tank has a high level liquid alarm which sends a text to the site managers and operators in the event of a problem.</p>

			<p>The provision of an impermeable surface for the existing turntable area for vehicles delivering organic material to the facility. This also includes the appropriate management of potentially contaminated surface water runoff from this area, which is directed to the dedicated contaminant/recirculation system.</p> <p>To manage any possible spillage risk on the turntable area Miltown have updated their Waste Acceptance Procedure (SOP MC01), the Cleaning and Hygiene Procedure (SOP MC 03) and the site Emergency Response Procedure. These SOPs ensure that the turntable area is inspected after every delivery for spillage and if in the event of a minor spillage that a spill kit including a suitable absorbent material will be at hand in order to undertake a clean-up if required, meeting Industrial Emissions License conditions.</p> <p>A 0.7m high kerb exists around the base of the compost reception building connecting the kerbing to the eastern end of the south wall of the pump house and the south wall of Shed 1, thereby allowing the use of this area within the compost reception building footprint for firewater retention and also ensuring that any possible spillage is directed into the leachate collection system via the pump house drainage.</p> <p>All non-impacted surface water at the existing compost facility is diverted to the oil/water interceptor and released from there to the surface water drain and to the Integrated Constructed Wetlands (ICW) located in the southwest corner of the site. The ICW ponds provide biological treatment of stormwater prior to discharge from the site.</p> <p>The existing ICW has the capacity to receive storm water from the roofs of the proposed maturation sheds (i.e., 2B and 3B) for treatment prior to discharge.</p> <p>The provision of an impermeable surface for the maturation sheds 2B and 3B floor and ramped or sloped access door for vehicles collecting matured organic material for transfer off site. This will provide appropriate management of potentially contaminated surface water runoff from this area, which will be held inside the buildings and, if required, will be collected and added to the dedicated contaminant/recirculation system in the adjacent reception shed.</p> <p>The exit door for the proposed maturation sheds 2B and 3B will be ramped or sloped back towards the shed interior. This will ensure that there can be no migration of floor liquid from the building to the exterior yard.</p> <p>All surface water from the concrete surfaces at the entrance, and other external areas around the new proposed maturation sheds (i.e., 2B and 3B) will be directed to a</p>
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			dedicated full retention oil water separator prior to discharge to the ICW system.
Noise	Nuisance Impacts on Noise sensitive Receptors	Noise from traffic or site operations impacting on local residents	<p>The traffic assessment, as outlined in Chapter 12 of the EIAR indicated that there will be an increase of eight truck movements which will be spread over the whole day to ensure that the noise impacts are spread over the day to ensure a minimal effect on the noise sensitive receptors surrounding the Miltown facility</p> <p>Any new fans and motors for air input to the maturation bays in sheds 2B and 3B would be situated within the fabric of the building to mitigate potential noise from the fan/motor operations. Metal cladded walls in both sheds has the capacity to reduce noise migration from the fans located within the building by up to 24dB.</p> <p>Although it is not anticipated that the operation of the air intake fans inside buildings 2B and 3B will result in noise nuisance from the site, the fans will be fitted with an automation system whereby, if required, fan speeds can be reduced (particularly at night) to reduce potential noise impacts on sensitive receptors in the area. This would be implemented as part of the construction phase of the new maturation sheds.</p> <p>Any air extraction fans installed at maturation sheds 2B and 3B for the removal and treatment of exhausted air within the building will be located at the south of the shed close to the proposed new biofilter. Although it is not anticipated that the operation of the air extraction fans at the south of Building 2B will result in noise nuisance from the site, the fans will be fitted with an automation system whereby, if required, fan speeds can be reduced (particularly at night) to reduce potential noise impacts on sensitive receptors in the area.</p> <p>All machinery at the Miltown facility will have frequent maintenance carried out to ensure that the machinery is operating optimally and not emitting at a high noise output.</p> <p>With the increased levels of traffic owing to the increase of throughput at the facility, Miltown will ensure that no queuing of incoming lorries will occur on the local access road to prevent the noise emitted from the lorries effecting noise sensitive receptors in the vicinity</p> <p>Miltown will ensure that there are no deliveries or transfer of material off site occurring outside of the operational hours of the facility</p> <p>It will be advised by Miltown that the trucks arriving and leaving the facility avoid using air brakes to reduce the potential noise emitted from their movements</p>

			During operational activities occurring at the facility, all doors will be closed to ensure that no unnecessary noise emissions occur
Air	Odour Impacts on Sensitive Receptors	Odour from site operations impacting on local residents	<p>The results for air monitoring completed between 2018 and 2021 indicated that the existing composting facility does not have a negative impact in terms of odour or air emissions associated with the composting process (i.e., ammonia, H₂S or mercaptans). The proposed new maturation sheds 2B and 3B would be designed and built with air input for the maturation process and with an air extraction and treatment system that would be exhausted through a dedicated biofilter system. In order to meet the requirements of the current 'Draft BAT Conclusions Specific to Indoor Composting for Vessel or Enclosed Building Design'- air extraction should be designed and maintained to move and handle the volume of air to provide a clear working environment. It is intended to aspirate the proposed maturation sheds 2B and 3B at a maximum of 2.5 air changes per hour, this will require the additional air to be treated in the biofilter as calculated in Table 10-12 in section 10.4.2. of the EIAR.</p> <p>It is proposed to utilize the existing air management system to continue to collect and treat air from the existing process sheds. Based on the sampling results the residence time for treatment in the biofilters is adequate to appropriately treat the exhausted air from the sheds. The motor on the fans are fitted with variable speed controllers to control the air volume extracted from the buildings.</p> <p>The odour management plan for the site will be reviewed to ensure that odours are minimised, including;</p> <ul style="list-style-type: none"> • Control of waste input characteristics (e.g. C: N ratio, particle size) - This is controlled by the addition of wood chips to the material; • Control of moisture content; • Control of air diffusion through the organic material – through the automatic control system; • Control of temperature – through the automatic control system; • The control or aeration of material to ensure that anaerobic conditions do not take place in composting bays or in maturing static piles.

C.3. BAT Conclusions

The proposed development will continue to operate in such a way as to minimise environmental impacts as far as practicable. The operation of the facility will be carried out in accordance with good practice and Best Available Techniques (BAT) guidelines. This review has taken into account the Best

Available Technology (BAT) Guidance Notes issued by the EPA “Final Draft BAT Guidance Note on Best Available Techniques for the Waste Sector: Waste Transfer and Materials Recovery”, 2011. A listing of the BAT notes reviewed and deemed applicable to the proposed development as part of the operational requirements as an Industrial Emissions facility are provided in Attachment 1.

D FACILITY OPERATIONS & POTENTIAL ENVIRONMENTAL IMPACTS

D.1. Facility Operations

The composting facility is an in-vessel system that can accept a broad range of compostable materials including source segregated household kitchen waste; catering wastes; non-hazardous industrial and municipal waste water sludges and organic fines generated in the treatment of mixed municipal solid waste (MSW).

The treatment process, depending on the nature of the source material, can involve blending with bulking agents, composting in separate process bays, maturation in windrows and post treatment to remove impurities. Due to the modular lay-out, the tunnels/bays can be operated independently, which provides flexibility in treating the different organic waste streams. The finished product can, depending on quality, be used for horticultural and agricultural purposes, or as landfill cover.

D.1.1. Composting Operations

The current facility is an aerobic composting plant that accepts a broad range of compostable materials including source segregated household kitchen waste; catering wastes; non-hazardous industrial and municipal waste water sludges and organic fines generated in the treatment of mixed municipal solid waste (MSW). The treatment process, depending on the nature of the source material, can involve initial screening to remove contaminants, blending with bulking agents, composting in separate enclosed bays, maturation in windrows and post treatment to remove impurities. Due to the modular lay-out, the composting tunnels/bays can be operated independently, which provides flexibility in treating the different organic waste streams. The finished product can, depending on quality, either be used for horticultural and agricultural purposes, or as landfill cover.

The waste feedstock material is received in the reception shed (ca. 700m²) located immediately to the west of Shed 1, which occupies an approximate area of 1,700 square meters (m²). Maturation is carried out in sheds to the east of shed 1. The site office is a porta cabin located at the north-west corner of Shed 1 and a small canteen/changing room is located to the south west of Shed 1. A bunded area on the northern area of the reception building is used to store diesel, lubricating/hydraulic oil and the power washer. The covered yard to the east of Shed 1 and the reception building to the west of Shed 1 are paved with impermeable concrete. The biofilter is located on the southern side of Shed 1.

The materials are transferred from the reception area to the vessels using the telescopic loaders. The material placed in each of the vessels is assigned an individual batch number to allow performance monitoring during the treatment stages and ensure the maintenance of accurate records. Five (5 No.) temperature probes are placed within the waste mass before sheeting is placed over the top of the vessel. There is a computerised process control system, located in the site office, which records the temperature in each vessel to ensure that optimum composting conditions are maintained. In addition to the constant temperature monitoring, oxygen levels are monitored using a hand held probe. The moisture level is assessed either visually or using a hand held moisture meter. In order to comply with the Animal By-Products Regulations a ‘two barriers’ system is operated in the MSW/kitchen/catering

waste processing area. The objective is to ensure a maximum particle size of 400mm and achieve a sustained temperature of 60°C over two separate 48 hour periods (the MSW fines as delivered typically have a particle size less than 40 – 50 mm). Large items are manually removed and reused back in the process as bulking agents for future compost batches.

Maintaining the temperature at 60°C for the two separate time periods is done by composting the same batch in two different bay vessels. In the first vessel, or Barrier 1, the process usually takes one week. When completed, the material is removed to a second Vessel-Barrier 2-where it is thoroughly mixed and again composted until the temperature requirements are met. To avoid cross contamination different loaders and buckets are used to move the materials into and out of the vessels.

When the material has completed the thermophilic stage it is removed from the Vessel Barrier 2 and transferred to the Sheds to the east where it is formed into windrows for maturation. The windrows are formed using the telescopic loader and are turned as required using either the specialized turner or the loader. Temperature, oxygen and moisture content are regularly monitored and the turning regime amended as required to ensure optimum conditions. The mesophilic stage can take up to 6 weeks. When complete the compost may, depending on the nature of the source material, be screened to remove oversized contaminants. These are stored on-site in Shed 3 pending consignment to off-site disposal/treatment facilities.

In order to increase visibility within Shed 1 and treat odorous air, an air extraction fan removes air from the building and channels it into the woodchip biofilter located to the south of the building. The biofilter consists of a large concrete box, in which a thick layer of coarse shredded wood chips is placed, with a manifold and a system of air ducts on the bottom to ensure an even distribution of air. The biofilter is visually monitored by the operator on duty. This includes a check on the moisture content, pH, airflow and temperature. The moisture content is the single most important parameter for the efficient microbial activity. For a typical natural biofilter media (e.g. wood chips plus peat) the moisture content should be maintained in the range of 40 to 60 percent. Water is applied to the filter as required to ensure optimum efficiency. Every 5-6 years, part of the biofilter material (wood chips) are replaced by fresh material, in order to maintain the odour removal efficiency of the filter. Since bio-filtration is a microbiological process, a sudden mechanical breakdown or failure of a complete biofilter is unlikely to happen. However, in the unlikely event a failure of the biofilter, or during the regular replacement of biofilter media, no process air will be directed to the biofilter.

Six people are currently employed full time at the facility and three are employed part time comprising of managers and operatives. The current operational hours at the facility are 06:00 to 18:00 Monday to Saturday.

The main inputs to the process include diesel for the operation of on-site machines, electricity for lighting and operation of the aeration and air abatement system (i.e., approximately 895 MWh per year) and some supplemental water used to maintain optimum moisture levels in the composting bays (i.e., approximately 20m³ per year).

Proposed Changes

Miltown propose to increase the throughput of material at the composting facility to approximately 240 tonnes per day (not exceeding 75,000 tonnes per annum) and to apply to the Environmental Protection Agency for a review of their Industrial Emissions Licence. The future licenced area will be

the same as the current waste licence (Ref. W0270-02) for the site but with the 2 additional maturation sheds 2B and 3B included. The reception area for organic material is a building located west of Shed 1 where delivery trucks back in and deposit their loads. The reception building provides additional control over potential impacts to surface water quality from runoff from the deposited feedstock material and allows for diversion of surface water from the facility buildings roofs and outside yard surface to the dedicated surface water drainage system and also provides a control for leachate runoff inside the reception building whereby it is directed to a closed re-circulation system. Any leachate or minor surface water discharge in the reception area will be directed to the collection sump and pumped back to the process bays for reuse as part of the re-circulation.

The range of waste materials currently accepted at the composting facility will not change. The site will continue to only accept biological waste material for treatment and it is envisaged that future operation of the facility will serve to accept increased volumes of these organic materials from waste collectors. The bio wastes (e.g., food waste and screened organic fines material) will continue to be delivered to site in enclosed trailers for aerobic composting and stabilisation. The increased compost processing throughput at the facility will allow the facility deal with a greater volume of bio-waste and increase the facility's capability to service the Southern Regions waste needs.

The current hours for accepting waste at the facility under the existing Industrial Emission Licence are between 07:00 and 19:00 Monday to Saturday (with the exception of Bank Holidays), with the current operational hours at the facility between 06:00 to 19:00 Monday to Saturday. This will not change as part of the proposed development.

D.1.2. Facility Emissions

As part of the review application a Baseline Assessment Screening was completed and based on the site activities and materials and products used on site a full Baseline Assessment was not considered necessary.

The main environmental emissions from the proposed facility will be similar in nature to the existing facility. The main emissions will be noise from the operation of the facility aeration fans and trucks delivering material to and from the facility, air emissions from the composting facility composting sheds and surface water emissions from the site building roofs and non-process related yard areas. All process related water/leachate will be recirculated through the process and will not be an emission from the facility. As part of the review application a site condition report was completed (see Attachment 4.8 of application). The results of the report found the following:

D.1.2.1 Groundwater

Milltown Composting perform annual groundwater monitoring at three groundwater monitoring wells (i.e., GW1, GW2 and GW3) to comply with their EPA Waste Licence. The following parameters are outlined in the facility's Waste Licence for sampling and analysis;

- pH
- Nitrate
- Total Ammonia
- Total Nitrogen
- Conductivity
- Chloride
- Organic Compounds

The groundwater sampling programme completed at the Miltown facility between 2019 and 2021 has indicated that the concentrations of all parameters in monitoring wells GW1, GW2 and GW3 were less than the ELVs for the site licence.

D.1.2.2 Sewer

There is no connection to a foul sewer mains system from the site and sanitary and sink wastewater from the site welfare facilities (i.e., toilets and canteen) is currently discharged to an on-site waste water treatment system and percolation area. No waste water from the compost process is discharged to the septic tank system. All waste water/leachate is recirculated back through the process via a holding tank located south of Shed 1.

D.1.2.3 Storm Water/Surface Water

Stormwater from the site building roofs and open yard surface water that has been treated in the on-site oil/water separator is directed to the onsite integrated construction wetland (ICW) before discharge to an open drainage ditch at the southwest corner of the site. The site lies within the catchment of the River Moyle, which is approximately 2 km to the southwest of the site. Stillimity Stream, a tributary of the Moyle, is located approximately 1 km southwest of the site and is the closest surface water course to the site discharge point from the ICW on the Miltown Composting site at SW1a. Another small stream called Milltown Beg is located approximately 350m northwest of the site boundary but is not hydraulically linked to the Milltown Composting site. As part of the proposed development, clean stormwater from the roofs of maturation sheds 2B and 3B will also be directed to the ICW system.

In February 2022 the condition and effectiveness of the ICW to treat surface water from the site was completed by VESI Environmental Ltd. The works included assessing the physical condition of the ponds and the capacity of the ICW to treat stormwater runoff based on surface water ammonia results either the discharge at SW1a or, if there was no discharge, samples from final treatment pond. A copy of the report completed by VESI on the ICW is provided in Attachment G.3.

The results for surface water sampling discharge at SW1a in 2021 (i.e., 95%ile ammonia concentration of 0.14 mg/l) and in samples collected from the final treatment pond in February 2022 indicated that the quality of surface water from the ICW system will not negatively impact surface water quality in the Moyle River catchment area.

The conclusion of the assessment was that the existing ICW has capacity to treat the incoming roof runoff both from the existing and from the proposed development (i.e., Sheds 2B and 3B). The ICW appears to be in good condition but does require some maintenance to be carried out (e.g., strimming vegetation on banks) to ensure function and performance is maintained. The conclusion also indicated that the ICW provides sustainable and effective management of surface waters from the site.

The River Moyle has experienced impacts in recent history which were caused mainly by diffuse agricultural, or point source pollution from waste water treatment plants, septic tanks and industry. In 2001 a report from the south eastern river basin district the river Moyle was found to have two locations that were found to be moderately polluted at times and seriously polluted at times. In 2002 the EPA published an interim report on the biological survey of river quality. This report included the

river Moyle and indicated biological Quality ratings at various monitoring locations on the river Moyle from 1981 to 2002.

