

Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive under the Environmental Permitting (England & Wales) Regulations 2016 (as amended)

Decision document recording our decision-making process following review of a permit

The Permit number is: EPR/GP3930DF
The Operator is: Envar Composting Limited
The Installation is: Envar Composting Facility
This Variation Notice number is: EPR/GP3930DF/V004

What this document is about

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication by the European Commission of updated decisions on BAT Conclusions.

We have reviewed the permit for this installation against the revised BAT Conclusions for the Waste Treatment industry sector published on 10 August 2018 in the Official Journal of the European Union. In this decision document, we set out the reasoning for the consolidated variation notice that we have issued.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. This review has been undertaken with reference to the decision made by the European Commission establishing Best Available Techniques (BAT) Conclusions (BATc) for Waste Treatment as detailed in document reference C(2018) 5070. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position. It also provides a justification for the inclusion of any specific conditions in the permit that are in addition to those included in our generic permit template.

As well as considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. Where this has not already been done, it also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and with other permits issued to Installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document, we

therefore address only our determination of substantive issues relating to the new BAT Conclusions.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

How this document is structured

1. Our decision
2. How we reached our decision
3. The legal framework
4. Annex 1 – Review of operating techniques within the Installation against BAT Conclusions.
5. Annex 2 – Review and assessment of changes that are not part of the BAT Conclusions derived permit review
6. Annex 3 – Improvement Conditions

1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow the Operator to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice that updates the whole permit.

We consider that, in reaching our decision, we have taken into account all relevant considerations and legal requirements and that the varied permit will ensure that a high level of protection is provided for the environment and human health.

The Consolidated Variation Notice contains many conditions taken from our standard Environmental Permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the Operator for the operation of their installation, and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

2 How we reached our decision

2.1 Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 61(1) of the Environmental Permitting (England and Wales) Regulations 2016 (a Regulation 61 Notice) on 19 July 2019 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Notice required that where the revised standards are not currently met, the Operator should provide information that:

- describes the techniques that will be implemented before 17 August 2022, which will then ensure that operations meet the revised standards, or
- justifies why standards will not be met by 17 August 2022, and confirmation of the date when the operation of those processes will cease within the Installation or an explanation of why the revised BAT standard is not applicable to those processes, or
- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised standards described in the BAT Conclusions.

Where the Operator proposed that they were not intending to meet a BAT standard that also included a BAT Associated Emission Level (BAT-AEL) described in the BAT Conclusions Document, the Regulation 61 Notice required that the Operator make a formal request for derogation from compliance with that BAT-AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 61 Notice response from the Operator was received on 9 December 2019.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 61 Notice response that appears to be confidential in relation to any party.

2.2 Review of our own information in respect to the capability of the Installation to meet revised standards included in the BAT Conclusions document

Based on our records and previous experience in the regulation of the installation, we consider that the Operator will be able to comply with the techniques and standards described in the BAT Conclusions other than for those techniques and requirements described in BAT Conclusion 1, 2, 3, 6, 7, 8, 19, 20, 23, 34, 35 and 36. In relation to these BAT Conclusions, we do not fully agree with the Operator in respect of their current stated capability as recorded in their Regulation 61 Notice response. We have therefore included Improvement Conditions 1 to 6 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered before 17 August 2022.

3 The legal framework

The Consolidated Variation Notice will be issued, under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED;
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Consolidated Variation Notice, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

Annex 1: decision checklist regarding relevant BAT Conclusions

BAT Conclusions for the waste treatment sector were published by the European Commission on 10/08/2018. There are 53 BAT Conclusions but not all of them will be relevant to the installation. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the Consolidated Variation Notice.

The overall status of compliance with the BAT Conclusions is indicated in the table as:

NA – Not Applicable

CC – Currently Compliant

FC – Compliant in the future (within 4 years of publication of BAT conclusions)

NC – Not Compliant

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
1	<p>In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the following features:</p> <ol style="list-style-type: none"> I. commitment of the management, including senior management; II. definition, by the management, of an environmental policy that includes the continuous improvement of the environmental performance of the installation; III. planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment; IV. implementation of procedures paying particular attention to: <ol style="list-style-type: none"> (a) structure and responsibility, (b) recruitment, training, awareness and competence, (c) communication, (d) employee involvement, (e) documentation, (f) effective process control, (g) maintenance programmes, (h) emergency preparedness and response, 	FC	<p>The Operator provided a summary of their environmental management system (EMS) and evidence of accredited to ISO 14001:2015 and ISO 9001:2015 standards. The Certificate of Approval covering both ISO 14001 and 9001 expired in November 2019.</p> <p>The certificate covers:</p> <ul style="list-style-type: none"> • The site location and layout • An overview of the treatment process • Process management • Environmental Management • Environmental Accountability <p>Separate odour and accident management plans have been provided.</p> <p>The EMS document does not cover all of the points numbered I-XII relevant to this BAT Conclusion. In particular:</p> <ol style="list-style-type: none"> i. More detail is required in the main EMS

