

Licence Review Application No. – LA010323

NON-TECHNICAL SUMMARY

Submission By: Milltown Composting Systems Ltd.
Milltownmore,
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 (A2-3) that would treat extracted air from sheds 2B and 3B. That biofilter would be located to the south of 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	Milltown 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	Milltown 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 A2-1 to the South of Shed 1) A 2-2 (E615787, N633520) (Biofilter A2-2, 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

At present, and for the immediate future, the Milltown facility is solely concentrated on the biostabilisation of organic fines material as it has contracts in place to process that material on behalf of waste management contractors that physically process MSW. For the next number of years it is envisaged that the Milltown facility (i.e., the existing facility sheds and the proposed new sheds 2B and 3B) would be used for processing and biostabilising organic fines waste only.

In the event of a change in the market where the supply of brown bin organic material and other waste materials that can produce a usable compost product is increased, Milltown would change their material management system to ensure that if organic waste that can produce compost product and organic fines waste were being accepted on site at the same time they would be physically separated to avoid potential for cross contamination to occur. Any potential crossover areas that may exist (e.g., internal transfer area between the existing compost facility sheds and the proposed new sheds 2B and 3B) will be physically blocked and sealed to ensure complete separation of the two activities.

- The biostabilisation of organic fines would continue to be completed in the existing composting bays (i.e., shed 1) and maturation would take place in Sheds 2 and 3 with storage and transfer from shed 4. Organic fines waste for biostabilisation would continue to be received at the existing Waste Reception Shed.
- Following appropriate decontamination of the bays and floors of new sheds 2B and 3B these could be used for the production of compost material following full clean-down and disinfection of the bays and maturation areas in Sheds 2B and 3B to meet the Department of Agriculture requirements under the Animal Byproducts Regulations. The bays in sheds 2B would have the capacity to provide for in vessel aerobic composting and pasteurisation of compost material and Shed 3B would have capacity for maturation of the compost to be completed on aerated floors. All organic waste intake, processing, maturation and storage of finished compost would take place inside sheds 2B and 3B and would be physically separated from any biostabilised waste activities on site. Organic waste for the production of compost would be accepted through the doors on the western façade of Shed 2B and would be immediately transferred to the compost vessel bays.

The review of the licence will result in the facility continuing to operate under the Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013. Milltown 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 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.</p> <p>To manage any possible spillage risk on the turntable area Milltown 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 entrance/exit door for the proposed 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 dedicated full retention oil water separator prior to discharge to the ICW system.</p>
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 Milltown 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 Milltown 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, Milltown 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>Milltown 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 Milltown that the trucks arriving and leaving the facility avoid using air brakes to reduce the potential noise emitted from their movements</p> <p>During operational activities occurring at the facility, all doors will be closed to ensure that no unnecessary noise emissions occur</p>
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</p>

			<p>handle the volume of air to provide a clear working environment. Based on the results of the Odour Dispersion Modelling completed as part of the licence review process it is intended to aspirate the proposed maturation sheds 2B and 3B at a maximum of 2.2 air changes per hour, this will require the additional air to be treated in the biofilter.</p> <p>It is proposed to utilize the existing air management system to continue to collect and treat air from the existing process sheds in biofilters A2-1 and A2-2. 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.
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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 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 initial screening to remove contaminants, blending with bulking agents, composting in separate enclosed bays, maturation in windrows and post treatment to remove impurities. At present, and for the immediate future, the Milltown facility is solely concentrated on the biostabilisation of organic fines material as it has contracts in place to process that material on behalf of waste management contractors that physically process MSW.

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 and finished material storage is carried out in sheds 2, 3 and 4 located 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 southwest 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 A2-1 is located on the southern side of Shed 1.

The organic materials are transferred from the reception shed 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.