To assess the potential for discharge from the ICW to impact the Moyle River, two surface water samples were collected immediately downgradient of the Miltown ICW discharge point SW1a in February 2022. Sample location M1 was from the surface water drain that receives water from SW1a and M3 was located in Stillimity Stream approximately 100 m upstream of the confluence with the Moyle River. The analysis results indicated that surface water in the drainage ditch and in the Stillimity Stream immediately downgradient from the surface water outlet from the ICW at the Miltown Site (i.e., SW1a) was of good quality. The COD concentrations were less than the Surface Water Guideline limit of 40 mg/l and BOD in surface water prior to flowing to the Moyle River (i.e., M3) was less than the 2009 Surface Water Regulation limit of 2.6 mg/l. Ammonia concentrations were also less than the limit of 0.14 mg/l outlined in the 2009 Surface Water Regulation. The sampling results from the surface drain and Stillimity Stream located downgradient of SW1a indicated that concentrations of parameters that would indicate potential nutrient impacts on the receiving Moyle River were less than the Regulatory Limits and indicated that discharged surface water from the Miltown ICW at SW1a would not have any impact on water quality in the Moyle River.

The assessments completed as part of the EIA indicated that the mitigation measures in place at the existing composting site are effective at treating surface water runoff from the site through biological treatment in the ICW system. The conclusion of the ICW assessment completed in February 2022 was that the ICW also has the capacity to accept and treat storm water from the proposed development maturation sheds and as such the additional processing as part of the proposed development will not have a negative impact on surface water quality in the area. Milltown Composting is located at an elevated position in relation to the surface water bodies. Generally, there is a low risk of flooding at the site. This was checked on the Flood Maps Ireland website. The increase of waste to 240 tonnes per day but not exceeding 75,000 tonnes per annum will have a negligible impact on surface waters due to the improved mitigation measures at the site as part of previous developments at the site (i.e., covered waste reception building and closed re-circulation system for water from the reception building floor and reception ramp where the water is stored and used on the compost process bays in Shed 1).

Existing Mitigation Measures

- As part of the existing development, a containment tank (47.54 m³) was installed as part of the leachate recirculation system at the southwest corner of Shed 1. This tank is used for the storage and recirculation of potentially contaminated surface water runoff from the ramped intake area and the reception building floor to ensure that any surface water runoff is directed in a controlled manner to the on-site contaminated water/leachate recirculation system. The impacted water is used as part of the composting process (dampening the pre-composting bays in Shed 1).
- As part of the leachate/impacted surface water collection system, collected water is directed initially to a pump sump tank located south of the amendment storage area. Depending on the volume of liquid directed to the pump sump tank through the leachate collection system the collected liquid is manually pumped from the pump/sump tank back up to the filtration system in the pump house for re-circulation to the pre-composting bays. For large volumes of

liquid release (i.e., large spill or fire water) automatic pumping will take place to pump any possible initial firewater or major spillage liquid back up the consigned contaminated water storage tank. This pump/sump tank has a high level liquid alarm which sends a text to the site managers and operators in the event of a problem.

- The provision of an impermeable surface for the existing turn table area for vehicles delivering organic material to the facility. This also includes the appropriate management of potentially contaminated surface water runoff from this area, which is directed to the dedicated contaminant/recirculation system.
- To manage any possible spillage risk on the turntable area Miltown have updated their Waste Acceptance Procedure (SOP MC01), the Cleaning and Hygiene Procedure (SOP MC 03) and the site Emergency Response Procedure. These SOPs ensure that the turntable area is inspected after every delivery for spillage and if in the event of a minor spillage that a spill kit including a suitable absorbent material will be at hand in order to undertake a clean-up if required, meeting Industrial Emissions License conditions.
- A 0.7m high kerb exists around the base of the compost reception building connecting the kerbing to the eastern end of the south wall of the pump house and the south wall of Shed 1, thereby allowing the use of this area within the compost reception building footprint for firewater retention and also ensuring that any possible spillage is directed into the leachate collection system via the pump house drainage.
- All non-impacted surface water at the existing compost facility is diverted to the oil/water interceptor and released from there to the surface water drain and to the Integrated Constructed Wetlands (ICW) located in the southwest corner of the site. The ICW ponds provide biological treatment of stormwater prior to discharge from the site.

Proposed Mitigation Measures

- The existing ICW has the capacity to receive storm water from the roofs of the proposed maturation sheds (i.e., 2B and 3B) for treatment prior to discharge.
- The provision of an impermeable surface for the maturation sheds 2B and 3B floor and ramped or sloped access door for vehicles collecting matured organic material for transfer off site. This will provide appropriate management of potentially contaminated surface water runoff from this area, which will be held inside the buildings and, if required, will be collected and added to the dedicated contaminant/recirculation system in the adjacent reception shed.
- The exit door for the proposed maturation sheds 2B and 3B will be ramped or sloped back towards the shed interior. This will ensure that there can be no migration of floor liquid from the building to the exterior yard.
- All surface water from the concrete surfaces at the entrance, and other external areas around the new proposed maturation sheds (i.e., 2B and 3B) will be directed to a dedicated full retention oil water separator prior to discharge to the ICW system.

D.1.2.4 Soils & Groundwater

Groundwater is considered a receptor when it is being used or can be used for either public or private water supply and where it may potentially be having an impact, through hydraulic connectivity, on surface water receptors in the area. The groundwater assessment is divided into two groups: existing

and potential abstractions and potential impacts on surface water receptors in the area (i.e., River Moyle).

There is no municipal mains water supply in the Miltownmore area and is not in the vicinity of any Source Protection Areas. The Composting facility and private residences in the area obtain potable water from individual groundwater wells and a search on the Geological Survey of Ireland (GSI) public Spatial Resources Database identified eight (8) domestic wells within a 2.5km radius of the Miltown Composting Facility site. The wells identified are listed below.

Groundwater Wells on GSI Spatial Resources System within 2.5km of Miltown Composting

GSI Ref.	Townland	Well Type	Depth to Rock	Well Yield
2013SEW001	Colman – SE of Site	Domestic - BH	15m	Moderate
2013SEW024	Colman – SE of Site	Domestic - BH	No Depth Recorded	Poor
2013SEW002	Barretstown – NE of Site	Domestic - BH	18m	Moderate
2013SEW003	Barretstown – NE of Site	Domestic - BH	4m	Moderate
2013SEW006	Barretstown – NE of Site	Domestic - BH	2.5m	Moderate
2013SEW010	Tullamaine – N of Site	Domestic - Spring	No Depth Recorded	Good
2013SEW011	Fethard – N of Site	Domestic - BH	No Depth Recorded	Good
2013SEW012	Fethard – N of Site	Domestic - BH	4.9m	Good

To assess if there is any potential for impact on domestic borehole wells or surface water receptors in the area the groundwater Risk and ground waterbody WFD status was reviewed on the GSI online Groundwater Spatial Resource. The review indicated that the Groundwater Region reference at Miltownmore is IE_SE_G_040 and that the Groundwater Risk for IE_SE_G_040 is “Under Review”. Ground Waterbody WFD Status 2013-2018 for IE_SE_G_040 is “Good”, which would indicate that the groundwater is considered to be of good quality and not a significant source of impact to domestic users in the area or to surface water receptors in the area.

Historically there were some instances of elevated ammonia found in groundwater samples collected on site. The elevated ammonia concentrations may have been due to runoff from the exposed reception yard area that historically existed at the Miltown site. Because the yard area was uncovered there was some potential for runoff to ground surface and potential for ammonia impacts. However, in August 2015 planning permission was granted (Ref. 14600521) to construct a covered structure over the reception yard to mitigate against runoff from the facility and potential impacts on soils and groundwater. The shed, and the leachate recirculation system was constructed in 2016/2017 to provide mitigation against potential impacts to soil and groundwater from potential migration of leachate from the reception area.

The analysis results for ammonia in the three on-site wells since the site Licence Review in 2019 show that the mitigation measure put in place is effective as no sample result since 2019 has exceeded the drinking water limit for ammonia.

Additional groundwater sampling for ammonia concentrations in all three wells was also completed in January and February 2022 to assess the concentration of that parameter in groundwater at the site. The samples were analysed for ammonia because it was considered a potential contaminant of concern related to the composting of organic material. The results for ammonia sampling show that all samples analysed from the wells between 2020 and 2022 contained ammonia concentrations less than the groundwater protection and drinking water limits.

All areas of the existing composting facility and all areas of the proposed development are/will be concrete paved floors which are enclosed in sheds, this includes storage areas. The main threat to groundwater's is from leachate spills, leakages and contaminated surface water runoff. However, the proposed increase in throughput at Miltown will be completed within the process sheds where mitigation measures are in place to ensure the protection of groundwater. These are outlined below.

Existing Mitigation Measures

- As part of the compost site development a Containment Tank (47.54 m³) was installed as part of the recirculation system at the southwest corner of Shed 1. This tank is used for the storage and recirculation of potentially contaminated surface water runoff from the ramped intake area of the reception shed to ensure that any runoff is directed in a controlled manner to the on-site contaminated water/leachate recirculation system. The impacted water is used as part of the composting process (dampening the pre-composting bays in Shed 1).
- The on-site leachate collection system located in the reception shed area collects impacted water and directs it initially to a pump/sump tank located south of the amendment storage area, from where it is pumped to the recirculation tank for recirculation into the process.
- The provision of an impermeable surface at the turn table area for vehicles delivering organic material to the facility. This also includes the appropriate management of potentially contaminated surface water runoff from this area, which is directed to the dedicated contaminant/recirculation system.
- To manage any possible spillage risk on the turntable area Miltown will continue to operate their Waste Acceptance Procedure (SOP MC01), the Cleaning and Hygiene Procedure (SOP MC 03) and the site Emergency Response Procedure. The on-site SOPs will ensure that the turntable area is inspected after every delivery for spillage and if in the event of a minor spillage that a spill kit including a suitable absorbent material will be at hand in order to undertake a clean-up if required, meeting license condition
- A kerb exists around the footprint of the reception building and connects to the eastern end of the south wall of the pump house and the south wall of Shed 1, thereby allowing the use of this area for the retention of any runoff and ensuring that any possible spillage is directed into the leachate collection system via the pump house drainage and not to soils surrounding the process building.
- As part of the leachate/impacted surface water collection system, collected water is directed initially to a pump sump tank located south of the amendment storage area. Depending on the volume of liquid directed to the pump sump tank through the leachate collection system the collected liquid is manually pumped from the pump/sump tank back up to the filtration system in the pump house for re-circulation to the pre-composting bays. For large volumes of liquid release (i.e., large spill or fire water) automatic pumping will take place to pump any possible initial firewater or major spillage liquid back up the consigned contaminated water storage tank. This pump/sump tank has a high level liquid alarm which sends a text to the site managers and operators in the event of a problem.
- All areas of the compost handling and processing facility are roofed and have impermeable concrete floors to reduce the potential for run off of impacted surface water to open ground, where it could potentially migrate to soils and the underlying aquifer.

- All potentially impacted surface water runoff at the reception building are collected and recirculated back into the process. No water from the reception area will be allowed to migrate from the building to surrounding soils.
- All non-impacted surface water from the existing site yard is diverted to the oil/water interceptor and released from there to the surface water drain and then to the Integrated Constructed Wetlands (ICW) onsite. All stormwater from the existing compost facility shed roofs (which is considered clean) is directed directly to the ICW. The ICW ponds provide treatment on the non-impacted water prior to discharge from site.

Proposed Additional Mitigation Measures

- The floor of the proposed maturation sheds 2B and 3B will consist of an impermeable concrete floor and will have a surrounding concrete wall. These features will contain any minor liquid migrating from the maturing organic material in the aerated static piles.
- The transfer of processed organic material from the end of shed 1 to the proposed maturation sheds 2B and 3B will take place using a front-end loader that will deposit the material over a low dividing wall between the reception shed and the proposed maturation shed. The provision of the low divider wall will allow for the division of the areas and no surface runoff from the reception area can enter maturation sheds 2B and 3B.
- The exit door for the proposed maturation sheds 2B and 3B will be ramped or sloped back towards the shed interior. This will ensure that there can be no migration of floor liquid from the building to the exterior yard.
- All non-impacted storm water from the proposed maturation sheds 2B and 3B roofs will be directed to the Integrated Constructed Wetlands (ICW) onsite. The ICW ponds provide treatment on the non-impacted water to ensure that there are no emissions from the facility.
- All surface water from the concrete surfaces at the entrance, and other external areas around the new proposed maturation sheds (i.e., 2B and 3B) will be directed to a dedicated full retention oil water separator prior to discharge to the ICW system as outlined in the drawing P-2A included in Attachment C.3 of the EIAR.

It is not considered that the existing facility operations are negatively impacting on the underlying site soils, geology or hydrogeology, the implementation of the existing mitigation measures are ensuring that potential for the migration of contaminants from the facility buildings into the underlying soils and geology are negligible. Similarly, the implementation of the mitigation measures related to the proposed maturation sheds 2B and 3B will ensure that potential impacts to soils, geology or hydrogeology are contained and controlled and remain negligible.

The proposed development includes measures to protect against any accidental discharges to ground (e.g., adequate containment measures for oil storage, control of any runoff from composting areas, use of hardstand in loading areas and drainage through oil interceptors). As such it is considered that the cumulative impact of the proposed development will be neutral and imperceptible in relation to soil and groundwater

D.1.2.5 Air Emissions

In order to meet the condition requirements of the site Waste Licence the Milltown Composting site completes the following monitoring at the facility to ensure that the operation is not impacting air quality in the area;

- Ammonia (NH₃)
- Hydrogen Sulphide (H₂S)
- Mercaptans
- Dust Deposition
- Particulate Matter (PM)
- Bioaerosols (Total Fungi/Bacteria and *Aspergillus fumigatus*)
- Amines (Ammonia Derivatives)

Miltown have odour control measures in place at the facility which consists of an air extraction and biofilter treatment system. The Miltown Composting biofilter is located to the south of Shed 1. Operational experience of the facility has found that it has not been necessary to continuously operate at maximum capacity, and an air change rate of 1 per hour has been effective in controlling odour emissions. To assess the effectiveness of the control system a monitoring programme is completed as required by Waste Licence W0270-02.

Concentrations of chemical species of interest are collected at the two Inlet pipes to the biofilter bed. To assess the efficiency of the biofilter system, a sample is also collected and analysed from the biofilter from the biofilter bed surface. The results of the air sampling program completed at the biofilter between 2011 and 2017 indicated that all air emission parameters (i.e., amines, H₂S, ammonia and mercaptans) from the facility were less than the applicable ELVs.

Dust monitoring was also completed on site at three locations as part of the site licence conditions using dust gauges conforming to the Standard Method VD12119. The results of dust deposition sampling completed at the site has indicated concentrations less than the ELV of 350 mg/m²/day for all monitoring locations between 2011 and 2021 except for one monitoring event in October 2011 when sample D3 was contaminated by bird droppings.

Proposed Additional Mitigation Measures

The results for air monitoring completed between 2018 and 2020 indicated that the existing composting facility does not have a negative impact in terms of odour or air emissions associated with the composting process (i.e., ammonia, H₂S or mercaptans). The proposed new maturation sheds 2B and 3B would be designed and built with air input for the maturation process and with an air extraction and treatment system that would be exhausted through a dedicated biofilter system. In order to meet the requirements of the current 'Draft BAT Conclusions Specific to Indoor Composting for Vessel or Enclosed Building Design' - air extraction should be designed and maintained to move and handle the volume of air to provide a clear working environment. It is intended to aspirate the proposed maturation sheds 2B and 3B at a maximum of 2.5 air changes per hour, this will require the additional air to be treated in the biofilter as calculated in Chapter 10 of the EIAR.

It is proposed to utilize the existing air management system to continue to collect and treat air from the existing process sheds. Based on the sampling results the residence time for treatment in the biofilters is adequate to appropriately treat the exhausted air from the sheds. The motor on the fans are fitted with variable speed controllers to control the air volume extracted from the buildings.

The odour management plan for the site will be reviewed to ensure that odours are minimised, including;

- Control of waste input characteristics (e.g. C: N ratio, particle size) - This is controlled by the addition of wood chips to the material;
- Control of moisture content;

- Control of air diffusion through the organic material – through the automatic control system;
- Control of temperature – through the automatic control system;
- The control or aeration of material to ensure that anaerobic conditions to not take place in composting bays or in maturing static piles.