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	<p>(i) safeguarding compliance with environmental legislation;</p> <p>V. checking performance and taking corrective action, paying particular attention to:</p> <p>(a) monitoring and measurement (see also the JRC Reference Report on Monitoring of emissions to air and water from IED installations – ROM),</p> <p>(b) corrective and preventive action, recruitment, training, awareness and competence,</p> <p>(c) maintenance of records,</p> <p>(d) independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained</p> <p>VI. review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness;</p> <p>VII. following the development of cleaner technologies;</p> <p>VIII. consideration for the environmental impacts from the eventual decommissioning of the plant at the stage of designing a new plant, and throughout its operating life;</p>		<p>document;</p> <p>iii. Information has not been provided;</p> <p>iv. Points a, b, c, d, e, g, h, and i are not addressed sufficiently in the EMS;</p> <p>v. Point 6, no evidence of auditing provided other than for the PAS 100 certification.</p> <p>vii. Not included in EMS</p> <p>viii. Not included in EMS</p> <p>ix. Not included in EMS</p> <p>We have included Improvement condition 1 to ensure the Operator demonstrates full compliance with BAT point 1.</p> <p><u>Environment Agency assessment</u></p> <p>We are satisfied that the Installation will be future compliant with BATc 1. Improvement condition 1 has been included in the permit</p>

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	IX. application of sectoral benchmarking on a regular basis; X. waste stream management (see BAT 2); XI. an inventory of waste water and waste gas streams (see BAT 3); XII. residues management plan (see description in Section 6.5); XIII. accident management plan (see description in Section 6.5); XIV. odour management plan (see BAT 12) XV. noise and vibration management plan (see BAT 17).		to achieve compliance (see Annex 3).
2	In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques listed below: (a) Set up and implement waste characterisation and pre-acceptance procedures; (b) Set up and implement waste acceptance procedures; (c) Set up and implement a waste tracking system and inventory; (d) Set up and implement an output quality management system; (e) Ensure waste segregation; (f) Ensure waste compatibility prior to mixing or blending of waste;	FC	The Operator has provided a Waste Acceptance Criteria (WAC) document which lists permitted and prohibited wastes for biological treatment via in-vessel composting. All accepted waste will be subject to the Operator's WAC. Waste acceptance procedures are described in the Operator's Working Plan document. It covers:

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	(g) Sort incoming solid waste		<ul style="list-style-type: none"> • Administrative checks • Duty of Care checks • Waste Reception • Inspection for contamination • Waste storage and segregation <p>The Operator has also provided a pre-delivery questionnaire template for the use of waste suppliers. Relevant analysis and completion of the pre-delivery questionnaire will be requested before acceptance of new waste streams. Analysis reports of wastes unfamiliar to the site will always be requested.</p> <p>Representative samples will be obtained for any new waste streams to ensure they are suitable for treatment and permitted to be accepted.</p> <p>Only wastes and treatment methods defined by the Permit will be accepted.</p>

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			<p>All physical records will be kept in the weighbridge office. There are large enclosed waste reception facilities where waste materials can be off-loaded and thoroughly checked for type, quality and condition and if necessary, in the event of a rejection, then the vehicles can be back loaded.</p> <p>The weighbridge operator will keep a record of any loads that have been rejected according to the quality checks. The Load Rejection Sheet will also be completed and filed.</p> <p>The Operator reports that they use waste tracking software for inventory management. Full traceability and tracking are ensured for incoming and outgoing waste with all Waste Transfer Note information being recorded in the weighbridge waste matrix software.</p> <p>The Site operates to the PAS 100 Quality Protocol. Compost output is maintained in accordance with the PAS 100 Quality Protocol.</p> <p>Although we are satisfied that the Installation</p>

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			<p>is currently compliant with many of the elements of BATc 2, we have identified certain aspects which have to be addressed in order to confirm that the Installation is fully compliant with this BAT point:</p> <ul style="list-style-type: none"> • No information on waste compatibility prior to mixing or blending of waste has been provided. • The Operator accepts compost leachate from other sites for treatment via the effluent treatment plant which is regulated under a separate discharge consent. However, the waste acceptance procedures does not cover the acceptance of compost leachate. The Operator is required to provide information BATc 2 (a) to (g) on the compost leachate accepted from other sites. <p><u>Environment Agency assessment</u></p>

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			We are satisfied that the Installation will be future compliant with BATc 2. Improvement condition 1 has been included in the permit to achieve compliance (see Annex 3).
3	<p>In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features:</p> <p>(i) information about the characteristics of the waste to be treated and the waste treatment processes, including: (a) simplified process flow sheets that show the origin of the emissions; (b) descriptions of process-integrated techniques and waste water/waste gas treatment at source including their performances;</p> <p>(ii) information about the characteristics of the waste water streams, such as: (a) average values and variability of flow, pH, temperature, and conductivity; (b) average concentration and load values of relevant substances and their variability (e.g. COD/TOC, nitrogen species, phosphorus, metals, priority substances /micropollutants); (c) data on bioeliminability (e.g. BOD, BOD to COD ratio, Zahn-Wellens test, biological inhibition potential (e.g. inhibition of activated sludge)) (see BAT 52);</p>	FC	<p>The Operator has provided a copy of their waste water discharge consent, analytical data for their effluent monitoring and a template schedule for the inspection of the effluent treatment plant.</p> <p>The information provided is not sufficient to address the key elements of BATc 3 (i) to (iii). The site has odour abatement in the form of two biofilters and wet scrubbers, the waste gases from these plant have not been fully characterised. We have included Improvement condition 1 to address this deficiency.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation will be</p>

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	(iii) information about the characteristics of the waste gas streams, such as: (a) average values and variability of flow and temperature; (b) average concentration and load values of relevant substances and their variability (e.g. organic compounds, POPs such as PCBs); (c) flammability, lower and higher explosive limits, reactivity; (d) presence of other substances that may affect the waste gas treatment system or plant safety (e.g. oxygen, nitrogen, water vapour, dust).		future compliant with BATc 3. Improvement condition 1 has been included in the permit to achieve compliance (see Annex 3).
4	In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below: (a) Optimised storage location; (b) Adequate storage capacity; (c) Safe storage operation; (d) Separate area for storage and handling of packaged hazardous waste.	CC	Wastes accepted on site, these are dealt with in the Working Plan under Section 4.4 Waste Acceptance and Control Systems and Procedures. Closed circuit television systems are in place. Storage areas are well away from watercourses. Waste is offloaded within enclosed facilities. All floor surfaces where waste is stored or treated are sealed systems with effluent management. Liquid waste leachate from the external