If required, and 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. However, the material processed at the site presently and in the near future will be organic fines only and the MSW fines as delivered typically have a particle size less than 40 – 50 mm. Large organic items (e.g., wood pieces) 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 Sheds 2 and 3 located to the east where it is formed into windrows for maturation. The windrows are formed on forced air beds that remove the need to turn the windrows and allow for controlled aeration of the material. Temperature, oxygen and moisture content are regularly monitored and the air input 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 the process shed (Shed 1) and the maturation and storage sheds (Sheds 2, 3 and 4) and treat odorous air, an air extraction fan removes air from the buildings and channels it into the woodchip biofilters (i.e., biofilter A2-1 treats air removed from Shed 1 and biofilter A2-2 treats air removed from Sheds 2, 3 and 4). The biofilters 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 biofilters are 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.

Seven 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. Milltown will continue to accept material at the facility between 07:00 and 19:00, Monday to Saturday with a restriction on truck movements between 08:30 and 09:30 each morning to avoid disruption to neighbours at that peak traffic period.

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

Milltown propose to increase the throughput of organic 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.

At present, and for the immediate future, the Milltown facility is solely concentrated on the biostabilisation of organic fines material as it has contracts in place to process that material on behalf of waste management contractors that physically process MSW. For the next number of years it is envisaged that the Milltown facility (i.e., the existing facility sheds and the proposed new sheds 2B and 3B) would be used for processing and biostabilising organic fines waste only. The reception area for reception of organic waste material is a shed 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.

In the event of a change in the market where the supply of brown bin organic material and other waste materials that can produce a usable compost product is increased, Milltown would change their material management system to ensure that if organic waste that can produce compost product and organic fines waste were being accepted on site at the same time they would be physically separated to avoid potential for cross contamination to occur. Any potential crossover areas that may exist (e.g., internal transfer area between the existing compost facility sheds and the proposed new sheds 2B and 3B) will be physically blocked and sealed to ensure complete separation of the two activities.

- The biostabilisation of organic fines would continue to be completed in the existing composting bays (i.e., shed 1) and maturation would take place in Sheds 2 and 3 with storage and transfer from shed 4. Organic fines waste for biostabilisation would continue to be received at the existing Waste Reception Shed.
- Following appropriate decontamination of the bays and floors of new sheds 2B and 3B these could be used for the production of compost material following full clean-down and disinfection of the bays and maturation areas in Sheds 2B and 3B to meet the Department of Agriculture requirements under the Animal Byproducts Regulations. The bays in sheds 2B would have the capacity to provide for in vessel aerobic composting and pasteurisation of compost material and Shed 3B would have capacity for maturation of the compost to be completed on aerated floors. All organic waste intake, processing, maturation and storage of finished compost would take place inside sheds 2B and 3B and would be physically separated from any biostabilised waste activities on site. Organic waste for the production of compost would be accepted through the doors on the western façade of Shed 2B and would be immediately transferred to the compost vessel bays.

The range of waste materials currently accepted at the composting facility, as outlined in Schedule A-2 of Waste Licence W0270-02 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 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 Milltown 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 Milltown 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 Milltown 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 Milltown 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 indicated potential nutrient impacts on the receiving Moyle River were less than the Regulatory Limits and indicated that discharged surface water from the Milltown 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 Milltown 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 Milltownmore 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 Milltown Composting Facility site. The wells identified are listed below.

Groundwater Wells on GSI Spatial Resources System within 2.5km of Milltown 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 Milltownmore 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 Milltown 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 Milltown 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 Milltown 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)

The composting and maturation sheds also have odour control measures in place at the facility that consists of extraction fans to remove air from inside the existing composting facility buildings, with air from shed 1 and the reception shed removed and treated in biofilter A2-1 located to the south of shed 1 and air from sheds 2, 3 and 4 removed and treated in biofilter A2-2 located to the north of shed 3. 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 (i.e., A2-3). 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 2.2 air changes per hour as calculated in the odour dispersion model completed as part of the Licence Review Application.

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 do not take place in composting bays or in maturing static piles.