D.1.2.6 Noise Emissions

Noise emission monitoring was completed at the Miltown facility as part of the existing site licence conditions. The monitoring concentrate mainly on NSL location which is the closest noise sensitive receptor to the facility located approximately 900m to the northwest. The results of the monitoring completed in 2020 and 2021 indicated the following:

Environmental Noise Results for NSL1 - 2020

2020 Daytime Noise Results						
Monitoring ID	Location Description	L _{Aeq}	L ₁₀	L ₉₀	L _{max}	ELV
NSL1 Daytime Monitoring Result 1	On entrance road into facility approximately 600m northwest of site buildings	55	43	36	84	55
NSL1 Daytime Monitoring Result 2	On entrance road into facility approximately 600m northwest of site buildings	52	45	36	81	55
NSL1 Daytime Monitoring Result 3	On entrance road into facility approximately 600m northwest of site buildings	44	41	35	69	55
2020 Evening- Time Noise Results						
Monitoring ID	Location Description	L _{Aeq}	L ₁₀	L ₉₀	L _{max}	ELV
NSL1 Evening Monitoring Result 1	On entrance road into facility approximately 600m northwest of site buildings	42	45	34	64	50
2020 Night- Time Noise Results						
Monitoring ID	Location Description	L _{Aeq}	L ₁₀	L ₉₀	L _{max}	ELV
NSL1 Night time Monitoring Result 1	On entrance road into facility approximately 600m northwest of site buildings	41	42	34	58	45
NSL1 Night time Monitoring Result 2	On entrance road into facility approximately 600m northwest of site buildings	37	40	34	46	45

Night-time monitoring was carried out at the site during the 2020 survey to assess baseline night-time noise levels at the noise sensitive locations although the site was not audible

Environmental Noise Results for NSL1 - 2021

2021 Daytime Noise Results						
Monitoring ID	Location Description	L _{Aeq}	L ₁₀	L ₉₀	L _{max}	ELV (L _{Aeq})
NSL1 Daytime Monitoring Result 1	On entrance road into facility approximately 600m northwest of site buildings	51	51	37	75	55
NSL1 Daytime Monitoring Result 2	On entrance road into facility approximately 600m northwest of site buildings	55	50	41	85	55
NSL1 Daytime Monitoring Result 3	On entrance road into facility approximately 600m northwest of site buildings	49	49	41	77	55

The results of broadband measurements completed at NSL1 in 2020 and 2021 and the broadband measurements completed at O'Donnells to the east of the site in February 2022 when the site had a throughput of 50,000 indicated the following;

- Daytime noise readings at NSL1 in 2020 ranged between 44 dB $L_{Aeq(30\text{ mins})}$ and 55 dB $L_{Aeq(30\text{ mins})}$ and noise readings at NSL1 in 2021 ranged between 49 dB $L_{Aeq(30\text{ mins})}$ and 55 dB $L_{Aeq(30\text{ mins})}$. All daytime measurements at NSL1 in 2020 and 2021 were less than the EPA licence limit of 55 dB L_{Aeq} .
- All L_{A90} readings for daytime measurements at NSL1 in 2020 and 2021 which is a measure of the prevailing noise climate (with one-off events like traffic removed) were less than 45dB and significantly less than the 55 dB L_{Aeq} limit.
- The evening noise reading at NSL1 in 2020 was 42 $L_{Aeq(30\text{ mins})}$ and was less than the 50 dB L_{Aeq} evening licence limit.
- Night-time noise readings at NSL1 in 2020 ranged between 37 dB $L_{Aeq(15\text{ mins})}$ and 41dB $L_{Aeq(15\text{ mins})}$ and were less than the 45 dB L_{Aeq} night-time licence limit .
- All L_{A90} readings for night-time measurements at NSL1 were less than 35 dB and were the significantly less than the 45 dB L_{Aeq} limit.
- No tonal noise was recorded from the facility during the day, evening and night-time readings in 2020 or 2021.
- Daytime noise readings completed at O'Donnells in February 2022, when aeration fans were operating at 100% capacity, was 44 dB L_{Aeq} and when the fan capacity was reduced to 30% the noise level reduced to 41 dB L_{Aeq} . and were significantly less than the limit of 55 dB L_{Aeq}
- The L_{A90} readings at O'Donnells in February 2022 (which is a measure of the prevailing noise climate with one-off events like traffic removed) were both 36dB and significantly less than the 55 dB L_{Aeq} limit and is also less than the night time limit of 45 dB L_{Aeq} .

Proposed Additional Mitigation Measures

The current operations are not considered to be having an impact on the surrounding area or on noise sensitive receptors. However, with an increased throughput at the Miltown facility the mitigation measures to ensure no noise pollution will be updated;

- According to the traffic assessment, as outlined in Chapter 12 of the EIAR, there will be an increase of approximately eight truck movements which will be spread over the whole day to ensure that the noise impacts are spread over the day to ensure a minimal effect on the noise sensitive receptors surrounding the Miltown facility
- Any new fans and motors for air input to the maturation bays in sheds 2B and 3B would be situated within the fabric of the building to mitigate potential noise from the fan/motor operations. Metal cladded walls in both sheds has the capacity to reduce noise migration from the fans located within the building by up to 24dB.
- Although it is not anticipated that the operation of the air intake fans inside buildings 2B and 3B will result in noise nuisance from the site, the fans will be fitted with an automation system whereby, if required, fan speeds can be reduced (particularly at night) to reduce potential noise impacts on sensitive receptors in the area.
- Any air extraction fans installed at maturation sheds 2B and 3B for the removal and treatment of exhausted air within the building will be located at the south of the shed close to the proposed new biofilter. Although it is not anticipated that the operation of the air extraction

fans at the south of Building 2B will result in noise nuisance from the site, the fans will be fitted with an automation system whereby, if required, fan speeds can be reduced (particularly at night) to reduce potential noise impacts on sensitive receptors in the area.

- All machinery at the Miltown facility will have frequent maintenance carried out to ensure that the machinery is operating optimally and not emitting at a high noise output.
- With the increased levels of traffic owing to the increase of throughput at the facility, Miltown will ensure that no queuing of incoming lorries will occur on the local access road to prevent the noise emitted from the lorries effecting noise sensitive receptors in the vicinity
- Miltown will ensure that there are no deliveries or transfer of material off site occurring outside of the operational hours of the facility
- It will be advised by Miltown that the trucks arriving and leaving the facility avoid using air brakes to reduce the potential noise emitted from their movements.
- During operational activities occurring at the facility, all doors will be closed to ensure that no unnecessary noise emissions occur

D.1.2.7 Traffic

The traffic assessment, outlined in Chapter 12 of the EIAR indicated that there will be an increase of eight truck movements (eight in and eight out) and eight small vehicle movements with the proposed development which will be spread over the whole day to ensure that the noise impacts to the closest noise sensitive receptors are spread over the day to ensure a minimal impact. Also, because the proposed facility will continue to be closed after 19.00 (i.e., does not accept or transport material during night time hours) any minor traffic impacts are isolated to daytime hours.

Prediction of Impact at Noise Sensitive Receptor

The draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics / Institute of Environmental Management and Assessment Working Party have been referenced in relation to the potential impact of changes in the ambient noise levels at NSL 1 for an increase in traffic related to the proposed development at Miltown.

The draft 'Guidelines for Noise Impact Assessment' impact scale adopted in this assessment is shown in Table C below. The corresponding significance of impact presented in the 'Advice Note on Current Practice (in the preparation of Environmental Impact Assessments) (2003)' is also presented.

Noise Impact Scale

Noise Level Change dB(A)	Subjective Response	Impact Guidelines for Noise Impact Assessment Significance	Impact Advice Note on Current Practice (in the preparation of E/As)
0	No change	None	Imperceptible
0.1 – 2.9	Barely perceptible	Minor	Slight
3.0 – 4.9	Noticeable	Moderate	Moderate
5.0 – 9.9	Up to a doubling or halving of loudness	Substantial	Significant
10.0 or more	More than a doubling or halving of loudness	Major	Profound

The criteria above reflect the key benchmarks that relate to human perception of sound. A change of 3 dB(A) is generally considered to be the smallest change in environmental noise that is perceptible to the human ear. A 10 dB(A) change in noise represents a doubling or halving of the noise level. The difference between the minimum perceptible change and the doubling or halving of the noise level is

split to provide greater definition to the assessment of changes in noise level. It is considered that the criteria specified in the above table provides a good indication as to the likely significance of changes on noise levels in this case and as such, they have been used to assess the impact of traffic noise on the closest noise sensitive receptor.

Due to the nature of the site and surrounding area the noise levels recorded at the receptor were used in the predicted noise assessment. On the basis of the NG4 Guidelines the area around the noise sensitive location NSL is designated as normal noise environment with a recommended daytime noise limit of $55L_{Aeq, T}$ dB(A).

The maximum increase in traffic associated with the proposed development is predicted to increase (based on worst case scenario) by 4 light vehicle movements and 8 HGV movements per day. Due to the low traffic volumes on the access laneway it is difficult to accurately predict noise impact. However, based on the Calculation of Road Traffic Noise (CRTN - ISBN 0 11 550847 3) it is predicted that the noise climate at the closest noise sensitive receptor would increase by approximately 1.5 dB related to the increase in traffic movements which is considered very minor. This barely perceptible increase would only be experienced during daytime operations and there would not be expected to be any increase during night time period because the site will be closed.

The inclusion of maturation sheds 2B and 3B as part of the extended maturation area for processed organic material would have some operations associated with it that could have potential noise impacts on noise sensitive receptors to the northwest of the site. The proposed extended maturation operation would require an additional 15 air intake fans (located inside the building structure) for the supply of air to the underfloor aeration bed system and would also require 2 air extraction fans for the removal of air from the building and directing it to the biofilter to the south of the proposed building.

The aeration fans for the delivery of air to the beds in the proposed maturation sheds 2B and 3B will be housed inside the building structure which will consist of a single skinned profiled metal clad wall and roof. A single skin construction has a relatively low mass and there will be relatively low noise absorption and the majority of the sound reduction will be due to sound reflection back into the building. Although the sound reduction index of a material varies over the noise spectrum, a typical 0.7mm single skin profile wall or roof would have a single figure rating (R_w) of 24 dB.

The predicted increase in noise levels at NSL1 and O'Donnells when fans related to the proposed development are operational would be less than 1dB which would be considered a negligible impact when compared to Table 7-4 of The Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Noise Impact Assessment, 2014, see above. The predicted results also indicate that the noise limits of 55dBA during daytime and 45dBA during night-time hours would not be exceeded as a result of the proposed development. In terms of noise associated with the operational phase of the proposed development the associated effect is expected to be negligible.

D.1.3. Waste

The facility is designed to produce a Class 1 or Class 2 compost and/or stabilised biowaste. Class 1 and Class 2 compost is not categorised as a waste and can be used for agricultural, horticultural, and gardening purposes. The stabilised biowaste is currently used as landfill cover and for other suitable engineering/restoration applications as may be approved by the Agency. The oversize materials recovered during the pre and post screening of the materials are stored on site and depending on their

nature may either be added to the bulking agents used in subsequent composting batches or sent off-site for disposal/recovery. Milltown Composting is investigating potential alternative recovery outlets for this material. The facility generates small volumes of wastes from the canteen and office and Milltown Composting operates a source segregation policy to maximise the recovery of potential recyclable and compostable materials from these waste streams.

The site does not produce significant waste materials but the process is monitored to ensure that waste production is minimised where possible. Wastes are produced from areas such as mobile plant on-site maintenance. Waste oils and batteries generated during maintenance are stored in the bunded area of the reception building pending removal off-site for disposal/recovery at appropriately permitted licensed treatment/recovery facilities. Materials are recovered or recycled where possible. The oil interceptor on the surface water drainage system will be routinely desludged and if no light liquid is visible on the surface of the oil interceptor the sludge is reused in the composting process. However, if light liquid is within 50 mm from the bottom of the coalescer filter the sludge is removed off-site by a licensed contractor for disposal at an appropriately licensed waste treatment/disposal facility.

Milltown Composting only uses appropriately licensed or permitted waste disposal/treatment facilities for all wastes generated at the facility. All wastes leaving the facility are weighed at the on-site weighbridge and Milltown Composting retains records of the waste types (EWC codes), volumes (tonnes) and the destination.

The existing waste licence for the Milltown facility has a maximum annual acceptable tonnage of 50,000 tonnes of organic waste that can be accepted and composted on site, the proposed increased tonnage to 75,000 will still consist of the same materials currently accepted for treatment at the facility. The materials and EWC codes to be accepted at the facility are included in section 4.3 of Licence Review Application.

E. PREVENTATIVE MEASURES

There are a number of existing and proposed preventative and control measures in place at the Milltown facility to be taken against potential pollution impacts from the facility. The main emissions from the facility that could impact the environment are considered to be surface water, air and noise.

E.1. Surface Water

In the event of an emergency (e.g., spillage) the surface water drainage system for the turntable where trucks reverse into the waste reception area have a diversion system in place to divert the surface water flow from that area to the leachate collection and circulation system. During normal operations surface water from that area is drained to a grated silt trap gulley which is then directed via a 150mm PVC pipework beneath the reception area to the existing silt trap and oil interceptor to the south of the reception building. Once the surface water passes through the interceptor it passes to the surface water ICW System. A diversion pipeline with a lockable valve has been installed at the access to the reception area so that in the event of a spillage at the turntable area, site personnel will be able to divert potentially contaminated surface water to the leachate collection system by changing the installed lockable valve from the leachate line to the storm water line.

The existing and proposed mitigation measures to protect surface water quality are outlined in section D.1.2.3 above.

E.2 Air

The existing material reception, compost processing and odour management system at Miltown (i.e., biofilters 1 and 2) is already designed to mitigate odours in ambient air removed from all existing Sheds at the composting facility (i.e., Sheds 1 to 4 and the reception shed). This would continue to be the case for the proposed development as processing and maturation of approximately 2/3 of composted material will continue to take place in those buildings. As part of the future operations at the facility, approximately 1/3 of composted material processed in Shed 1 would be transferred to the proposed new maturation sheds (i.e., maturation sheds 2B and 3B). To control any potential odours from this area it is proposed that a dedicated air extraction system and biofilter would be installed as part of the proposed maturation sheds development. The size of the proposed third biofilter is based on 2.5 air changes per hour within the maturation shed 2b (where forced air maturation of static piles would be completed) and maturation shed 3B (where material would be screened and stored for sampling and off-site transfer) to meet the minimum residence time within the biofilter media for extracted air. The calculated residence time for air in the biofilter is outlined in the Table below.

Biofilter 3 Proposed Size and Capacity and Exhaust Air Retention Time for Biofilter 3

Building Volume	Volume (m ³)	
Maturation Sheds 2B and 3B Volume		32,640
TOTAL		32,640
Air Volume to be Treated in Biofilter	2.5 x Air changes per hour in Maturation Shed 2B and 2 air changes per hour in Maturation Shed 3B	
		81,600
Air volume arriving at the biofilter	81,600	m ³ /hr
	22.67	m ³ /s
Biofilter surface area	485	m ²
Calculated Speed of Air through Filter	0.046735	m/s
Media Depth	1.90	m
Residence time in media	42.79	seconds

With the installation of the proposed air control and treatment system for maturation sheds 2B and 3B the impacts on air quality from the proposed development would be expected to continue to be low.

E.3 Noise

The current operations are not considered to be having an impact on the surrounding area or on noise sensitive receptors. However, with an increased throughput at the Miltown facility and the reconstruction of the old agricultural sheds as maturation sheds a number of controls and preventative measures will be put in place to ensure minimal noise nuisance at the site. The proposed measures are outlined in section D.1.2.6 above.

F. SITE OPERATION CESSATION

In the case of the Miltown Composting site in Miltownmore, Fethard there is no landfill or historical large heavy industrial activity on site, and no groundwater or soil contamination has been recorded on the site since commencement of operations. If the facility was to cease operations it would be considered that the controls currently in place on the site and the available monitoring data for the facility would demonstrate that there are no outstanding environmental issues associated with the

site and that a clean closure could be achieved. As such a Decommissioning and Materials Management Plan (DMP) is appropriate for the site.

Miltown Composting proposes to manage and execute the DMP using internal resources, supplemented as necessary and appropriately by external resources. All external resources used for decontamination, decommissioning, facility cleaning, waste disposal and transport will be fully approved and licensed as appropriate. A decommissioning management team will be assigned to manage and execute the entire project and key activities will be supervised by personnel with appropriate experience and expertise. Only qualified personnel will carry out decommission works. Options that will be used to manage the various residuals that will arise as follows;

Reuse

Any facility items that can be removed from the site for reuse at other or similar facilities will be and if not then they will be returned to the supplier where possible;

Recovery/Recycling

Any facility items that can be recovered or recycled will be sold to a third party or by agreeing transport costs with the third party;

Disposal

The final option, and last resort, will be to dispose of plant items as waste.

Wastes sent offsite for recovery, recycling or disposal will only be transported by appropriately permitted waste contractors and will be transported from the facility to the destination site in a manner that will not adversely affect the environment.

F.1 Decommission Programme

Once site closure is instigated the DMP will be activated. Site management will be responsible for ensuring an orderly cessation of production at the facility. The plan will be effectively carried out by following a specific sequence of activities. These activities will include.

- Termination of all relevant deliveries incoming deliveries to the facility
- Termination of all contracts other than those concerned with the DMP.
- Processing of all existing onsite waste materials until all onsite waste has been processed and removed from the facility.
- Return of materials to suppliers where possible, for resale or reuse
- Draining and cleaning of residue from oil tanks and cleaning and blanking of oil lines
- Removal of remaining raw materials
- Cleaning and decontamination of plant and equipment
- Cleaning decontamination and inspection of bunds, sumps and drainage system
- Isolation and disconnection of electrical supplies
- Maintenance of site drainage system and oil interceptors during decommissioning activities
- Secure archiving of all relevant documents including drawings, instrumentation diagrams, validation documentation, vendor manuals, project files, maintenance records, inspection records, material transfer records, waste disposal records
- Final structural decommissioning
- Provision of site security

F.2 Plant and Equipment Decontamination Requirements

An assessment of the level of contamination will be made for residues with waste, leachate and any liquid effluents. All contaminants will be removed drained or flushed from all relevant plant, tanks and pipelines and wash water containing residues of waste, leachate and other contaminants will be removed off site for recovery or disposal. All building structures, tanks, pipelines, plant and surfaces will be hosed down or flushed out with high pressure water to decontaminate them where necessary.