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			<p>composting maturation process is stored in lagoons on site. The leachate is recirculated to maintain moisture levels in the compost with any excess treated via the on-site effluent treatment plant. The level of stored leachate is controlled by the discharge rate of the plant.</p> <p>There are no hazardous wastes received on site. The Operator describes the storage arrangements for hazardous wastes produced on-site such as spent lubricating oils and fluorescent tubes.</p> <p>Treatment of waste is started within 48 hours of receipt in accordance with the Animal By-Products Regulations.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 4.</p>
5	In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer	CC	The Operator sets out their procedures for the

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	<p>procedures.</p> <p>Handling and transfer procedures aim to ensure that wastes are safely handled and transferred to the respective storage or treatment. They include the following elements:</p> <ul style="list-style-type: none"> • handling and transfer of waste are carried out by competent staff; • handling and transfer of waste are duly documented, validated prior to execution and verified after execution; • measures are taken to prevent, detect and mitigate spills; • operation and design precautions are taken when mixing or blending wastes (e.g. vacuuming dusty/powdery wastes). <p>Handling and transfer procedures are risk-based considering the likelihood of accidents and incidents and their environmental impact.</p>		<p>handling and transfer of waste within their Working Plan document.</p> <p>All site operatives trained and certificated.</p> <p>Handling and transfer of waste is documented via Waste Transfer Notices and the weighbridge waste matrix system.</p> <p>All plant is designed for purpose, training, SOPs, and risk assessments are in place for all activities.</p> <p>This document describes:</p> <ul style="list-style-type: none"> • Staff training • Procedures for moving wastes • Spill preventative and detection <p>The Operator maintains a Site Spillage and Incident Response Plan which documents their procedures in place to react to spills.</p> <p><u>Environment Agency assessment</u></p>

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			We are satisfied that the Installation is currently compliant with BATc 5.
6	For relevant emissions to water as identified by the inventory of waste water streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).	FC	<p>The Operator holds a separate discharge consent for the on-site effluent treatment plant. The existing discharge consent (PRCNF/18042) contains emission limits for the following pollutants:</p> <ul style="list-style-type: none"> • Flow – 100 m³ per day • pH – 5.5 to 9 • biochemical oxygen demand – 20 mg/l • Ammoniacal nitrogen – 10 mg/l • Suspended solids – 30 mg/l • Mercury – 2 µg/l • No visible oil and grease • No emissions of arsenic, cadmium, chromium, copper, nickel, lead, zinc <p>The Operator has provided analytical data with their response to the Regulation 61 Notice as</p>

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			<p>evidence they are carrying out the monitoring requirements.</p> <p>We have included Improvement condition 1 to ensure the Installation demonstrates full compliance with BATc point 6 and provides the relevant process parameters monitored for each of the waste water streams identified in their inventory (requested for BATc 3).</p> <p>See also BATc 20 below.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation will be future compliant with BATc 6. Improvement condition 1 has been included in the permit to achieve compliance (see Annex 3).</p>
7	BAT is to monitor emissions to water with at least the frequency given in BATc 7, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of	FC	The existing discharge consent (PRCNF/1804) issued on 9 December 2009 contains monitoring requirements for biochemical

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	data of an equivalent scientific quality.		<p>oxygen demand (BOD), ammoniacal nitrogen, suspended solids and total and dissolved copper on a monthly basis.</p> <p>Further to the comments included for BATc 7 above, the Operator is required to address the requirements of BATc 7 for the waste water stream(s) identified in their inventory (required for BATc 3).</p> <p>We have included Improvement condition 1 to ensure the Installation demonstrates full compliance with BATc 7 and monitors emissions to water in accordance with the relevant frequency and standard.</p> <p>See also BATc 20 below.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation will be future compliant with BATc 7. Improvement</p>

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			condition 1 has been included in the permit to achieve compliance (see Annex 3).
8	BAT is to monitor channelled emissions to air with at least the frequency given in BATc 8, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	FC	<p>BATc 8 is applicable to the biofilters and scrubbers serving the in-vessel composting treatment operations for the PAS 100 compost and the CLO output.</p> <p>The Operator's Regulation 61 response referred to monitoring of H₂S, NH₃ and odour concentration. The Operator provided evidence of their annual stack monitoring last carried out in November 2017 for H₂S, NH₃ and odour concentration from the Biofilter 1, pre-scrubber. The monitoring results show that the biofilter can achieve the BAT-AEL for NH₃ but not the odour concentration.</p> <p>The permit has been updated as part of this review to add the relevant BAT-AELs for NH₃ and associated monitoring requirements for</p>