D.1.2.6 Noise Emissions

Noise emission monitoring was completed at the Milltown 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 mins)} and 55 dB L_{Aeq (30 mins)} and noise readings at NSL1 in 2021 ranged between 49 dB L_{Aeq(30 mins)} and 55 dB L_{Aeq (30 mins)}. All daytime measurements at NSL1 in 2020 and 2021 were less than the EPA license 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 Milltown 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 Milltown 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 Milltown 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, Milltown 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
- Milltown 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 Milltown 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 Milltown.

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 (Rw) 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 oversized 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 bundled

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 Milltown (i.e., biofilters A2-1 and A2-2) 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 outlined in section 10.4.1 of the EIAR, "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 volume per hour has been effective in

controlling odour emissions and allows for a longer residence time for exhausted air in the biofilter media". The exhaust fans can be controlled and are typically run at 1 building volume air exchanges per hour for A2-1 and A2-2.

Intermittently the air extraction rate may be increased to 1.5 building volumes per hour for a short period to clear condensation emanating from the compost piles, but this would be irregular and only for a short period. The odour dispersion model completed as part of the licence review application allowed for typical highest extraction rate based on production experience the odour dispersion model initially calculated 1.5 air changes per hour for the sheds based on the volume of the existing buildings air extractions, see below.

- Biofilter A2-1 – air flow to biofilter at 1.5 air changes per hour would be approx. 26,561m³ per hour
- Biofilter A2-2 - air flow to biofilter at 1.5 air changes per hour would be approx. 55,950m³ per hour

For the immediate and near future the Milltown site will concentrate solely on the biostabilisation of organic fines at the facility and approximately 1/3 of organic fines material processed in Shed 1 would be transferred to the proposed new maturation sheds (i.e., sheds 2B and 3B). The odour dispersion model completed as part of the licence review application allowed for typical highest extraction rate based on production experience the odour dispersion model initially calculated 1.5 air changes per hour for the proposed new sheds (i.e. sheds 2B and 3B) based on the volume of the proposed buildings, see below.

- Biofilter A2-3 - air flow to biofilter at 1.5 air changes per hour would be approx. 48,960m³ per hour

This would mean that the designed volume of biofilter A2-3 would be more than large enough to treat typical volumes of air extracted from the new sheds, see Table below.

To allow for an extended worst-case scenario the odour dispersion modellers calculated the maximum air flows to the biofilters (i.e., A2-1, A2-2 and A2-3) that would ensure that the odour concentrations modelled would still be below the acceptable limit of 1.5 OuE/m³ at the closest sensitive receptor. The calculated maximum air flows that can be exhausted through each biofilter to ensure compliance with the odour model are:

- A2-1 – 31,884m³/hr (maximum of 1.8 air changes per hour)
- A2-2 – 70,865m³/hr (maximum of 1.9 air changes per hour)
- A2-3 – 71,600m³/hr (maximum of 2.2 air changes per hour)

The revised air flows to the biofilters are well above the existing operational air exhaust flows (i.e., 1 air exchange per hour) to the biofilters that provide good abatement of odour from the facility sheds. The maximum air flows outlined above (i.e., 31,884m³/hr for A2-1, 70,865m³/hr for A2-2 and 71,600m³/hr for A2-3) will be the final maximum volumes exhausted to the biofilter units.

To allow for significant residence time for extracted air in the biofilter medium the design size of the proposed third biofilter (A2-3) is based on 2.2 air changes per hour within shed 2B and shed 3B and is based 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 A2-3 Proposed Size and Capacity and Exhaust Air Retention Time for Biofilter A2-3

Building Volume		Volume (m ³)
Sheds 2B and 3B Volume		32,640
TOTAL		32,640
Air Volume to be Treated in Biofilter	2.2 x Air changes per hour in Shed 2B and Shed 3B	71,600
Air volume arriving at the biofilter	71,600	m ³ /hr
	19.88	m ³ /s
Biofilter surface area	485	m ²
Calculated Speed of Air through Filter	0.04099	m/s
Media Depth	1.90	m
Residence time in media	46.35	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 Milltown 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 Milltown Composting site in Milltownmore, 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.

Milltown 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. Milltown 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 Milltown 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.