It is anticipated that any necessary decontamination of plant and equipment will be carried out on site. It will primarily involve cleaning in place and power washing of internal and external surfaces. Miltown Composting will seek approval from the EPA for any decontamination procedures and monitoring requirements to be employed. The interceptor and tanks will be emptied and cleaned by licensed contractors. A disposal route for all wash waters generated during decontamination will be agreed with the Agency prior to disposal.

F.3 Plant and Equipment Decommissioning Requirements

The composting processing equipment will be valued and sold, relocated or scrapped, depending on the most efficient and cost effective method. Decommission of the fixed plant will be carried out by external subcontractors. All liquids such as leachate etc. will be drained from the process pipework and tanks if required and the plant and equipment will be sold. Drained fluids and absorbent materials used during the plant/equipment decontamination/decommissioning will be disposed or recovered in an appropriate manner. Spare parts, spare equipment and mechanical tools and equipment will be valued and sold along with the main process equipment.

The interceptor will be emptied and cleaned by licensed contractors and the contents disposed of to a licensed site with the agreement of the Agency. The cleaning and disposal dockets will be kept for inspection.

F.4 Demolition

It is not foreseen that there will be any demolition undertaken as part of a closure. It is envisioned that the site buildings will be returned to agricultural sheds following the DMP being implemented at the site.

F.5 Raw Materials, Products and Waste disposal and or Recovery Requirements

General non-hazardous waste from the administration activities will be source separated and transported off site by a licensed waste contractor until all general waste has been removed off-site for recycling, recovery or disposal. Details of general waste sent off site during the decommissioning process will be recorded.

Removal of any remaining hazardous waste (e.g., leachate) will be completed by permitted/licensed subcontractors and delivered to an appropriately licensed recycling/disposal facility

All fuel and process tanks will be emptied, decontaminated and sold when the site is decommissioned. Unused chemicals, gas bottles or fire extinguishers will be returned to the suppliers. In advance of the closure, fuel stocks will be run down in advance of closure.

F.6 Contaminated Land treatment, removal and or disposal

Any areas of ground with visual contamination will be excavated directly for offsite treatment and risk assessments will be carried out to establish the most suitable method of remediation. Sampling and

analysis will also be completed to assess the lateral and vertical extent of any contaminated soils, if they are identified.

G. ENVIRONMENTAL EMISSIONS MONITORING

G.1 Monitoring

The intent would be to continue to complete the sampling and monitoring outlined in Schedule C of the existing site licence (Ref. W0270-02), subject to adjustment by the Agency if considered necessary. There would be a requirement to add and monitor a third biofilter for the air extracted from Shed 2B and 3B.

G.2 Measures To Comply With Environmental Quality Standards

The Miltown site will continue to operate under and review the site Environmental Management System (EMS) to identify and target areas of potential improvement to reduce environmental impacts as far as possible. The completion of on-going monitoring as required by the site licence and the operation of existing (e.g., leachate recirculation system and ICW for further treatment of surface water emissions) control measures will provide measures to allow the facility to comply with environmental quality standards.

G.3 Transboundary Impacts

Due to the limited nature of the facility it is not considered that the operation will have any impacts over long distances or outside Ireland

ATTACHMENT 1

BAT GUIDANCE & CONCLUSION

BAT DOCUMENT REVIEW FOR SELECTION OF PROCESSES APPLICABLE TO MSW COMPOST TREATMENT

Title of Document
BAT Guidance Note for Ferrous Metal Processing and the Pressing, Drawing and Stamping of Large Castings where the Production Area exceeds 500 sq m - Aug 2012 - Not Applicable as no metal processing will be completed on the site.
BAT Guidance Note for Ferrous Metal Foundries - Aug 2012 - Not Applicable as the facility is not a Ferrous Metal Foundries
BAT Guidance Note - Waste Sector (Landfill) - Dec 2011 - Applicable as a fraction of the treated compost will be sent to landfill
BAT Guidance Note - Waste Sector (Transfer & Materials Recovery) - Dec 2011 - Applicable as facility will be processing and storing food waste, animal waste for composting
BAT Guidance Note for the Manufacture of Integrated Circuits - Not Applicable as the facilities process consist of composting
BAT Guidance Note for the Initial Melting and Production of Iron & Steel Sector - Not Applicable as the facility is not an Iron or Steel Melting and Production facility
BAT Guidance Note for the Production of Paper Pulp. Paper & Board - Not Applicable as the facility is not a production facility for paper or pulp
BAT Guidance Note for Brewing, Malting & Distilling Sector - Not Applicable as the facility is not a production facility brewing, malting & distilling
BAT Guidance Note for Disposal or Recycling of Animal Carcasses & Animal Waste Sector - Applicable as the facility may be processing animal waste/slurry
BAT Guidance Note for the Animal Slaughtering Sector - Not Applicable as the facility will not be operating in this sector
BAT Guidance Note for the Cement & Lime Sector - Not Applicable as the facility will not be operating in this sector
BAT Guidance Note for the Ceramic & Diamond Sector - Not Applicable as the facility will not be operating in this sector
BAT Guidance Note for the Dairy Sector - Not Applicable as the facility will not be operating in this sector
BAT Guidance Note for the Energy (LCP) Sector - Not Applicable as the facility will not be operating a large combustion plant
BAT Guidance Note for the Fish Meal & Fish Oil Sector - Not Applicable as the facility will not be operating in this sector
BAT Guidance Note for the General Inorganic & Alumina Sector - Not Applicable as the facility will not be operating in this sector
BAT Guidance Note for the Glass Sector including Glass Fibre - Not Applicable as the facility will not be melting mineral fibres or manufacturing glass.
BAT Guidance Note for the Metals & Plastics Sector - Not Applicable as the facility will not be operating in this sector
BAT Guidance Note for the Non Ferrous Metals & Galvanising Sector - Not Applicable as the facility will not be operating in this sector

<p>BAT Guidance Note for the Oil & Gas Refining Sector - Not Applicable as the facility will not be operating in the oil and gas sector</p>
<p>BAT Guidance Note for the Organic Chemical Sector - Not Applicable as the facility will not be operating in the chemical sector</p>
<p>BAT Guidance Note for the Textiles Processing Sector - Not Applicable as the facility will not be operating in the textiles processing sector</p>
<p>BAT Guidance Note for the Use of Solvents - Not Applicable as the facility will not be using solvents.</p>
<p>BAT Guidance Note for the Vegetable & Animal Raw Materials Sector - Not Applicable as the facility will not be operating in the vegetable and animal raw materials sector</p>
<p>BAT Guidance Note Pesticides, Pharmaceuticals & Speciality Organic Chemicals Sector - Not Applicable as the facility will not be operating in the pesticides, pharmaceuticals and speciality organic chemicals sector</p>
<p>BATNEEC Guidance Note - Board Manufacturing Sector - 1996 - Not Applicable as the facility will not be manufacturing board</p>
<p>BATNEEC Guidance Note - Electroplating Operations - Oct 1996 - Not Applicable as the facility will not be operating in the electroplating operations</p>
<p>BATNEEC Guidance Note - Extraction of Minerals - Nov 1997 - Not Applicable as the facility will not be extracting minerals</p>
<p>BATNEEC Guidance Note - Manufacture of Sugar - Sept 1996 - Not Applicable as the facility will not be operating in the sugar sector</p>
<p>BATNEEC Guidance Note - Manufacture of Synthetic Fibres - Nov 1997 - Not Applicable as the facility will not be manufacturing synthetic fibres</p>
<p>BATNEEC Guidance Note - Manufacture or Use of Coating Materials - Nov 1997 - Not Applicable as the facility will not be manufacturing or use of coating materials</p>
<p>BATNEEC Guidance Note - Pig Production Sector - Feb 1998 - Not Applicable as the facility will not be in the pig production sector</p>
<p>BATNEEC Guidance Note - Poultry Production Sector - Feb 1998 - Not Applicable as the facility will not be in the poultry production sector</p>
<p>BATNEEC Guidance Note - Waste Sector (IPPC) - May 1996 - Not Applicable as the facility will not be incinerating waste or using heat to manufacture a fuel from waste. The facility will be used for the aerobic treatment of BMW by composting</p>
<p>BATNEEC Guidance Note - Wood Treatment and Preservation - Nov 1997 - Not Applicable as the facility will not treating or preserving wood</p>
<p>Draft BATNEEC Guidance Note - Asbestos Sector - 03/06/96 - Not Applicable as the facility will not be manufacturing or processing asbestos based products.</p>
<p>Draft BATNEEC Guidance Note - Crude Petroleum Handling & Storage - Not Applicable as the facility will not be handling or storing crude petroleum</p>
<p>Draft BATNEEC Guidance Note - Fellmongering & Tanning - 02/04/96 - Not Applicable as the facility will not be fellmongering or tanning leather</p>
<p>Draft BATNEEC Guidance Note - Forges - 15/05/96 - Not Applicable as the facility will not be operating a forge</p>

<p>Draft BATNEEC Guidance Note - Manufacture of Vegetable & Animal Oils and Fats - 05/06/96 - Not Applicable as the facility will not be manufacturing of vegetable & animal oils and fats</p>
<p>Draft BATNEEC Guidance Note - Roasting, Sintering or Calcining - 15/05/96 - Not Applicable as the facility will not be roasting, sintering or calcining of metallic ores in plants</p>
<p>Draft BATNEEC Note - Glass Production - 37/06/96 - Not Applicable as the facility will not be producing glass</p>
<p>Draft BATNEEC Guidance Note - Extraction of Peat - 14/05/96 - Not Applicable as the facility will not be extracting peat</p>
<p>Draft BATNEEC Guidance Note - Organo Tin - 13/10/96 - Not Applicable as the facility will not be coating tin</p>
<p>BATNEEC Note - Chemical Sector - May 1996 - Not Applicable as the facility will not be manufacturing, formulating or storing the listed chemicals at the facility.</p>
<p>Draft BATNEEC Guidance Note - Asbestos, Glass, Mineral Fibre Sector - 20/05/96 - Not Applicable as the facility will not be manufacturing or processing asbestos, asbestos based products or glass fibres</p>
<p>Draft BATNEEC Guidance Note - Carbonation, etc of Coal, etc - 15/05/96 - Not Applicable as the facility will not be carrying out the pyrolysis, carbonisation, gasification, liquefaction, dry distillation, partial oxidation or heat treatment of coal, lignite, oil or bituminous shale, other carbonaceous materials or mixtures of any kind</p>
<p>Draft BATNEEC Guidance Note - Asbestos, Glass & Mineral Fibre Sector - 30/04/96 - Not Applicable as the facility will not be manufacturing or processing asbestos, asbestos based products or glass fibres.</p>
<p>Draft BATNEEC Guidance Note - Manufacture Glass Fibre or Mineral Fibre - 03/07/96 - Not Applicable as the facility will not be manufacturing glass or mineral fibres</p>
<p>Draft BATNEEC Guidance Note - Ferrous Metals - 14/05/96 - Not Applicable as the facility will not be producing, recovering, processing or using ferrous metals in foundries.</p>
<p>BREF on the production of Cement, Lime and Magnesium Oxide (01.13) - Not applicable as the facility will not be producing cement, lime or magnesium oxide</p>
<p>BAT Conclusion on the Production of Cement, Lime, and Magnesium Oxide (04.13) - Not applicable as the facility will not be producing cement, lime or magnesium oxide</p>
<p>BREF for the Ceramic Manufacturing Industry (08.07) - Not applicable as the facility will not be manufacturing ceramics</p>
<p>REF in the Chlor-Alkali Manufacturing Industry (12.01) - Not applicable as the facility will not be manufacturing chlor-alkali</p>
<p>BREF in Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector (02.03) - Not applicable as the facility will not be operating in this sector</p>
<p>BREF to Industrial Cooling Systems (12.01) - Not applicable as the facility will not require a cooling system as no process will be taking place.</p>
<p>BREF on Economic and Cross Media Effects (07.06) - Not applicable at the facility</p>

BREF on Emissions from Storage (07.06)
BREF for Energy Efficiency (02.09)
BREF in the Ferrous Metals Processing (12.01) - Not applicable as metals will not be processed at the facility
BREF on the Food, Drink and Milk Processes Industries (08.06) - Not applicable as Food, Drink and Milk will not be manufactured at the facility
BREF on Intensive Rearing of Poultry & Pigs (07.03) - Not applicable as no poultry or pigs will be reared at the facility
BREF on the Production of Iron and Steel (01.13) - Not applicable as iron and steel will not be manufactured at the facility
BAT Conclusion on the Production of Iron and Steel (03.12) - Not applicable as iron and steel will not be manufactured at the facility
BREF for Large Combustion Plant - Not applicable as the facility will not be operating a large combustion plant and will only be used for the temporary storage of material.
BREF on Large Volume Inorganic Chemicals - Ammonia, Acids & Fertilisers (08.07) - Not applicable as Ammonia, Acids & Fertilisers will not be manufactured at the facility.
BREF on Large Volume Inorganic Chemicals - Solids & Other industry (08.07) - Not applicable as chemicals will not be manufactured at the facility.
BREF in the Large Volume Organic Chemicals Industry (02.03) - Not applicable as chemicals will not be manufactured at the facility.
BREF on the Management of Tailings and Waste-rock in Mining Activities (01.09) - Not applicable as no mining activities are to take place at the site.
BREF for the Manufacture of Glass (01.13) - Not applicable as glass will not be manufactured at the facility.
BAT Conclusion on the Manufacture of Glass (03.12) - Not applicable as glass will not be manufactured at the facility.
BREF on the General Principles of Monitoring (07.03) - Not applicable as directed at regulators
BREF on Non Ferrous Metals Processes (12.01) - Not applicable as metal will not be manufactured at the facility
BREF in the Pulp and Paper Industry (12.01) - Not applicable as glass will not be manufactured at the facility
BAT Conclusion for the production pulp, paper and board (09.14) - Not applicable as pulp, paper and board will not be produced at the facility
BREF for Organic Fine Chemicals (08.06) - Not applicable as no organic fine chemicals will be on site
BREF for the Production of Polymers (08.07) - Not applicable as no polymer production will be taking place on site
BREF for Mineral Oil and Gas Refineries (02.03) - Not applicable as there will be no oil or gas refining at the facility

<p>BAT Conclusions for the Refining of mineral oil and gas (03.14)</p> <ul style="list-style-type: none"> - Not applicable as there will be no oil or gas refining at the facility
<p>BREF for the Slaughterhouses and Animal By-Products Industries (05.05)</p> <ul style="list-style-type: none"> - Applicable as the facility will be accepting some animal by-products as waste.
<p>BREF on the Production of Speciality Inorganic Chemicals (08.07)</p> <ul style="list-style-type: none"> - Not applicable as the facility will not be producing any chemicals.
<p>BREF in the Smitheries and Foundries Industry (05.05)</p> <ul style="list-style-type: none"> - Not applicable as the facility will not contain a foundries or smitheries
<p>BREF for the Surface Treatment of Metals and Plastics (08.06)</p> <ul style="list-style-type: none"> - Not applicable as the facility will only be for the temporary storage of material and no treatment of materials will be taking place.
<p>BREF on Surface Treatment using Organic Solvents (08.07)</p> <ul style="list-style-type: none"> - Not applicable as the facility will not be treating substances, objects or products using organic solvents.
<p>BREF for Waste Incineration (08.06)</p> <ul style="list-style-type: none"> - Not applicable as the facility will not be incinerating waste.
<p>BREF for the Waste Treatment Industries (08.06)</p> <ul style="list-style-type: none"> - Applicable as the main processes on site are composting for the treatment of waste
<p>BREF for the Tanning of Hides and Skins (01.13)</p> <ul style="list-style-type: none"> - Not applicable as the facility will not be tanning hides and skins
<p>BAT Conclusion on the Tanning of Hides and Skins (02.13)</p> <ul style="list-style-type: none"> - Not applicable as the facility will not be tanning hides and skins
<p>BREF for the Textiles Industry (07.03)</p> <ul style="list-style-type: none"> - Not applicable as the facility will not be working with textiles at the facility

Table I.8 – Conclusions on BAT

Title of Document Waste Sector (Transfer & Materials Recovery) - Dec 2011			
BAT Ref.	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
4.1.2	Key Issues For Waste Transfer And Materials Recovery Facilities		
4.1.2.1	Site Location	Applicable	In Place – The facility buildings are located in an existing industrial building with no immediate domestic sensitive receptors. Facility is enclosed with no discharge of surface or process water from inside the facility.
4.1.2.2	Design Considerations	Applicable	In Place – Waste deposit and composting operations inside process building.
4.1.2.3	Decommissioning	Applicable	In Place - As part of the application a Decommissioning Management Plan was prepared for the site. Proposed – Scheduled updates on DMP to take changing conditions into account.
4.1.3	Environmental Management System (EMS)	Applicable	Proposed – EMS exists as part of existing waste licence.
4.1.4	Waste Acceptance	Applicable	In Place – Current SOPs in place for acceptance and rejection of wastes at the facility. Only wastes that are allowed under the current waste licence are allowed to be accepted on site.
4.1.4.1	Waste Acceptance Procedures	Applicable	In Place – Current SOPs in place for acceptance and rejection of wastes at the facility. .
4.1.5	Waste Dispatch	Applicable	In Place – SOPs for stored material and shipping
4.2 Risk to the Environment			
4.2.1 Potential Emissions to Air			
4.2.1.1	Inert Waste Transfer and Materials Recovery Facilities	Not Applicable	Not in Place: Mainly organic material accepted on site
4.2.1.2	Non-Hazardous Waste Transfer and Materials Recovery Facilities	Applicable	In Place - odour assessment at the facility is completed as part of the site waste licence conditions.
4.2.1.3	Hazardous Waste Transfer and Materials Recovery Facilities	Not applicable	Not in Place: No hazardous waste will be accepted or stored at the facility
4.2.1.4	Clinical Waste Transfer and Materials Recovery Facilities	Not applicable	Not in Place: No clinical waste will be accepted or stored at the facility
4.2.2 Potential Emissions to Water (including Groundwater) and Land			
4.2.2.1	Inert Waste Transfer and Materials Recovery Facilities	Not applicable	Not In Place – facility is a composting system inside process buildings.