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			<p>H₂S and odour concentration, to implement the requirements of BATc 8 (also associated with BATc 34):</p> <p>The footnotes to the BATc 8 monitoring table state that the monitoring of NH₃ and H₂S can be used as an alternative to the monitoring of the odour concentration (and vice versa).</p> <p><u>Environment Agency assessment</u></p> <p>We are satisfied that the Installation will be future compliant with BATc 8. Improvement condition 1 has been included in the permit to achieve compliance (see Annex 3).</p>
10	<p>BAT is to periodically monitor odour emissions.</p> <p>Odour emissions can be monitored using:</p> <ul style="list-style-type: none"> • EN standards (e.g. dynamic olfactometry according to EN 13725 in order to determine the odour concentration or EN 16841-1 or -2 in order to determine the odour exposure); • when applying alternative methods for which no EN standards are available (e.g. estimation of odour impact), ISO, national or other 	CC	<p>The Operator provided a copy of their Odour Management Plan (OMP) in the Regulation 61 response. The OMP states that odour monitoring is carried out twice daily at routine upwind and downwind boundary locations by odour sniffing by a member of the site management or technical staff. Results are</p>

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	<p>international standards that ensure the provision of data of an equivalent scientific quality.</p> <p>The monitoring frequency is determined in the odour management plan (see BAT 12).</p>		<p>recorded in the site diary. We have considered the regulatory history of the site and are satisfied with this approach.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 10.</p>
11	<p>BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year.</p> <p>Monitoring includes direct measurements, calculation or recording, e.g. using suitable meters or invoices. The monitoring is broken down at the most appropriate level (e.g. at process or plant/installation level) and considers any significant changes in the plant/installation.</p>	CC	<p>The Operator records and reviews these requirements annually as a part of ISO 14001 and in accordance with the permit conditions.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 11.</p>
12	<p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p>	CC	<p>The Operator maintains a stand-alone site-specific Odour Management Plan detailing how the facility will be operated in order to prevent and minimise odour generation and</p>

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	<ul style="list-style-type: none"> • a protocol containing actions and timelines; • a protocol for conducting odour monitoring as set out in BAT 10; • a protocol for response to identified odour incidents, e.g. complaints; • an odour prevention and reduction programme designed to identify the source(s); to characterise the contributions of the sources; and to implement prevention and/or reduction measures. 		<p>comply with the permit conditions.</p> <p>Routine odour monitoring is described at daily, weekly, monthly, six monthly and annual frequencies.</p> <p>All waste processing, storage and transfer activities takes place within fully enclosed buildings. The facility infrastructure includes two biofilter systems and a chemical scrubber for the treatment of exhaust gases.</p> <p>The Operator carries out an odour and efficiency test annually on the biofilter via an external contractor to ensure the system is working at an optimum and the report submitted to the Environment Agency as a condition of the permit.</p> <p>The Operator has contingency measures in place to record and respond to odour incidents, including complaints.</p>

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			<p><u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 12.</p>
13	<p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given below:</p> <p>(a) Minimising residence times; (b) Using chemical treatment; (c) Optimising aerobic treatment</p>	CC	<p>The Operator reports that treatment of waste in storage is commenced within 48 hours prior to composting, to comply with ABP Requirements.</p> <p>The waste reception buildings and IVC tunnels are always under negative pressure with all extracted air passed through a scrubber and biofilter. BATc 13 (c) is not applicable to this installation.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 13.</p>
14	<p>In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an</p>	CC	<p>The Operator confirmed that they employ an appropriate combination of the following</p>

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	<p>appropriate combination of the techniques given below:</p> <ul style="list-style-type: none"> (a) Minimising the number of potential diffuse emission sources; (b) Selection and use of high-integrity equipment; (c) Corrosion prevention; (d) Containment, collection and treatment of diffuse emissions; (e) Dampening; (f) Maintenance; (g) Cleaning of waste treatment and storage areas; (h) Leak detection and repair (LDAR) programme 		<p>techniques to reduce diffuse emissions to air:</p> <p>(d) Containment, collection and treatment of diffuse emissions</p> <p>The Operator confirmed that the IVC uses an enclosed reception building (which includes fast acting roller doors) for the storage and handling of waste receipts. The Operator also stated that the building is maintained under negative pressure.</p> <p>(f) Maintenance</p> <p>The Operator confirmed they have a planned preventative maintenance (PPM) scheme in place for vehicles, plant and machinery.</p> <p>(g) Cleaning of waste treatment and storage areas</p> <p>The Operator confirmed that cleaning is undertaken for each bunker (bay) as material</p>