BAT Ref.	BAT Statement	Applicability	State technique and whether it is in place or proposed for implementation
4.2.2.2	Non-Hazardous Waste Transfer and Materials Recovery Facilities	Applicable	In Place – There are no floor drains within the facility that discharge to either surface water or sewer. The impermeable concrete floor prevents discharge to land or groundwater. Leachate discharge from the composting process or the new reception building are directed to the leachate re-circulation system.
4.2.2.3	Hazardous Waste Transfer and Materials Recovery Facilities	Not applicable	Not in Place: No Hazardous Waste on site
4.2.2.4	Clinical Waste Transfer and Materials Recovery Facilities	Not applicable	Not in Place: No Clinical waste on site
4.3 Control Techniques			
4.3.1	Techniques for Prevention and Minimisation of Resource Consumption		
4.3.1.1	Use of Energy	Applicable	In Place – Energy usage is assessed on an annual basis as part of the waste licence conditions for the site.
4.3.1.2	Raw Materials	Not applicable	In Place - All material arriving at the site are non-hazardous waste and are controlled by the existing waste acceptance and handling SOPs.
4.3.2 Techniques for the Prevention and Minimisation of Emissions			
4.3.2.1	Minimisation of Emissions to Air	Applicable	In Place – A biofilter system is in place at the site to treat process air from the composting bays. The extension of the biofilter volume allows for potentially odorous air within the new reception building to be directed to the biofilter for treatment. Biofilter 2 treats air extracted from Sheds 2, 3 & 4. Miltown will continue to monitor emissions in compliance with their waste licence to ensure that they meet regulatory limits or guidelines. Proposed - Planning Application submitted to install a third biofilter system to treat extracted air from Sheds 2B and 3B.
4.3.2.2	Minimisation of Emissions to Water	Applicable	In Place - There are no discharges from inside the process building to surface water or sewer. Only discharge is to surface water from shed roofs and clean yard areas. The leachate re-circulation system controls all potentially impacted water emissions in the process buildings. Miltown will continue to monitor emissions in compliance with their waste licence to ensure that they meet regulatory limits or guidelines. Proposed – It is proposed to utilise the existing ICW on site to polish surface water runoff from the site prior to discharge from the site as part of the IED licence. Maturation sheds 2B and 3B will have leachate collection system and holding sumps to ensure no leachate migration.

BAT Ref.	BAT Statement	Applicability	State technique and whether it is in place or proposed for implementation
4.3.2.3	Fuel/Oil	Applicable	In Place - Fuel storage takes place in a tank located in a dedicated bunded area at the entrance to the new reception building. All re-fuelling will take place on hard standing at the building entrance to ensure that any spillages can be managed and cleaned immediately. An oil water separator unit exists on the surface water drainage system to remove any residual oil or fuel that may enter the surface water system.
4.3.3 Minimisation of Nuisances			
4.3.3.1	Litter/Housekeeping	Applicable	In Place - All material arriving on site is in closed trailers. Facility personnel complete daily checks at the access road to the facility and in the immediate environs to check for litter. Operations inside the shed are controlled and housekeeping is assessed daily.
4.3.3.2	Noise & Vibration	Applicable	In Place – The air extraction fan for shed 1 and the reception building is located on the southern side of the building with noise screened from the closest noise sensitive receptor. Noise monitoring completed as part of the existing licence indicated that the operations are not causing noise nuisance. The proposed new biofilter for sheds 2, 3 & 4 have 2 air extraction fans (1x 55kw). The fans are located to the north of the sheds and monitoring results indicate no noise impacts. Proposed: Air fan motors supplying air to air beds in maturation sheds 2B and 3B will be housed inside the sheds and noise will be mitigated by the building structure panelling. Air extraction fans for extracting air to biofilter 2 will be located to the south of shed 2B and noise nuisance will be mitigated by the building structure.
4.3.3.3	Vehicles	Applicable	Proposed – Assessment of fuel consumption and air emissions from on-site equipment and review of potential improvements.
4.3.3.4	Mud	Applicable	In Place - The site is mainly concreted and gravel surface with very little potential for mud on the site.
4.3.3.5	Vermin and Insects	Applicable	In Place – The facility has a vermin control contractor employed to install and regularly service vermin control measures on site.
4.3.3.6	Chemical Storage	Not Applicable	Not in Place: Only small volumes of cleaning chemicals held on site There will be no discharge to the environment of the chemicals
4.3.3.7	Infection Control	Not Applicable	Not in Place: There will be no clinical waste at the facility

BAT Ref.	BAT Statement	Applicability	State technique and whether it is in place or proposed for implementation
5	Best Available Techniques For Waste Sector: Waste Transfer And Materials Recovery		
5.1	<p>Primary Requirements: An EMS that incorporates the following features:</p> <ul style="list-style-type: none"> • Management and Reporting Structure. • Schedule of Environmental Objectives and Targets. • Annual Environmental Report (AER). • Environmental Management Programme (EMP). • Documentation System. • Corrective Action Procedures. • Awareness and Training Programme. • Communications Programme. • Waste acceptance procedure. • Waste management system for all incoming wastes and wastes on-site. • Appropriate storage and handling. • Wastewater management. • For hazardous waste transfer, the use of an extractive vent system linked to abatement equipment where applicable. • The provision of an impermeable surface across all areas of the facility where waste is handled and stored, with kerbing or sloping to protect any adjacent permeable areas. • The minimisation of underground tanks and pipework. 	Applicable	In Place - As part of the existing Waste Licence all aspects of the required EMS system have been developed to encompass all aspects of environmental controls on site.
5.2	Emissions to Air	Applicable	In Place – Existing biofilter system on site and proposed new biofilter for Sheds 2B and 3B
5.3	Emissions to Water		
5.3.1	Discharge to Surface Water	Applicable	In Place - There are no discharges from inside the process building to surface water. Only discharge is to surface water from shed roofs and outside yard areas. Surface water discharges are directed to a silt trap and oil/water separator system prior to discharge from the site. All leachate produced in the process buildings are directed to the closed leachate control system where it is re-circulated back into the process bays and not discharged from the site.
5.3.2	Discharge to Sewer/by tanker to sewer	Not Applicable	Not in Place: There are no discharges from the site to sewer.

BAT Ref.	BAT Statement	Applicability	State technique and whether it is in place or proposed for implementation
5.3.3	Discharge to Groundwater	Applicable	In Place – Existing impermeable concrete floor in reception building, at reception building ramp and inside the composting and existing and proposed maturation buildings eliminates discharge to groundwater from the facility. Proposed – On-going inspections of floor condition to ensure no cracks or breaks that could provide potential pathway.
5.3.4	Noise	Applicable	In Place – The air extraction fan for shed 1 and the reception building is located on the southern side of the building with noise screened from the closest noise sensitive receptor. Noise monitoring completed as part of the existing licence indicated that the operations are not causing noise nuisance. The proposed new biofilter for sheds 2, 3 & 4 have 2 air extraction fans (1x 55kw). The fans are located to the north of the sheds and monitoring results indicate no noise impacts. Proposed: Air fan motors supplying air to air beds in maturation sheds 2B and 3B will be housed inside the sheds and noise will be mitigated by the building structure panelling. Air extraction fans for extracting air to biofilter 2 will be located to the south of shed 2B and noise nuisance will be mitigated by the building structure.
6 BAT Associated Emission Levels			
6.1	Emission Levels for Discharges to Water	Applicable	In Place - Any surface water discharge will be assessed with relation to the European Communities Environmental Objectives (Surface Water) Regulations, 2009.
6.2	Emission Levels for Discharges to Sewer	Not Applicable	Not in Place: No discharge to sewer
6.3	Emission Levels For Discharges To Air		
6.3.1	Establishing Emission Limit Values	Not applicable	In Place – ELVs set in Waste Licence for the site and levels are established for surface water at SW1a.
6.3.2	Fugitive Air Emissions	Applicable	In Place – ELVs for dust deposition set in Waste Licence for the site
6.3.3	Odour Emissions	Applicable	In Place – ELVs for odorous compounds (i.e., mercaptans, ammonia and hydrogen sulphide) are set in Waste Licence for the site. Ongoing monitoring for these compounds is completed as required in Schedule C of Licence.
7 Compliance Monitoring			
7.1	Monitoring Guidance		
7.2	Monitoring Of Emissions To Air	Applicable	In Place- Odour monitoring to be completed with reference to Air Guidance Note 5 (AG5) at selected boundary locations and/or nearest odour sensitive receptor locations.
7.3	Monitoring Of Aqueous Emissions	Not applicable	Not in Place: There will be no aqueous emissions as the leachate will be re-circulated in the closed leachate control system.
7.4	Monitoring Of Emissions To Groundwater	Applicable	In Place - Groundwater monitoring is completed as part of the Waste Licence Compliance Conditions.
7.5	Monitoring Of Wastes	Applicable	In Place - Waste entering the site is recorded on the weighbridge records as per SOP

7.6	Monitoring Of Noise Emissions	Applicable	In Place - Noise monitoring is carried out in accordance with the Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4), 2016, at a frequency as specified by the Agency
Title of Document BREF on Emissions from Storage (07.06)			
BAT Ref.	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
5.3.1 Open storage			
	BAT is to apply enclosed storage by using, for example, silos, bunkers, hoppers and containers, to eliminate the influence of wind and to prevent the formation of dust by wind as far as possible by primary measures. See Table 4.12 for these primary measures with cross-references to the relevant sections.	Not Applicable	In Place: The feedstock and compost material are stored inside facility buildings.
5.3.2.	Enclosed storage		
	BAT is to apply enclosed storage by using, for example, silos, bunkers, hoppers and containers. Where silos are not applicable, storage in sheds can be an alternative.	Applicable	In Place - The feedstock and compost material is stored in facility Buildings. Floor of process shed and new waste reception building have impermeable concrete floors and will not allow any leaks or spills to migrate outside the facility buildings.
5.3.3	Storage of packaged dangerous solids	Not Applicable	Not in Place: No dangerous solids will be stored on the facility.
5.3.4	Preventing incidents and (major) accidents		
	BAT in preventing incidents and accidents is applying a safety management system	Applicable	In Place - An accident prevention plan and incident procedure are in place as part of the site licence.
5.4	Transfer and handling of solids		
5.4.1	General approaches to minimise dust from transfer and handling		
	BAT is to prevent dust dispersion due to loading and unloading activities in the open air, by scheduling the transfer as much as possible when the wind speed is low. However, and taking into account the local situation, this type of measure cannot be generalised to the whole EU and to any situation irrespective of the possible high costs.	Not Applicable	Not in Place: All unloading of feedstock and composted material takes place on the ramp at the reception building onto the reception floor. The ramp is located at the northern façade of the building with a rapid close door to minimise the escape of dust and litter. All other material movement and loading takes place inside the facility sheds.

Title of Document BREF for Energy Efficiency (02.09)			
BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
4.2.1	Energy efficiency management	Applicable	In Place – Assessment of the energy consumption and efficiency is completed on an annual basis at the site as part of the waste licence compliance conditions and AER
	BAT is to implement and adhere to an energy efficiency management system (ENEMS)	Applicable	In Place – Miltown complete an energy efficiency assessment as part of the licensing requirements to determine where energy savings could be achieved.
4.2.2.1	Continuous environmental improvement		
	BAT is to continuously minimise the environmental impact of an installation by planning actions and investments on an integrated basis and for the short, medium and long term, considering the cost benefits and cross-media effect	Applicable	In Place - The implementation of Objectives and targets within the EMS system ensure that continuous improvement is central to the environmental management of the facility.

Title of Document BREF for the Waste Treatment Industries (08.06)			
BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
	Environmental management 1. environmental management systems 2. provision of full details of the activities carried out on-site 3. having a good housekeeping procedure in place 4. having a close relationship with the waste producer/customer 5. the availability of qualified staff	Applicable	In Place - SOPs (Standard Operation Procedures) are in place and included within the application An EMS has been developed for the site as part of the licence compliance conditions.
Improve the knowledge of the waste input			
6	having a concrete knowledge of the waste input	Applicable	In Place - All companies delivering material to the facility have specific contracts for delivering specific waste types based on the EWC Code material acceptable at the facility.
7	implementing a pre-acceptance procedure	Applicable	In Place - All companies delivering material to the facility have specific contracts for delivering specific waste types based on the EWC Code material acceptable at the facility. Initial waste profiling and pre-clearance is carried out as per the waste acceptance SOP.
8	implementing an acceptance procedure	Applicable	In Place - A waste acceptance procedure has been developed for the site and included in the application.
9	implementing different sampling procedures	Not Applicable	Not in Place: Only waste materials included in the waste licence will be accepted
10	having a reception facility	Applicable	In Place – Reception building exists at facility
Waste output			
11	analysing the waste output	Applicable	In Place: Waste/compost is analysed prior to shipment to final destination as required in Condition 8.18.1 of licence.
Management systems			
12	the traceability in waste treatment	Not Applicable	In Place: The site has a system in place whereby material can be traced from waste acceptance to despatch.
13	mixing/blending rules	Applicable	In Place - Given the nature of the wastes accepted there may be a requirement for blending with a bulking agent to ensure that the proper C:N ratio is achieved for optimum composting conditions.
14	segregation and compatibility procedures	Applicable	In Place – Any non-compatible waste will be transferred to quarantine area as required in condition 8.11.9 of licence..

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
15	the efficiency of waste treatment	Applicable	In Place – All composting bays are monitored on an on-going basis to ensure they are operating to an optimum level. Logging of waste batches allows management to track the efficiency of each batch processed.
16	accident management plan	Applicable	In Place – Milltown have prepared an accident management plan for the facility as part of their waste licence.
17	incident diary	Applicable	In Place – Incident diary for recording incidents is held in facility office.
18	noise and vibration management plans	Not Applicable	Noise and vibration are not considered an issue at the facility
19	decommissioning	Applicable	In Place – Decommissioning Management Plan completed for site.
Utilities and raw material management			
20	energy consumption and generation	Applicable	In Place – Milltown complete an energy efficiency assessment as part of the licensing requirements to determine where energy savings could be achieved.
21	energy efficiency	Applicable	In Place – Milltown complete an energy efficiency assessment as part of the licensing requirements to determine where energy savings could be achieved.
22	internal benchmarking	Applicable	In Place – Benchmarking completed to compare year on year consumption.
23	the use of waste as a raw material plans	Not Applicable	Not in Place: The waste material cannot be used as a raw material in the process.
Storage and handling			
24	generic storage techniques	Applicable	In Place - As part of the site EMS an SOP has been developed for waste acceptance/handling and storage
(a)	to ensure storage areas are away from watercourses and sensitive perimeters, and located to eliminate or minimize the double handling of wastes within the installation	Applicable	In Place - Facility is located within a facility building with an impermeable concrete floor and berms around the doors to prevent any migration from the building floor.
(b)	to ensure that the storage area drainage infrastructure can contain all possible contaminated run-off and that drainage from incompatible wastes cannot come into contact with each other	Applicable	In place. Surface water run-off generated from inside the facility is directed to the closed leachate re-circulation system.
(c)	to ensure use of a dedicated area/store equipped with all necessary measures related to the specific risk of the wastes for sorting and repackaging laboratory smalls or similar waste.	Not Applicable	Not in Place: No lab waste on site