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			<p>is emptied from that bay. The floor is cleared, swept of debris then steam cleaned. Cleaning is carried out with doors closed and extraction system operating. Excess water is brushed off to drains. Drains are checked / cleared. Maintenance is undertaken while doors are closed and extraction system operating. Secondary air extraction system is used if required – Mobile fan and air trunking system.</p> <p>In addition, cleaning is undertaken for each area of the pad as each windrow of material is emptied from that area. The floor is cleared by loading shovel, swept of debris then cleaned using the road sweeper or wet cleaned by tractor driven brush. Excess water is brushed off to drains or sucked up by road sweeper. Drains are regularly checked / cleared.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation is</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			currently compliant with BATc 14.
15	<p>BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given below:</p> <p>(a) Correct plant design; (b) Plant management</p>	NA	<p>No flaring takes place at the Installation.</p> <p><u>Environment Agency assessment</u> We are satisfied that BATc 15 is not applicable to this Installation.</p>
16	<p>In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given below:</p> <p>(a) Correct design of flaring devices; (b) Monitoring and recording as part of flare management</p>	NA	<p>No flaring takes place at the Installation.</p> <p><u>Environment Agency assessment</u> We are satisfied that BATc 15 is not applicable to this Installation.</p>
17	<p>In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p>	NA	<p>The Operator has provided a comprehensive plant and equipment servicing and maintenance schedule. The site perimeter is checked twice daily and issues noted in the Site Diary. We have considered the regulatory</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
	<ul style="list-style-type: none"> I. a protocol containing appropriate actions and timelines; II. a protocol for conducting noise and vibration monitoring; III. a protocol for response to identified noise and vibration events, e.g. complaints; IV. a noise and vibration reduction programme designed to identify the source(s), to measure /estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and /or reduction measures. 		<p>history of the site and are satisfied that with this approach.</p> <p>The permit condition 3.4 ensures that the operator submits a noise management plan in the event emissions of noise and vibration are causing annoyance beyond the site boundary.</p> <p>As the applicability is restricted to cases where a noise or vibration nuisance at sensitive receptors is expected and/or has been substantiated then this is not applicable to the site”.</p> <p><u>Environment Agency assessment</u> We are satisfied that BATc 17 is not applicable to the Installation.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
18	<p>In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given below:</p> <ul style="list-style-type: none"> (a) Appropriate location of equipment and buildings; (b) Operational measures; (c) Low noise-equipment; (d) Noise and vibration equipment; (e) Noise attenuation 	CC	<p>The Operator reports that all IVC air-handling units are controlled by inverters and conform to EU standards. The in-vessel units are also installed within an insulated building thereby minimising noise emissions released from site operations.</p> <p>Furthermore, the site holds procedures for inspection and maintenance of equipment, closing the reception doors as well as ensuring noisy equipment is operated by experienced members of staff.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 18.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
19	<p>In order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques given below:</p> <ul style="list-style-type: none"> (a) Water management; (b) Water recirculation; (c) Impermeable surface; (d) Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels; (e) Roofing of waste storage and treatment areas; (f) Segregation of water streams (g) Adequate drainage infrastructure; (h) Design and maintenance provisions to allow detection and repair of leaks (i) Appropriate buffer storage capacity 	FC	<p>The Operator reports that the site is designed to ensure that all areas on which waste is treated and stored is underlain by an impermeable pavement of concrete.</p> <p>Leachate water is re-used within the IVC system for moisture management. Treated water from the ETP is re-used in composting process after testing.</p> <p>The lagoons are managed in conjunction with the effluent treatment plant (ETP). All surface runoff from these surfaces is channelled via sealed drainage to the wastewater lagoons.</p> <p>We consider that improvements are required at this installation to include:</p> <ul style="list-style-type: none"> • Design and maintenance provisions to allow detection and repair of leaks, in particular with respect to impermeable

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			<p>surfaces on site and the lagoons.</p> <p>Clear segregation of water streams i.e. separation of uncontaminated site water streams from waste water that requires treatment. The site drainage plan does not provide clear description of water separation on site. These should be clearly marked in an updated water drainage plan.</p> <p>We have included an improvement condition 1 requiring a review of impermeable surface BATc19 (c) and segregation of water streams BATc 19(f). See also BATc 35.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation will be future compliant with BATc 19. Improvement condition 1 has been</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			included in the permit to achieve compliance (see Annex 3).
20	<p>In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques given below:</p> <p>Preliminary and primary treatment, e.g.</p> <ul style="list-style-type: none"> (a) Equalisation (b) Neutralisation (c) Physical separation, e.g. screens, sieves, grit separators, grease separators, oil-water separation or primary settlement tanks <p>Physico-chemical treatment, e.g.</p> <ul style="list-style-type: none"> (d) Adsorption (e) Distillation /rectification (f) Precipitation (g) Chemical oxidation (h) Chemical reduction (i) Evaporation (j) Ion exchange (k) Stripping 	FC	<p>The Operator holds a separate discharge consent for the on-site effluent treatment plant. The existing discharge consent (PRCNF/18042) contains emission limits for the following pollutants:</p> <ul style="list-style-type: none"> • Flow – 100 m³ per day • pH – 5.5 to 9 • BOD – 20 mg/l • Ammoniacal nitrogen – 10 mg/l • Suspended solids – 30 mg/l • Mercury – 2 µg/l • No visible oil and grease • No emissions of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Zinc

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
	<p>Biological treatment, e.g. (l) Activated sludge process (m) Membrane bioreactor (n) Nitrification / denitrification when the treatment includes a biological treatment</p> <p>Solids removal, e.g. (o) Coagulation and flocculation (p) Sedimentation (q) Filtration (e.g. sand filtration, microfiltration, ultrafiltration) (r) Flotation</p> <p>See also: Table 6.1: BAT-associated emission levels (BAT-AELs) for direct discharges to a receiving water body</p> <p>See also: Table 6.2: BAT-associated emission levels (BAT-AELs) for indirect discharges to a receiving water body</p>		<p>Some emission limits in the existing discharge consent appears to be tighter than the BAT-AELs. However, only the parameters below are being currently monitored on site:</p> <ul style="list-style-type: none"> • Flow – 100 m³ per day • BOD – 20 mg/l • Ammoniacal nitrogen – 10 mg/l • Suspended solids – 30 mg/l • No visible oil and grease <p>We have included the following parameters in BATc 20 Table 6.1 which are not currently monitored on site:</p> <ul style="list-style-type: none"> • Total organic carbon (TOC) – 60 mg/l • Chemical oxygen demand (COD) – 180 mg/l • Total nitrogen – 25 mg/l • Total phosphorus – 2 mg/l