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
(d)	to handle odorous materials in fully enclosed or suitably abated vessels and storing them in enclosed buildings connected to abatement	Applicable	In place & Proposed – Process Buildings and existing and proposed maturation sheds connected to biofilter abatement system.
(e)	to ensure that all connections between the vessels are capable of being closed via valves.	Not Applicable	Not in Place: No waste liquids accepted on site
(f)	to ensure measures are available to prevent the building up of sludges higher than a certain level and the emergence of foams that may affect such measures in liquid tanks,	Not Applicable	Not in Place: No sludges or foams produced on site
(g)	equipping tanks and vessels with suitable abatement systems when volatile emissions may be generated.	Not Applicable	Not in Place: No volatile emissions from storage on site
(h)	to store organic waste liquid with a low flashpoint under a nitrogen atmosphere to keep it inertised	Not Applicable	Not in Place: No organic liquid with low flashpoint on site
25	to separately bund the liquid decanting and storage areas using bunds which are impermeable and resistant to the stored materials	Applicable	In-Place – Bunding around the fuel tank located in New Reception Building.
26	Tank and Process Pipework	Not Applicable	Not in Place: There are no tanks or associated pipework on site. With the exception of ducting for air input / exhaust and the leachate recirculation to the of water.
27	to take measures to avoid problems that may be generated from the storage/accumulation of waste	Applicable	In Place –Storage plan developed for inside the facility as part of licence compliance.
28	generic handling techniques		
(a)	to have systems and procedures in place to ensure that wastes are transferred to the appropriate storage safely.	Applicable	In Place – Waste Handling SOP
(b)	to have a management system for the loading and unloading of waste in the installation, which also takes into consideration any risks that these activities may incur.	Applicable	In Place – Waste Handling SOP and Accident Prevention Policy as part of licence.
(c)	to ensure that a qualified person attends the site to check the laboratory smalls, the old original waste, waste from an unclear origin or undefined waste (especially if drummed), to classify the substances accordingly and to package into specific containers.	Not Applicable	Not in Place: No Lab waste accepted at site

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
(d)	to ensure that damaged hoses, valves and connections are not used	Not Applicable	In Place: Leachate tanks and pipes visually checked
(e)	to collect exhaust gas from vessels and tanks when handling liquid waste	Not Applicable	Not in Place: No liquid waste collected from site all reused in process
(f)	to unload solids and sludge in closed areas which are fitted with extractive vent systems linked to abatement equipment when the handled waste can potentially generate emission to air (e.g. odours, dust, VOCs)	Applicable	In Place – Reception/ Process buildings and existing and proposed maturation sheds are/to be linked to biofilter abatement system.
(g)	to use a system to ensure the bulking of different batches only takes place with compatibility testing	Not Applicable	Not in Place: Based on the types of wastes accepted on site there will be no need for compatibility testing.
29	to ensure that the bulking /mixing to or from packaged waste only takes place under instruction and supervision and is carried out by trained personnel	Applicable	In place - All waste handling is completed by experienced personnel.
30	to ensure that chemical incompatibilities guide the segregation required during storage	Not applicable	Not in Place: No chemical wastes accepted on site.
31	the techniques to handle containerised waste	Not Applicable	Not in Place: No containerisation of wastes in drums or containers
Other common techniques not mentioned before			
32	using extractive vents during crushing, shredding and sieving operations.	Applicable	Proposed - The proposed development will include some sieving of material following composting to remove impurities. A review of required extractive venting etc. will be assessed if required.
33	encapsulating the crushing and shredding of special waste	Not Applicable	Not in Place: No crushing or shredding of special waste completed on-site
34	washing processes	Applicable	In Place: Process Bays and equipment are washed on regular basis using power washers and biodegradable disinfectant, where required.
(a)	to identify the components that may be present in the items to be washed (e.g. solvents)	Not Applicable	Not in Place: No wash water discharge from site
(b)	to transfer washings to appropriate storage and then treating them in the same way as the waste from which they were derived.	Applicable	In Place: Wash water from the process bays and truck wash is transferred to leachate collection system.
(c)	to use treated waste water from the WT plant for washing instead of fresh water	Not Applicable	Not in Place: Wash water will be transferred to leachate collection system. Rain water is harvested for use on site.
Air emission treatments			
35	to restrict the use of open topped tanks, vessels and pits	Not Applicable	Not in Place: No open topped pits tanks or vessels on site

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
36	to use an enclosed system with extraction, or under depression, to a suitable abatement plant. This technique is especially relevant to processes which involve the transfer of volatile liquids, including during tanker charging/discharging	Not Applicable	Not in Place: No volatile liquids handled on site
37	to apply a suitably sized extraction system which can cover the holding tanks, pre-treatment areas, storage tanks, mixing/reaction tanks and the filter press areas, or to have in place a separate system to treat the vent gases from specific tanks	Not Applicable	Not in Place: No holding/pre-treatment tanks or storage tanks on site, with the exception of a small fuel tank and water tanks.
38	to correctly operate and maintain the abatement equipment, including the handling and treatment /disposal of spent scrubber media.	Applicable	In Place - The main air emission from the facility is considered to be nuisance odour. The installation and monitoring of effectiveness of the biofilter abatement system is completed as part of the waste licence compliance conditions
39	to have a scrubber system in place for the major inorganic gaseous releases from those unit operations which have a point discharge for process emissions	Not Applicable	Not in Place: The facility will not produce major inorganic gaseous releases
40	to have leak detection and repair procedures in place in installations a) handling a large number of piping components and storage and b) compounds that may leak easily and create an environmental problem	Not Applicable	Not in Place: The site does not handle a large number of piping components or use compounds that leak easily
41	to reduce air emission to the following levels VOC 7-20mg/Nm ³ and PM to 2-20mg/Nm ³	Not Applicable	Not in Place: The site does not have point emission sources for either VOC or PM
Waste Water Management			
42	Reduce the water use and the contamination of water	Applicable	In Place – Re-circulation of leachate from the process and re-use reduces freshwater usage and controls contaminated water.
(a)	to apply site waterproofing and storage retention methods.	Applicable	In Place – facility is located in covered shed buildings
(b)	to carry out regular checks of the tanks and pits especially when they are underground	Not Applicable	In Place: The leachate levels in the tanks are checked daily, the oil interceptor is checked daily for visible oil sheen, tank high level alarms are checked weekly.
(c)	to apply separated water drainage according to the pollution load (roof water, road water, process water)	Applicable	In Place – no process water discharge (re-circulation). Roof water and road water are combined when entering the surface water drainage system.
(d)	to apply a security collection basin	Applicable	In Place: Drainage diversion system exists whereby potentially impacted surface water from the delivery/turning area can be diverted to the leachate collection system if required.
(e)	to performing regular water audits, with the aim of reducing water consumption and preventing water contamination	Applicable	In Place - Water usage is very low for process, the water used in the process is harvested from the process buildings roofs. This plus the recirculation of leachate results in very little water requirement from on-site well.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
(f)	to segregate process water from rainwater	Not Applicable	Not in Place: No process water discharged from facility
43	effluent specification being suitable for the on-site effluent	Not Applicable	Not in Place: There is no waste water discharged from the facility process.
44	to avoid the effluent by-passing the treatment plant systems	Not Applicable	Not in Place: No Effluent discharged from the site. All leachate is re-circulated
45	to have in place and operate an enclosure system whereby rainwater falling on the processing areas is collected along with tanker washings, occasional spillages, drum washings, etc. and returned to the processing plant or collected in a combined interceptor	Not Applicable	Not in Place: Processing area is inside building. No Rain falling on process area.
46	to segregate the water collecting systems for potentially more contaminated waters from less contaminated water	Applicable	In Place – separate leachate collection system for inside the process buildings and surface water collection system for the buildings roofs and outside yard areas.
47	to have a full concrete base in the whole treatment area, that falls to internal site drainage systems which lead to storage tanks or to interceptors that can collect rainwater and any spillage. Interceptors with an overflow to sewer usually need automatic monitoring systems, such as pH checks, which can shut down the overflow	Applicable	In Place – Dedicated separate leachate collection system for inside the process buildings.
48	to collect the rainwater in a special basin for checking, treatment if contaminated and further use	Not Applicable	Not in Place: Surface water will only be from roofs and immediate road area. If required sampling of water quality may be completed to assess quality.
49	to maximise the re-use of treated waste waters and use of rainwater in the installation	Applicable	In Place – Rainwater harvesting and leachate recirculation takes place at the facility.
50	to conduct daily checks on the effluent management system and to maintain a log of all checks carried out, by having a system for monitoring the effluent discharge and sludge quality in place	Not Applicable	Not in Place: No effluent treatment on site.
51	to firstly identify waste waters that may contain hazardous compounds, secondly segregate the previously identified wastewater streams on-site and thirdly, specifically treat waste water on-site or off-site	Applicable	In Place - Separate leachate collection system for inside the process buildings and surface water collection system for the buildings roofs and outside yard areas.. Only potential hazard that may be discharged would be hydrocarbons in rainwater from road and this is transferred to the on-site oil / water interceptor for removal. All sanitary waste from welfare facilities discharged to on-site septic waste water treatment system.
52	to ultimately after the application of BAT number 42, select and carry out the appropriate treatment technique for each type of waste water	Applicable	In Place - Sanitary waste water is sent to a septic system and leachate is re-circulated within the process.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
53	to implement measures to increase the reliability with which the required control and abatement performance can be carried out.	Not Applicable	Not in Place No on-site water treatment completed.
54	to identify the main chemical constituents of the treated effluent and to then make an informed assessment of the fate of these chemicals in the environment	Not Applicable	Not in Place No on-site water treatment completed
55	to only discharge the waste water from its storage after the conclusion of all the treatment measures and a subsequent final inspection	Not Applicable	Not in Place No waste water storage on site.
56	to achieve the following water emission values before discharge Water parameter Emission values associated with the use of BAT (ppm) COD 20 – 120 BOD 2 – 20 Heavy metals (Cr, Cu, Ni, Pb, Zn) 0.1 – 1 Highly toxic heavy metals: As - <0.1 Hg – 0.01 – 0.05 Cd - <0.1 – 0.2 Cr(VI) - <0.1 – 0.4	Not Applicable	Not in Place No on-site water treatment completed
Management of the process generated residue			
57	residue management planning	Applicable	In Place: Organic residues (e.g., overs) are reintroduced to the process
58	to maximise the use of reusable packaging (drums, containers, IBCs, pallets, etc.)	Applicable	In Place – materials are reused where possible.
59	to re-use drums when they are in a good working state. In other cases, they are to be sent for appropriate treatment	Applicable	In Place – empty drums are either reused on site or returned to the supplier for reuse.
60	to keep a monitoring inventory of the waste on-site by using records of the amount of wastes received onsite and records of the wastes processed	Applicable	In Place – Miltown have weighbridge documentation on wastes received on site and records of the material shipped from the facility.
61	to re-use the waste from one activity/treatment possibly as a feedstock for another	Applicable	In Place – Overs material screened from the processed material may be re-introduced into a subsequent process batch as a bulking agent.
Soil contamination			
62	to provide and then maintain the surfaces of operational areas, including applying measures to prevent or quickly clear away leaks and spillages, and ensuring that maintenance of drainage systems and other subsurface structures is carried out	Applicable	In Place - The facility consists of an impermeable concrete slab floor that will contain any leaks or spills and negate any potential soil contamination.
63	to utilise an impermeable base and internal site drainage	Applicable	In place - All operational and waste storage areas have an impermeable base. There are separate surface water and leachate collection systems.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
64	to reduce the installation site and minimise the use of underground vessels and pipework	Not Applicable	In Place: Only limited underground piping for the leachate collection system.
BAT for specific types of waste treatments			
Biological treatments			
65	use the following techniques for storage and handling in biological systems	Applicable	
(a)	for less odour-intensive wastes, use automated and rapid action doors (opening times of the doors being kept to a minimum) in combination with an appropriate exhaust air collection device resulting in an under pressure in the hall	Applicable	In Place: The material accepted at the site is considered to be less odour intensive with no issues relating to neighbours in the area. The access doors to the waste reception shed are open for only short periods when material is being accepted. The reception building is linked to the existing air extraction and treatment (i.e., biofilter) system for Shed 1. Maturation sheds 2,3 & 4 are also extracted to a biofilter and it is proposed that air from the new maturation sheds 2B and 3B will be exhausted to a third biofilter for treatment.
(b)	or highly odour-intensive wastes, use closed feed bunkers constructed with a vehicle sluice	Not Applicable	Not in Place: Material accepted at site is not considered to be highly odour intensive
(c)	House and equip the bunker area with an exhaust air collection device.	Not Applicable	Not in Place: No bunker area on site. Material is deposited onto the reception shed floor. The shed is linked to the existing air extraction and treatment (i.e., biofilter) system for Shed 1.
66	waste types and separation process		
	adjust the admissible waste types and separation processes according to the type of process carried out and the abatement technique applicable (e.g. depending on the content of non-biodegradable components) (see Section 4.2.3)	Applicable	In Place: The material is appropriately mixed with wood chip to achieve the best carbon:nitrogen ratio. Material is screened following processing to remove non-composted biodegradable material and non-biodegradable material.
67	techniques for anaerobic digestion	Not Applicable	Not in Place: All treatment on site is aerobic with no anaerobic treatment.
68	reducing the air emissions of dust, nitrogen oxides, sulphur oxides, carbon monoxide, hydrogen sulphide and volatile organic compounds when using biogas as fuel	Not Applicable	Not in Place: Biogas is not used as a fuel on site.
69	the techniques for mechanical biological treatments - improve the mechanical biological treatments (MBT) by:	Applicable	
(a)	using fully enclosed bioreactors	Not Applicable	Not in Place: Process bays with sheet covers are used for batch processing.
(b)	avoiding anaerobic conditions during aerobic treatment by controlling the digestion and the air supply (by using a stabilised air circuit) and by adapting the aeration to the actual biodegradation activity	Applicable	In Place: Processing material is monitored and forced aeration system is in place in each process bay to ensure that anaerobic conditions do not occur.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
(c)	using water efficiently	Applicable	In Place. Rain water is harvested for use in process. Also, waste water from the process is recirculated for use in the process bays.
(d)	thermally insulating the ceiling of the biological degradation hall in aerobic processes	Applicable	In Place – Thermally insulated ceilings are in place in the main process shed (i.e., shed 1) and the waste reception building.
(e)	minimising the exhaust gas production to levels of 2500 to 8000 Nm ³ per tonne. Levels below 2500 Nm ³ per tonne do not have been reported.	Not Applicable	Not In Place: Air input to the process bays is controlled and all exhaust gases from the process are removed with air changes within the process sheds and maturation sheds to the biofilter systems.
(f)	guaranteeing a uniform feed	Not Applicable	Not Currently in place – The majority of material currently processed on site is organic fines consisting of a mix of organic materials. When compost production is being completed then uniform feedstock would be required and secured.
(g)	recycling process waters or muddy residues within the aerobic treatment process to completely avoid water emissions. If waste water is generated, then this should be treated to reach the values mentioned in BAT number 56	Applicable	In Place - All process waste water is recycled back through the compost system.
(h)	continuously learning of the connection between the controlled variables of biological degradation and the measured (gaseous) emissions	Applicable	In Place: Assessment of gaseous emissions as part of the current licence requirements
(i)	reducing emissions of nitrogen compounds by optimising the C:N ratio.	Applicable	In Place: Bulking agent consisting of wood chip (carbon) is mixed through the composting material to provide optimum C:N ratio.
70	reduce the emissions from mechanical biological treatments to the following levels for treated exhaust gases: Odour (ouE/m ³) - <500 – 6,000 and NH ₃ mg/Nm ³ - <1-20 by using an appropriate combination of the following:	Applicable	In Place: The existing biofilter at the south of Shed 1 treats odour, ammonia and other gaseous emissions from process shed 1 and the waste reception building. The results for ammonia sampling completed at the biofilter were all <5ppm. A second biofilter to the north of shed 3 treats air emissions from maturation sheds 2, 3 and 4 Proposed: A proposed third biofilter to the south of shed 2B would treat air emissions from storage sheds 2B and 3B if approved by the Agency.
(a)	maintaining good housekeeping (related to BAT number 3)	Applicable	In Place: Ongoing housekeeping is completed as part of the site management and existing licence W0270-02.
(b)	regenerative thermal oxidiser	Not Applicable	Not in Place: no thermal oxidiser in use on site or proposed for site
(c)	dust removal.	Applicable	In Place: The existing biofilter at the south of Shed 1 treats dust and other gaseous emissions from process shed 1 and the waste reception building. A second biofilter to the north of Shed 3 treats air emissions from maturation sheds 2, 3 and 4. Proposed: A proposed third biofilter to the south of shed 2B would treat air emissions from storage sheds 2B and 3B if approved by the Agency.
71	Reduce the emissions to water to the levels mentioned in BAT number 56. In addition, restrict the emissions to water of total nitrogen, ammonia, nitrate and nitrite as well.	Applicable	In Place: On-going sealing of process building roofs to minimise condensate impact on surface water run-off and use of on-site ICW to polish stormwater prior to discharge.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
72	Physico-chemical treatments of waste waters	Not applicable	
(a)	clearly defining the objectives and the expected reaction chemistry for each treatment process	Not Applicable	Not in Place: No physio-chemical treatment takes place
(b)	assessing each new set of reactions and proposed mixes of wastes and reagents in a laboratory-scale test prior to waste treatment	Not Applicable	Not in Place: No physio-chemical treatment takes place on site
(c)	specifically designing and operating the reactor vessel so that it is fit for its intended purpose	Not Applicable	Not in Place: No physio-chemical treatment takes place on site
(d)	enclosing all treatment/reaction vessels and ensuring that they are vented to the air via an appropriate scrubbing and abatement system	Not Applicable	Not in Place: No physio-chemical treatment takes place on site
(e)	monitoring the reaction to ensure that it is under control and proceeding towards the anticipated result	Not Applicable	Not in Place: No physio-chemical treatment takes place on site
(f)	preventing the mixing of wastes or other streams that contain metals and complexing agents at the same time (see Section 4.3.1.3)	Not Applicable	Not in Place: No physio-chemical treatment takes place on site
73	in addition to the generic parameters identified for waste water in BAT number 56, additional parameters need to be identified for the physico-chemical treatment of waste waters. Some reference is given on this issue in the concluding remark Chapter 7	Not Applicable	Not in Place: No physio-chemical treatment takes place on site
74	apply the following techniques for the neutralisation process (see Section 4.3.1.3) a. ensuring that the customary measurement methods are used b. separately storing the neutralised waste water c. performing a final inspection of the neutralised waste water after a sufficient storage time has elapsed.	Not Applicable	Not in Place: No neutralisation process takes place on site
75	apply the following techniques to aid precipitation of the metals in treatment processes (see Section 4.3.1.4): a. adjusting the pH to the point of minimum solubility where the metals will precipitate b. avoiding the input of complexing agents, chromates and cyanides c. avoiding organic materials that may interfere with precipitation from entering the process d. allowing the resulting treated waste to clarify by decantation when possible, and/or by the addition of other dewatering equipment e. using sulphidic precipitation if complex agents are present. This technique may increase the sulphide concentration in the treated waste water.	Not Applicable	Not in Place: No precipitation of metals takes place on site

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
76	apply the following techniques to break-up emulsions (see Section 4.3.1.5): a. testing for the presence of cyanides in the emulsions to be treated. If cyanides are present, the emulsions need a special pre-treatment first b. setting up simulated laboratory tests.	Not Applicable	Not in Place: No break up of emulsions takes place on site
77	apply the following techniques to oxidation/reduction (see Section 4.3.1.6): a. abating the air emissions generated during the oxidation/reduction b. having safety measures and gas detectors in place (e.g. suitable for detecting HCN, H ₂ S, NO _x).	Not Applicable	Not in Place: No oxidation/reduction of chemicals takes place on site
78	apply the following techniques to waste waters containing cyanides (see Section 4.3.1.7): a. destroying the cyanides by oxidation b. adding caustic soda in excess to prevent a decrease in pH c. avoiding the mixing of cyanide wastes with acidic compounds d. monitoring the progress of the reaction using electropotentials.	Not Applicable	Not in Place: No treatment of waste waters containing cyanides takes place on site
79	apply the following techniques to waste waters containing chromium (VI) compounds (see Section 4.3.1.8): a. avoiding the mixing of Cr(VI) wastes with other wastes b. reducing Cr(VI) to Cr(III) c. precipitating the trivalent metal.	Not Applicable	Not in Place: No treatment of waste waters containing Chromium (VI) takes place on site.
80	apply the following techniques to waste waters containing nitrites (see Section 4.3.1.9): a. avoiding mixing nitrite wastes with other wastes b. checking and avoiding nitrous fumes during the oxidation/acidification treatment of nitrites.	Not Applicable	Not in Place: No treatment of waste waters containing nitrates takes place on site
81	apply the following techniques to waste waters containing ammonia (see Section 4.3.1.11):	Not Applicable	Not in Place: No treatment of waste waters containing ammonia takes place on site. All process waters containing ammonia is recirculated back onto the process material.
(a)	using a dual column air stripping system with an acidic scrubber for waste with ammonia solutions up to 20 w/w-%	Not Applicable	Not in Place: No treatment of waste waters containing ammonia
(b)	recovering the ammonia in the scrubbers and returning it to the process prior to the settlement stage	Not Applicable	Not in Place: No treatment of waste waters containing ammonia
(c)	removing the ammonia removed in the gas phase by scrubbing the waste with sulphuric acid to produce ammonium sulphate	Not Applicable	Not in Place: No treatment of gaseous ammonia – air in process sheds is treated in biofilter.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
(d)	extending any air sampling for ammonia in exhaust stacks or filter press areas to cover the VOCs in filtration and dewatering (see Section 4.3.1.12).	Not Applicable	Not in Place: No filtration or dewatering takes place on site.
82	link the air space above filtration and dewatering processes to the main abatement system of the plant (see Section 4.3.1.12)	Not Applicable	Not in Place: No filtration or dewatering takes place on site.
83	add flocculation agents to the sludge and waste water to be treated, to accelerate the sedimentation process and to facilitate the further separation of solids (see Section 4.3.1.16 for some applicability restrictions identified). To avoid use of flocculation agents, evaporation is better in those cases where it is economically viable (see Section 4.7.6.1)	Not Applicable	Not in Place: No water or sludge treatment as part of dewatering takes place on site.
84	apply rapid cleaning and steam- or high pressure water jet cleaning of the filter apertures of the sieving processes (see Section 4.3.1.17).	Applicable	In Place: Trommel system is cleaned using a power washer
For the physico-chemical treatment of solid wastes, BAT is to:			
85	promote the insolubilisation of amphoteric metals, and to reduce the leaching of toxic soluble salts by a suitable combination of water washing, evaporation, recrystallisation and acid extraction (see Section 4.3.2.1, 4.3.2.8, 4.3.2.9) when immobilisation is used to treat solid waste containing hazardous compounds for landfilling	Not Applicable	Not in Place: There will be no physio-chemical treatment of solid wastes on site.
86	test the leachability of inorganic compounds, by using the standardised CEN leaching procedures and by applying the appropriate testing level: basic characterisation, compliance testing or on-site verification (see Section 4.3.2.2)	Not Applicable	Not in Place: There will be no physio-chemical treatment of solid wastes on site.
87	restrict the acceptance of wastes to be treated by solidification/immobilisation treatment to those not containing high levels of VOCs, odorous components, solid cyanides, oxidising agents, chelating agents, high TOC wastes and gas cylinders (see Section 4.3.2.3)	Not Applicable	Not in Place: There will be no physio-chemical treatment of solid wastes on site.
88	apply control and enclosure techniques for loading/unloading and enclosed conveyor systems (see Section 4.3.2.3)	Not Applicable	Not in Place: There will be no physio-chemical treatment of solid wastes on site.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
89	have an abatement system(s) in place to handle the flow of air, as well as the peak loadings associated with charging and unloading (see Section 4.3.2.3)	Applicable	In Place: The existing biofilter at the south of Shed 1 treats odour, ammonia and other gaseous emissions from process shed 1 and the waste reception building. The results for ammonia sampling completed at the biofilter were all <5ppm. A second biofilter to the north of shed 3 treats air emissions from maturation sheds 2, 3 and 4 Proposed: A proposed third biofilter to the south of shed 2B would treat air emissions from storage sheds 2B and 3B if approved by the Agency.
90	use at least a solidification, vitrification, melting or fusion process before landfilling solid waste according to techniques in Sections from 4.3.2.4 to 4.3.2.7.	Not Applicable	Not in Place: There will be no physio-chemical treatment of solid wastes on site.
For the physico-chemical treatment of contaminated soil, BAT is to:			
91	control the rate of excavation, the amount of contaminated soil area that is exposed, and the duration that soil piles are left uncovered during the excavation and removal of contaminated soil (see Section 4.3.2.10)	Not Applicable	Not in Place: There will be no physio-chemical treatment of contaminated soils on site.
92	use a bench-scale test to determine the suitability of the process to be applied and the best operational conditions for its use (see Section 4.3.2.11)	Not Applicable	Not in Place: There will be no physio-chemical treatment of contaminated soils on site.
93	have collection and control equipment in place such as afterburners, thermal oxidisers, fabric filters, activated carbon, or condensers for the treatment of the gases from thermal treatments (see Section 4.3.2.11)	Not Applicable	Not in Place: There will be no physio-chemical treatment of contaminated soils on site.
94	report the efficiency achieved during the processes for the different components reduced and also for those that have not been affected by the process (see Section 4.3.2.3)	Not Applicable	Not in Place: There will be no physio-chemical treatment of contaminated soils on site.
Recovery of materials from waste			
For the re-refining of waste oils, BAT is to			
95	operate a careful control of the incoming materials supported by analytical equipment (viscometry, infrared, chromatography and mass spectrometry as appropriate), laboratories and resources (see Section 4.1.1.1)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
96	check at least for chlorinated solvents and PCBs (see Sections 4.1.1.1 and 4.4.1.2)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
97	use condensation as a treatment for the gas phase of the flash distillation unit (see Section 4.6.8)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
98	have vapour return lines for loading and unloading vehicles, routing all vents to a thermal oxidiser/incinerator or an activated carbon adsorption installation (see Sections 4.1.4.6, 4.6.7 and 4.6.14)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
99	direct vent streams to a thermal oxidiser with waste gas treatment if chlorinated species are present in the vent stream. If high levels of chlorinated species are present then condensation followed by caustic scrubbing and an activated carbon guard bed is the preferred treatment path (see Section 4.6)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
100	utilise a thermal oxidation at 850 °C with a two seconds residence time for the vacuum distillation vent of vacuum generators or for the air from process heaters (see Section 4.6)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
101	use a highly efficient vacuum system (see Section 4.4.1.1)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
102	use the residues from vacuum distillation or thin film evaporators as asphalt products (see Section 4.4.1.15)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
103	use a re-refining process of waste oil which can achieve a yield higher than 65 % on a dry basis (see Sections from 4.4.1.1 to 4.4.1.12)	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
104	achieve the following values in the discharged waste water from the re-refining unit (see Section 4.4.1.14): Hydrocarbons (<0.01 – 5ppm), Phenols (0.15 – 0.45ppm). For other water parameters, refer to BAT number 56 in the Generic BAT section.	Not Applicable	Not in Place: There will be no re-refining of waste oils on site.
For the treatment of waste solvent, BAT is to:			
105	operate a careful control of the incoming materials as supported by analytical equipment, laboratories and resources (see Section 4.1.1.1)	Not Applicable	Not in Place: There will be no waste solvent treatment on site.
106	evaporate the residue from the distillation columns and to recuperate the solvents (see Section 4.4.2.4)	Not Applicable	Not in Place: There will be no waste solvent treatment on site.
For the regeneration of waste catalyst, BAT is to:			
107	use bag filters to abate particulates from the fumes generated during the regeneration process (see Sections 4.4.3 and 4.6.5)	Not Applicable	Not in Place: There will be no regeneration of waste catalyst on site.
108	use a SOx abatement system (see Section 4.4.3.3).	Not Applicable	Not in Place: There will be no regeneration of waste catalyst on site.
For the regeneration of waste activated carbon, BAT is to:			

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
109	have an effective quality control procedure in place to ensure that the operator can differentiate between the carbon used for potable water or food grade carbon and the rest of spent carbons (the so-called 'industrial carbons') (see Section 4.4.4.2)	Not Applicable	Not in Place: There will be no regeneration of waste activated carbon on site.
110	require a written undertaking from customers indicating what the activated carbon has been used for (see Section 4.1.2.3 and this is also related to BAT number 12.c)	Not Applicable	Not in Place: There will be no regeneration of waste activated carbon on site.
111	utilise an indirect fired kiln for industrial carbons –it may be argued that this could equally be applied to potable water carbons. However, limits on capacity and corrosion may deem that only multiple hearth or direct fired rotary kilns may be used (see Section 4.4.4.1)	Not Applicable	Not in Place: There will be no regeneration of waste activated carbon on site.
112	utilise an afterburner with a minimum of 1100 °C, two seconds residence time and 6 %excess oxygen for the regeneration of industrial carbons where refractory halogenated or other thermally resistant substances are likely to be present. In other cases, less stringent thermal conditions are sufficient (see Section 4.4.4.2)	Not Applicable	Not in Place: There will be no regeneration of waste activated carbon on site.
113	utilise an afterburner with a minimum heating temperature of 850 °C, two seconds residence time and 6 % excess oxygen for potable water and food grade active carbons (see Section 4.4.4.2)	Not Applicable	Not in Place: There will be no regeneration of waste activated carbon on site.
114	apply a flue-gas treatment train consisting of quench and/or venturi and aqueous scrubbing sections, followed by an induced draft fan (see Section 4.4.4.2)	Not Applicable	Not in Place: There will be no regeneration of waste activated carbon on site.
115	utilise a caustic or soda ash scrubbing solutions to neutralise acid gases for industrial carbon plants (see Section 4.4.4.2)	Not Applicable	Not in Place: There will be no regeneration of waste activated carbon on site.
116	have a WWTP containing an appropriate combination of flocculation, settlement, filtration and pH adjustment for the treatment of potable water carbons. For effluents of industrial carbons, applying additional treatments (e.g. metal hydroxide precipitation, sulphide precipitation) are also considered BAT (see Section 4.4.4.3).	Not Applicable	Not in Place: There will be no regeneration of waste activated carbon on site.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
Preparation of waste to be used as fuel			
For the preparation of waste to be used as fuel, BAT is to:			
117	try to have a close relationship with the waste fuel user in order that a proper transfer of the knowledge of the waste fuel composition is carried out (see Section 4.5.1)	Not Applicable	Not in Place: The material accepted on site will be for bio drying only to reduce the moisture content of the waste and improve the calorific value of the material on behalf of a fuel processor. Once dried to the required level the material will be removed by the fuel processor for processing to RDf. The details of the fuel composition will be agreed between the fuel processor and the final fuel user only.
118	have a quality assurance system to guarantee the characteristics of the waste fuel produced (see Section 4.5.1)	Not Applicable	Not in Place: The material accepted on site will be supplied by a third party for biodrying. The quality assurance system for the fuel will be agreed between the waste material supplier and the final fuel user.
119	manufacture different type of waste fuels according to the type of user (e.g. cement kilns, different power plants), to the type of furnace (e.g. grate firing, blow feeding) and to the type of waste used to manufacture the waste (e.g. hazardous waste, municipal solid waste)(see Section 4.5.2)	Not Applicable	Not in Place: The material accepted on site will be for bio drying only to reduce the moisture content of the waste and improve the calorific value of the material on behalf of a fuel processor. Once dried to the required level the material will be removed by the fuel processor for processing the grades of RDf to suit their client specifications.
120	<i>when producing waste fuel from hazardous waste, use activated carbon treatment for low contaminated water and thermal treatment for highly polluted water (see Sections 4.5.6 and 4.7). In this context, thermal treatment relates to any thermal treatment in Section 4.7.6 or incineration which is not covered in this document</i>	Not Applicable	Not in Place: No hazardous waste will be accepted on site
121	<i>when producing waste fuel from hazardous waste, ensure correct follow-up of the rules concerning electrostatic and flammability hazards for safety reasons (see Sections 4.1.2.7 and 4.1.7)</i>	Not Applicable	Not in Place: No hazardous waste will be accepted on site
For the preparation of solid waste fuels from non-hazardous waste, BAT is to:			
122	visually inspect the incoming waste to sort out the bulky metallic or non-metallic parts. The purpose is to protect the plant against mechanical destruction (see Section 4.1.1.3 and this is also related to BAT 8.e)	Not Applicable	Not in Place: The material accepted on site will be for bio drying only. Any physical processing of the waste will be completed by the fuel processor supplying the material for biodrying prior to the material arriving on site.
123	use magnetic ferrous and non-ferrous metal separators. The purpose is to protect the pelletisers as well as fulfil the requirements of the final users (see Sections 4.5.3.3 and 4.5.3.4)	Not Applicable	Not in Place: The material accepted on site will be for bio drying only. Any physical processing of the waste will be completed by the supplier prior to the material arriving on site.
124	make use of the NIR technique for the sorting out of plastics. The purpose is the reduction of organic chlorine and some metals which are part of the plastics (see Section 4.5.3.10)	Not Application	Not in Place: The material accepted on site will be for bio drying only. Any physical processing of the waste will be completed by the supplier prior to the material arriving on site.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
125	use a combination of shredder systems and pelletisers suitable for the preparation of the specified size waste fuel (see Sections 4.5.3.1 and 4.5.3.12) For some installations preparing solid waste fuels from source-separated waste streams, the use of some or all of the above-mentioned techniques may not be necessary to comply with BAT (see Section 4.5.3.1)	Not Applicable	Not in Place: The material accepted on site will be for bio drying only. Any physical processing of the waste will be completed by the supplier prior to the material arriving on site.
For the preparation of solid waste fuel from hazardous waste, BAT is to:			
126	<i>consider emissions and flammability hazards in case a drying or heating operation is required (see Sections 4.1.2.7 and 4.5.4.1)</i>	Not Applicable	Not in Place: No hazardous waste will be accepted on site
127	<i>consider carrying out the mixing and blending operations in closed areas with appropriate atmosphere control systems (see Sections 4.1.4.5, 4.5.4.1 and 4.6)</i>	Not Applicable	Not in Place: No hazardous waste will be accepted on site
128	<i>use bags filters for the abatement of particulates (see Section 4.6.26)</i>	Not Applicable	Not in Place: No hazardous waste will be accepted on site
For the preparation of liquid waste fuels from hazardous waste, BAT is to:			
129	<i>use heat-exchange units external to the vessel if heating of the liquid fuel is required (Section 4.5.4.1)</i>	Not Applicable	Not in Place: No hazardous waste will be accepted on site
130	<i>adapt the suspended solid content to ensure the homogeneity of the liquid fuel (see Section 4.5.4.1)</i>	Not Applicable	Not in Place: No hazardous waste will be accepted on site