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			<p>We have included Improvement condition 1 to ensure the Installation demonstrates full compliance with BATc point 20 Table S6.1 and provides the relevant process parameters monitored for each of the waste water streams identified in their inventory (requested for BATc 3). See also BATc 6 and 7 above.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation will be future compliant with BATc 20. Improvement condition 2 has been included in the permit to achieve compliance (see Annex 3).</p>
21	<p>In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below, as part of the accident management plan (see BAT 1):</p> <p>(a) Protection measures;</p>	CC	<p>The operator has a structured, formal Emergency Preparedness and the Accident & Incident Response Plans. This includes the three techniques given (a) to (c).</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
	(b) Management of incidental /accidental emissions; (c) Incident /accident registration and assessment system		The site, has extensive coverage by CCTV and is also patrolled by on site security personnel in addition to security fencing. <u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 21.
22	In order to use materials efficiently, BAT is to substitute materials with waste. Waste is used instead of other materials for the treatment of wastes (e.g. waste alkalis or waste acids are used for pH adjustment, fly ashes are used as binders).	NA	The Operator states that this BATc 22 is not feasible in this process. Few materials are used on site, and where they are there is not a suitable waste alternative. <u>Environment Agency assessment</u> We are satisfied that BATc 22 is not applicable to this Installation.
23	In order to use energy efficiently, BAT is to use both of the techniques given below:	FC	The Operator has provided evidence that they record the appropriate energy efficiency figures and KPIs. Energy usage is a

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
	(a) Energy efficiency plan; (b) Energy balance record		<p>performance parameter that has to be reported on annually to the Environment Agency as a condition in the existing permit. The Regulation 61 Response addresses energy efficiency but no evidence of a formal energy efficiency plan was provided. Therefore improvement condition 1 has been included to require the production of an energy efficiency plan.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation will be future compliant with BATc 23. Improvement condition 1 has been included in the permit to achieve compliance (see Annex 3).</p>
24	<p>In order to reduce the quantity of waste sent for disposal, BAT is to maximise the reuse of packaging, as part of the residues management plan (see BAT 1).</p> <p>Packaging (drums, containers, IBCs, pallets, etc.) is reused for containing waste, when it is in good condition and sufficiently clean, depending on a compatibility</p>	NA	<p>The operator states no packaging is used, therefore BAT 24 is not applicable to this site.. We agree with this assessment.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
	check between the substances contained (in consecutive uses). If necessary, packaging is sent for appropriate treatment prior to reuse (e.g. reconditioning, cleaning).		<p><u>Environment Agency assessment</u> We are satisfied that BATc 24 is not applicable to this Installation.</p>
33	<p>In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input.</p> <p>The technique consists of carrying out the pre-acceptance, acceptance and sorting of the waste input (see BAT 2) so as to ensure the suitability of the waste input for the waste treatment, e.g. in terms of nutrient balance, moisture or toxic compounds which may reduce the biological activity.</p>	CC	<p>The Operator has provided relevant documents detailing waste acceptance procedures for their biological treatment processes. Acceptance criteria are covered in their Working Plan, Pre-Delivery Questionnaire and PAS 100 Quality Protocol.</p> <p>Please see BATc 2 above which provides details on the waste inputs, acceptance checks and sorting procedures in place to ensure the waste input is suitable for the treatment process. The permitted waste types are restricted only to those suitable for treatment by in-vessel composting.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation is</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			currently compliant with BATc 33.
34	<p>In order to reduce channelled emissions to air of dust, organic compounds and odorous compounds, including H₂S and NH₃, BAT is to use one or a combination of the techniques given below:</p> <p>(a) Adsorption; (b) Biofilter; (c) Fabric filter; (d) Thermal oxidation; (e) Wet scrubbing</p> <p>See also: Table 6.7: BAT-associated emission levels (BAT-AELs) for channelled NH₃, odour, dust and TVOC emissions to air from the biological treatment of waste.</p>	CC (BATc 34) FC (BATc34, Table 6.7)	<p>The site uses a combination of wet scrubbers and biofilters to reduce the channelled emissions of dust, organic compounds and odours. The Operator has provided reports of efficiency testing carried out on the biofilters and scrubbers.</p> <p>The Operator confirmed that the following techniques are employed to reduce channelled emissions to air from the IVC activity:</p> <ul style="list-style-type: none"> • Biofilter, BATc 34(a) • Acid scrubber (wet scrubber) which feeds into a biofilter, BATc 34(e) <p>We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 34.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			<p>We have set a BAT-AEL for ammonia as specified in the Waste Treatment BREF and BAT Conclusions. Improvement condition (IC2) has been included in the permit to achieve compliance. The operator is required to demonstrate compliance with the ammonia BAT-AEL by the compliance date, 17 August 2022.</p> <p>In addition to the ammonia BAT-AEL, we have inserted the requirement to monitor odour concentration, hydrogen sulphide and ammonia on a 6-monthly frequency in Table S3.4 (process monitoring).</p> <p>As part of the Environment Agency approach to reduce emissions in the biowaste treatment sector, we have included the following improvement condition:</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			<p>Improvement condition 7 (IC7) requires the operator to review abatement plant on site, in order to determine whether existing measures have been effective and adequate to prevent and /or minimise emissions released to air. Where further improvements are identified, the operator is required to implement these measures.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 34.</p> <p>We are satisfied that the Installation will be future compliant with BATc 34, Table 6.7. Improvement condition 2 has been included in the permit to achieve compliance (see Annex 3).</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
35	<p>In order to reduce the generation of waste water and to reduce water usage, BAT is to use all of the techniques given below:</p> <ul style="list-style-type: none"> (a) Segregation of water streams; (b) Water recirculation; (c) Minimisation of the generation of leachate 	FC	<p>The Operator states that water is harvested and recycled where possible. Lagoon 4 is purely for the collection of harvested roof water for use back in the composting process and not for receiving “dirty” water. This takes roof water from the whole of the transfer and treatment building.</p> <p>Water management and the associated processes are described in the Operator’s Leachate Management Plan and EMS.</p> <p>The site drainage plan does not provide clear description of water separation on site. These should be clearly marked in an updated water drainage plan.</p> <p>Process improvements will be covered in BATc 19 where we have included Improvement condition 1.</p> <p><u>Environment Agency assessment</u></p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			We are satisfied that the Installation will be future compliant with BATc 35. Improvement condition 1 has been included in the permit to achieve compliance (see Annex 3).
36	<p>In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters.</p> <p>Monitoring and/or control of key waste and process parameters, including:</p> <ul style="list-style-type: none"> • waste input characteristics (e.g. C to N ratio, particle size); • temperature and moisture content at different points in the windrow; • aeration of the windrow (e.g. via the windrow turning frequency, O₂ and/or CO₂ concentration in the windrow, temperature of air streams in the case of forced aeration); • windrow porosity, height and width. 	FC	<p>The Operator provided example screenshots of monitoring data and the Compost Manager software. Some information is also included in the OMP and EMS.</p> <p>Monitoring and control of treatment process parameters have not been adequately described. We would expect this to be clearly set out in the operational documentation. This would include a detailed description of process parameters, monitoring and appropriate action levels if the specified criteria are not met. There is no detailed description of how porosity or C:N ration of waste inputs are assessed.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			<p>We have included Improvement condition 1 to ensure the Operator addresses these deficiencies and the Installation demonstrates full compliance with BATc 36.</p> <p><u>Environment Agency assessment</u> We are satisfied that the Installation will be future compliant with BATc 36. Improvement condition 1 has been included in the permit to achieve compliance (see Annex 3).</p>
37	<p>In order to reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps, BAT is to use one or both of the techniques given below:</p> <p>(a) Use of semi permeable membrane covers; (b) Adaptation of operations to the meteorological conditions</p>	CC	<p>The Operator does not use semi-permeable membranes to cover the windrows but consideration is given to the adaptation of site operations to meteorological conditions. The Operator confirmed that they use the following technique in the site OMP as evidence of meeting BATc 37.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			<p>There is an automatic recording system on site. This system is located at the site operations building and is also remotely accessible, which allows the site staff to monitor the weather and any trigger conditions which informs operations undertaken on site. Local weather data is also accessed via the internet when required.</p> <p>The site manager and staff operatives undertake daily weather checks to ensure that any abnormal weather conditions can be foreseen as much as possible and contingency arrangements can be put in place prior to any problem occurring on site. In the event that the site has to be closed due to severe weather conditions deliveries will be diverted to an alternative suitably authorised site for either recovery or disposal.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
			<u>Environment Agency assessment</u> We are satisfied that the Installation is currently compliant with BATc 37.
38	<p>In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters.</p> <p>This includes monitoring and/or control of key waste and process parameters:</p> <ul style="list-style-type: none"> • pH and alkalinity of the digester feed; • digester operating temperature; • hydraulic and organic loading rates of the digester feed; • concentration of volatile fatty acids (VFA) and ammonia within the digester and digestate; • biogas quantity, composition (e.g. H₂S) and pressure; • liquid and foam levels in the digester. 	NA	<p>The IVC activity undertaken is an aerobic biological treatment process.</p> <p><u>Environment Agency assessment</u> We are satisfied that BATc 38 is not applicable to this Installation.</p>
39	<p>In order to reduce emissions to air, BAT is to use both of the techniques given below:</p>	NA	<p>The IVC activity does not include mechanical biological treatment.</p>

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the Operator to demonstrate compliance with the BAT Conclusion requirement
	(a) Segregation of the waste gas streams; (b) Recirculation of waste gas		<p><u>Environment Agency assessment</u> We are satisfied that BATc 39 is not applicable to this Installation.</p>

Annex 2: Review and assessment of changes that are not part of the BAT Conclusions derived permit review

Existing Medium Combustion Plant

The site has two boilers which are fuelled by Grade A waste wood. Each boiler has an individual thermal input of 0.9 MWth. The combustion of solid biomass in a boiler of this size is a Part B process. Since the boilers are located within a Part A(1) Installation, they will be regulated by the Environment Agency. We have amended the emission limit value for NO_x in accordance with the Local Authority Part B Guidance Document (Environmental permitting technical guidance PG5/1(20), March 2020).

Bioaerosols monitoring requirements

The Operator provided information regarding bioaerosols monitoring in their response to the Regulation 61 Notice. We carried out an assessment of the site location and the distance of site processes from sensitive receptors as part of this determination. There are external site operational processes within 250 metres of a sensitive receptor. The current permit has the appropriate bioaerosols monitoring requirements which is in accordance with our guidance TGN M9 Environmental monitoring of bioaerosols at regulated facilities (version 2, July 2018).

Soil & groundwater risk assessment (baseline report)

The IED requires that the Operator of any IED installation using, producing or releasing “relevant hazardous substances” (RHS) shall, having regarded the possibility that they might cause pollution of soil and groundwater, submit a “baseline report” with its permit application. The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the regulated facility and at cessation of activities. It must enable a quantified comparison to be made between the baseline and the state of the site at surrender.

At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site’s current or approved future use. To do this, the Operator has to submit a surrender application to us, which we will not grant unless and until we are satisfied that these requirements have been met.

The Operator submitted a site condition report ADAS-SCR-01 v2.0 dated 04/08/2008 during the permit variation application received on 12/04/2013. The site condition report included a report on the baseline conditions as required by Article 22. We reviewed that report and considered that it adequately described the condition of the soil and groundwater at that time.

The Operator submitted a summary report which referenced the site condition report and baseline report. We have reviewed the information and we consider that that it adequately describes the condition of the soil and groundwater. Consequently, we are satisfied that the baseline condition has not changed.