Title of Document BAT Guidance Note For Disposal or Recycling of Animal Carcasses and Animal Waste Sector			
BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
5.2.1 General Process and Operations			
5.2.1.1 BAT for Animal by-Product Installations			
	use an environmental management system (see BREF Sections 4.1.1 & 5.1.1.1)	Applicable	In Place - SOPs (Standard Operation Procedures) are in place as part of the existing site licence. An EMS has been developed for the site as part of the licence compliance conditions.
	provide employee training (see BREF Section 4.1.2)	Applicable	In Place: Employee awareness and training is completed as required under schedule 2.2.2.6 of the existing site waste licence.
	use a planned maintenance programme (see BREF Section 4.1.3)	Applicable	In Place: Preventative maintenance is completed as required under schedule 2.2.2.8 of the existing site waste licence.
	apply dedicated metering of water consumption (see BREF Section 4.1.4)	Not Applicable	Not In Place: Water used in the process and ancillary works is harvested rainwater from the facility roofs. The other water source on site is from an on-site well which is un-metered.
	separate process and non-process waste water (see BREF Section 4.1.5)	Applicable	In Place: Process wastewater is managed through a recirculation system where it is stored and recirculated back to the process bays. Surface water from the roofs and clean yard surfaces is directed to a separate surface water drainage system.
	remove all running water hoses and repair dripping taps and toilets (see BREF Section 4.1.7)	Applicable	In Place: The preventative maintenance program under schedule 2.2.2.8 of the existing site waste licence would include repairs to hoses and taps.
	fit and use drains with screens and/or traps to prevent solid material from entering the wastewater (see BREF Section 4.1.11)	Applicable	In Place: surface water drains and process drains have silt traps installed to collect solids.
	dry clean installations and transport by-products dry (see BREF Section 4.1.12), followed by pressure cleaning (see BREF Section 4.1.10) using hoses fitted with hand operated triggers (see BREF Section 4.1.9) and where necessary hot water supplied from thermostatically controlled steam and water valves (see BREF Section 4.1.23)	Applicable	In place: When required process bays are washed with power washer and sprayed with biodegradable disinfectant.
	operate continuous, dry and segregated collection of animal by-products throughout processing (see BREF Section 4.3.1.1)	Applicable	In Place: Material is separated through a batching system within the process bays.
	use sealed storage, handling and charging facilities for animal by-products, e.g. storage areas working under negative pressure (see BREF Section 4.3.1.3)	Applicable	In Place: The existing biofilter at the south of Shed 1 treats odour, ammonia and other gaseous emissions from process shed 1 and the waste reception building. The results for ammonia sampling completed at the biofilter were all <5ppm. A second biofilter to the north of shed 3 treats air emissions from maturation sheds 2, 3 and 4 Proposed: A proposed third biofilter to the south of shed 2B would treat air emissions from storage sheds 2B and 3B if approved by the Agency.
	where it is not possible to treat animal by-products before their decomposition starts to cause odour problems and/or quality problems, refrigerate them as quickly as possible and for as short a time as possible (see BREF Section 4.3.1.4)	Not Applicable	In Place: all organic material accepted on site that could contain animal by-products are processed as quickly as possible to reduce the potential creation of odours. Air in the waste reception area is extracted to the site biofilter for treatment.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
	where inherently malodorous substances are used or are produced during the treatment of animal by-products, pass the low intensity/high volume gases through a biofilter (see BREF Section 4.1.33)	Applicable	In Place: all organic material accepted on site that could contain animal by-products are processed as quickly as possible to reduce the potential creation of odours. Air in the waste reception area is extracted to the site biofilter for treatment.
	apply overfilling protection on bulk storage tanks (see BREF Section 4.1.13)	Applicable	In Place: High level alarm in place on leachate holding tank
	provide and use bunds for bulk storage tanks (see BREF Section 4.1.14)	Applicable	In Place: Fuel storage tank is located in concrete bund inside a dedicated structure
	implement energy management systems (see BREF Sections 4.1.16 & 4.1.17)	Applicable	In Place: Energy usage is monitored on an on-going basis
	implement refrigeration management systems (see BREF Section 4.1.18)	Not Applicable	Not In Place: No refrigeration takes place on site
	operate controls over refrigeration plant running times (see BREF Section 4.1.19)	Not Applicable	Not In Place: No refrigeration takes place on site
	use thermostatically controlled steam and water blending valves (see BREF Section 4.1.23)	Not Applicable	Not In Place: No steam services in place on site
	rationalise and insulate steam and water pipework (see BREF Section 4.1.24)	Not Applicable	Not In Place: No steam services in place on site
	isolate steam and water services (see BREF Section 4.1.25)	Not Applicable	Not In Place: No steam services in place on site
	implement light management systems (see BREF Section 4.1.26)	Applicable	In Place: Energy usage is monitored on an on-going basis
	store animal by-products for short periods and possibly refrigerate them (see BREF Section 4.1.27)	Not Applicable	In Place: all organic material accepted on site that could contain animal by-products are processed as quickly as possible to reduce the potential creation of odours. Air in the waste reception area is extracted to the site biofilter for treatment.
	audit odour (see BREF Section 4.1.28)	Applicable	In Place: Odour compounds sampling is completed as required under Schedule C.1.1 and C.1.2 of the existing waste licence and an odour management plan is in place for the site.
	design and construct vehicles, equipment and premises to ensure that they are easy to clean (see BREF Section 4.1.30)	Applicable	In Place: Premises is designed and constructed to be easily cleaned using on-site power washer. Equipment used on site is designed by manufacturer to be easily cleaned using power washer units.
	clean material storage areas frequently (see BREF Section 4.1.31)	Applicable	In Place: Waste Storage areas are cleaned when empty

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
	implement a noise management system (see BREF Section 4.1.36)	Applicable	<p>In Place – The air extraction fan for shed 1 and the reception building is located on the southern side of the building with noise screened from the closest noise sensitive receptor. The fans for extracting air from sheds 2, 3 and 4 are located to the north of Shed 3 and are screened from the closest sensitive receptor. Noise monitoring completed as part of the existing licence indicated that the operations are not causing noise nuisance.</p> <p>Proposed: The proposed new biofilter for sheds 2B and 3B would have 2 air extraction fans. The fans will be located to the south of shed 2B and the building should provide noise screening..</p>
	reduce noise at, e.g. roof extract fans, balance lagoon blowers and refrigeration plants (see BREF Sections 4.1.3. & 4.1.36)	Applicable	<p>In Place – There are no fans on building roofs, all fans are at ground level to reduce potential noise impacts. The air extraction fan for shed 1 and the reception building is located on the southern side of the building with noise screened from the closest noise sensitive receptor. The fans for extracting air from sheds 2, 3 and 4 are located to the north of Shed 3 and are screened from the closest sensitive receptor. Noise monitoring completed as part of the existing licence indicated that the operations are not causing noise nuisance.</p> <p>Proposed: The proposed new biofilter for sheds 2B and 3B would have 2 air extraction fans. The fans will be located to the south of shed 2B and the building should provide noise screening...</p>
	replace the use of oil with natural gas, where a natural gas supply is available (see BREF Sections 4.1.37. & 4.1.38)	Not Applicable	Not In Place: No natural gas supply exists at the site
	enclose animal by-products during transport, loading/unloading and storage (see BREF Sections 4.1.40. & 4.1.39)	Applicable	In Place: All deliveries of organic waste (which may contain elements of animal by-products) are delivered in enclosed container trucks.
	where it is not possible to treat blood before its decomposition starts to cause odour problems and/or quality problems, refrigerate it as quickly as possible and for as short a time as possible, to minimise decomposition (see BREF Section 4.2.1.8)	Not Applicable	Not In place: The material processed on site is mainly organic solid waste and no processing of blood material takes place on site.
	export any heat and/or power produced which cannot be used on site.	Not Applicable	Not In Place: No excess heat or power produced from composting that could currently be exported.
5.2.1.2 BAT for Environmental Management			
	BAT is to implement and adhere to an Environmental Management System (EMS) that incorporates the standard features associated with a management system. See Section 5.1.1.1 of BREF for further information on Environmental Management Systems.	Applicable	In Place: An EMS is in place under the existing waste licence for the site.

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
5.2.2 Integration of Same Site Activities			
For animal by-product installations, operating on the same site, BAT is to do the following:			
	re-use heat and/or power produced in one activity in other activities (see BREF Sections 4.4.1, 4.4.2 & 4.4.3),	Applicable	In Place: Heat produced by process bays are retained under tarp covers to enhance composting conditions. If required, the facility can recirculate process air into the composting bays in order to retain high temperatures, especially during cold weather.
	share abatement techniques, where these are required, e.g. WWTPs.	Not Applicable	Not In Place: No sharing of abatement techniques takes place
For rendering and incineration on the same site, BAT is to do the following:			
	burn non-condensable gases produced during rendering (see BREF Sections 4.4.2 & 4.4.3).	Not Applicable	Not In Place: No Rendering takes place on site
5.2.3 Installation and Equipment Cleaning			
For the cleaning of animal by-product installations BAT is to do the following:			
	Manage and minimise the quantities of water and detergents used (see BREF Section 4.1.42.1)	Applicable	In Place: Harvested rainwater is used where possible.
	Select those detergents which cause minimum impact on the environment, without compromising the efficacy of cleaning (see BREF Section 4.1.42.2)	Applicable	In Place: Biodegradable detergents used on site.
	Avoid, where possible, the use of cleaning and infection agents containing active chlorine (see BREF Section 4.1.42.3), and	Applicable	In Place: Only biodegradable cleaning and infection agents not containing active chlorine are used
	Where the equipment is suitable, operate a cleaning-in-place system (see BREF Section 4.2.4.3).	Applicable	In Place: Where required equipment is cleaned in-situ using air and power washers.
5.2.4 Treatment of Wastewater			
For all animal by-product installations BAT is to minimise the quantity and load of wastewater generated using the measures outlined in this document, then to treat the wastewater as follows			
	prevent wastewater stagnation (see BREF Section 4.1.43.3)	Applicable	In Place: Waste water in recirculation system is moved through the system as quickly as possible. Due to the heat and water loss in the process there is a requirement for use of the water on a regular basis.
	apply an initial screening of solids using sieves at the animal by-product installation (see BREF Section 4.1.43.4)	Applicable	In Place: No sieves, but silt traps are in place to collect solids prior to the wastewater transfer to the holding tank and recirculation to process.
	remove fat from wastewater, using a fat trap (see BREF Section 4.1.43.9)	Not Applicable	Not in Place: There is typically a low volume of waste water produced from the process. Any wastewater is directed to the leachate recirculation system. Any sediment (including fats) that may settle in the holding tank are removed on a regular basis to avoid clogging of spray nozzles in the process bays
	use a flotation plant, possibly combined with the use of flocculants, to remove additional solids (see BREF Section 4.1.43.10)	Not Applicable	Not in Place: No wastewater treatment takes place on site. Wastewater from the process is recirculated back into the process bays

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
	use a wastewater equalisation tank (see BREF Section 4.1.43.11)	Not Applicable	Not In Place: No wastewater treatment takes place on site. Wastewater from the process is recirculated back into the process bays
	provide wastewater holding capacity in excess of routine requirements (see BREF Section 4.1.43.1)	Applicable	In Place: A holding tank is in place to the south of process shed 1 with a volume of 54.55m ³ which is a holding capacity that exceeds normal requirements.
	prevent liquid seepage and odour emissions from wastewater treatment tanks, by sealing their sides and bases and either covering them or aerating them (see BREF Sections 4.1.43.12 & 4.1.43.13)	Not Applicable	Not In Place: No wastewater treatment takes place on site. Wastewater from the process is recirculated back into the process bays
	subject the effluent to a biological treatment process. These may include the following: <ul style="list-style-type: none"> • anaerobic pre-treatment using down-flow or up-flow reactors • aerobic digestion combined with intermittent are alternating denitrification under anoxic conditions. Biological wastewater treatment, or, • biological wastewater treatment using overpressure in conjunction with ultrafiltration 	Not Applicable	In Place: Waste water is recirculated back into the aerobic biological process where it is consumed by the process.
5.3 BAT – PREVENTATIVE MEASURES FOR SPECIFIC UNIT OPERATIONS			
5.3.1 Additional BAT For Fat Melting	For fat melting no additional BAT have been identified in addition to those listed in 5.2 above.	Not Applicable	Not In Place: The site is for composting and biostabilisation of organic wastes only. No Fat Melting takes place on site
5.3.2 Additional BAT For Rendering	In addition to those listed in Section 5.2 above, for rendering installations, BAT is to do the following:	Not Applicable	Not In Place: The site is for composting and biostabilisation of organic wastes only. No Rendering takes place on site
5.3.3 Additional BAT For Blood Manufacture	In addition to those listed in Section 5.2 above, for blood processing installations, BAT is to do one of the following: <ul style="list-style-type: none"> • concentrate plasma, prior to spray drying, using reverse osmosis (see BREF Section 4.3.5.1) • concentrate plasma, prior to spray drying, using vacuum evaporation, (see BREF Section 4.3.5.2), or • remove water from blood, by steam coagulation, prior to spray drying (see BREF Section 4.3.4.4). 	Not Applicable	Not In Place: The site is for composting and biostabilisation of organic wastes only. No Blood processing takes place on site
5.3.4 Additional BAT For Bone Manufacture	For bone processing, no additional BAT has been identified in addition to those in Section 5.2.	Not Applicable	Not In Place: The site is for composting and biostabilisation of organic wastes only. No bone manufacturing takes place on site

BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation																		
5.3.5 Additional BAT For Gelatine Manufacture	In addition to those listed in Section 5.2 above, for gelatine manufacturing installations, BAT is to do the following: <ul style="list-style-type: none"> insulate bone de-fatting equipment (see BREF Section 4.3.7.1). 	Not Applicable	Not In Place: The site is for composting and biostabilisation of organic wastes only. No Gelatine Manufacturing takes place on site.																		
5.3.6 Additional BAT For Gas Production	In addition to the general measures listed in Section 5.2 for biogas production, BAT is to do the following: <ul style="list-style-type: none"> re-use heat during biogas production, through the use of heat exchangers (see BREF Section 4.3.10.3). 	Not Applicable	Not In Place: The site is for composting and biostabilisation of organic wastes only. No Gas Production takes place on site.																		
5.3.7 Additional BAT For Composting	In addition to the general measures listed in Section 5.2 for composting animal by-products, BAT is to do the following: <ul style="list-style-type: none"> provide sufficient drainage capacity for a windrow on a hard standing (see BREF Section 4.3.11.1) constructed from concrete (see BREF Section 4.3.11.2). 	Applicable	In Place: Following processing in concrete bays the material is stored in windrows in storage sheds that have concrete floors and sufficient drainage capacity. Material only has 40% moisture content so there is very little water runoff from the windrows.																		
6. BAT ASSOCIATED EMISSION LEVELS																					
6.1 EMISSION LEVELS FOR DISCHARGES TO AIR	The BAT emission levels for emissions to air are as follows:	Applicable	In Place: Sampling and monitoring is completed as part of the existing site licence to assess the emission concentrations against the limits set out in Schedule B of the existing site waste license.																		
	<table border="1"> <thead> <tr> <th>Emission</th> <th>Emission Level</th> <th>Mass Emission Level ^{Note 1}</th> </tr> </thead> <tbody> <tr> <td>Ammonia</td> <td>50 ppm v/v</td> <td>150,000 mg/h</td> </tr> <tr> <td>Amines</td> <td>5 ppm v/v</td> <td>-</td> </tr> <tr> <td>Hydrogen Sulphide and Mercaptans</td> <td>5 ppm v/v</td> <td>15,000 mg/h</td> </tr> <tr> <td>Total Particulate Matter (including emissions from material handling)</td> <td>5 – 50 150</td> <td>At mass flow >0.2kg/hr At mass flow up to 0.2kg/hr</td> </tr> <tr> <td>Total Organic Carbon (as C)</td> <td>50mg/m³</td> <td>500</td> </tr> </tbody> </table>			Emission	Emission Level	Mass Emission Level ^{Note 1}	Ammonia	50 ppm v/v	150,000 mg/h	Amines	5 ppm v/v	-	Hydrogen Sulphide and Mercaptans	5 ppm v/v	15,000 mg/h	Total Particulate Matter (including emissions from material handling)	5 – 50 150	At mass flow >0.2kg/hr At mass flow up to 0.2kg/hr	Total Organic Carbon (as C)	50mg/m ³	500
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BAT Ref	BAT Statement	Applicability	State technique and whether it is in place or state schedule for implementation
	<p>EMISSION LEVELS FOR ODOUR</p> <p>The ELV for odour measured at the nearest odour sensitive receptor beyond the facilities boundary will be set at <1.5 OUE/m³ – 98- percentile of 1 – hourly average concentration³, above that of recorded background concentrations.</p> <p>For existing facilities the ELV for odour measured at the nearest odour sensitive receptors is set at <5.0 OUE/m³ - 98-percentile of 1 - hourly average concentration, above that of recorded background concentrations.</p> <p>prEN13725 Air Quality – Determination of Odour Concentration by Dynamic Olfactometry.</p> <p>EPA (2001) Odour Impacts and Odour Emission Control Measures for Intensive Agriculture.</p>	Applicable	<p>In Place: Odour sampling and monitoring is completed annually as part of Schedule C of the existing site licence to assess odour emission concentrations.</p> <p>Proposed: An odour assessment model was completed as part of the licence application process in 2018 to assess the odour concentrations at the closest sensitive receptors. The model indicated no impacts at sensitive receptors.</p>