Waste types

We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility. We are satisfied that the Operator can accept these wastes for the following reasons:

- they are suitable for the proposed activities
- the proposed infrastructure is appropriate
- the environmental risk assessment is acceptable.

Other wastes (non-standard waste codes)

The following wastes in the current permit are not specified in the our revised biowaste treatment permit templates. We have retained these wastes in the current permit provided the Operator undertakes a detailed characterisation of the waste prior to acceptance for treatment at the site in accordance with BATc 2.

Waste code	Description
02 01 01	sludges from washing and cleaning
02 02 04	sludges from on-site effluent treatment
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10
04 01 01	fleshings and lime split wastes
04 02 21	waste from unprocessed textile fibres
07 05 14	solid wastes other than mentioned in 17 05 13
17 02 01	wood
19 08 05	sludges from treatment of urban waste water
20 01 38	wood other than that mentioned in 20 01 37
20 03 01	mixed municipal waste

We consider that the Operator will be future compliant with BATc 2a. Improvement condition 3 has been included in the permit to achieve compliance (see Improvement condition in Annex 3 of this decision document).

We have excluded the following waste stream ending with “99” code because more suitable waste codes are already in the European Waste Catalogue (EWC) that accommodate the waste described:

Waste code	Description
02 07 99	wastes not otherwise specified (malt husks, malt sprouts, yeast and yeast-like residues only)
19 05 99	wastes not otherwise specified

Our technical guidance on waste classification WM3 specifically sets out clear instructions for the use of the European Waste Catalogue (EWC), particularly with regard to “99” codes.

The guidance specify that the Operator must:

- Identify the source generating the waste in chapters 01 to 12 or 17 to 20 and identify the appropriate six-digit code of the waste (excluding codes ending with 99 of these chapters).
- If no appropriate waste code can be found in chapters 01 to 12 or 17 to 20, the chapters 13, 14 and 15 must be examined to identify the waste.
- If none of these waste codes apply, the waste must be identified according to chapter 16.
- If the waste is not in chapter 16, the 99 code (wastes not otherwise specified) must be used in the section of the list corresponding to the activity identified in step one as a last resort.

We made this decision with respect to “99” codes in accordance with the Technical Guidance WM3: Waste Classification – Guidance on the classification and assessment of waste [1st Edition v1.1, May 2018].

Secondary containment and storage infrastructure

We asked the Operator via the Regulation 61 Notice to:

- describe any secondary containment and whether it currently meets the relevant standard in the “Containment systems for the prevention of pollution (C736)” report, where there are above-ground storage or primary containment on site; or
- explain why the current site infrastructure design and construction is fit for purpose, where it is concluded that secondary containment is not required or does not need to meet the standards in the C736 report, to enable a baseline standard so as to establish a quantified comparison; and
- describe how the construction of the lagoons meets the relevant standard in CIRIA C736 report, where there are storage lagoons used for the storage of digestate on site.

The Operator did not provide any information in response to secondary containment and storage lagoons.

We have therefore set an Improvement Conditions (IC3 and IC4) in the permit to address this aspect of the permit review (see Annex 3).

Primary containment (tank /vessels used for storage and/or treatment activities)

We assessed primary containment as part of the permit review. This information was not requested in the Regulation 61 Notice issued to the Operator. However, it was considered prudent to address this aspect as part of the permit review process. In this instance, the required information relating to the review of primary containment infrastructure against CIRIA C598 was not previously submitted to the Environment Agency, nor was it included in the supporting documentation submitted by the Operator in their Regulation 61 response.

We have therefore set an Improvement Condition (IC5) in the permit to address this aspect of the permit review (see Annex 3).

Lagoon cover and digestate storage capacity

We asked the Operator via the Regulation 61 Notice to:

- confirm if storage lagoons are covered to prevent emission loss; and
- confirm whether or not the operational lagoon storage capacity provides a minimum of two months storage

The Operator did not provide any information in response to lagoon cover arrangement and operational digestate storage capacity on site.

We have therefore set an Improvement Condition (IC6) in the permit to address this aspect of the permit review (see Annex 3).

Annex 3: Improvement Conditions

Based on the information in the Operator’s Regulation 61 Notice response and our own records of the capability and performance of the installation at this site, we consider that we need to set improvement conditions so that the outcome of the techniques detailed in the BAT Conclusions are achieved by the installation. These improvement conditions are set out below - justifications for them is provided at the relevant section of the decision document (Annex 1 or Annex 2).

If the consolidated permit contains existing improvement conditions that are not yet complete or the opportunity has been taken to delete completed improvement conditions then the numbering in the table below will not be consecutive as these are only the improvement conditions arising from this permit variation.

Improvement Condition Requirements		
Reference	Requirement	Date
Improvement condition for progress report to achieve Narrative BAT		
IC1	<p>The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the ‘Narrative’ BAT where BAT is currently not achieved, but will be achieved before 17 August 2022. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1) Methodology for achieving BAT 2) Associated targets /timelines for reaching compliance by 17 August 2022 3) Any alterations to the initial plan (in progress reports). <p>The report shall address the BAT Conclusions for Waste Treatment with respect to BAT 1, 2, 3, 6, 7, 8, 19, 23, 35 and 36.</p> <p>Refer to BAT Conclusions for a full description of the BAT requirement.</p>	<p>Progress reports at six monthly intervals from date of permit issue:</p> <p>09/08/2021 09/02/2022 09/08/2022</p>
Improvement condition for progress report to achieve BAT-AELs		
IC2	<p>The operator shall submit, for approval by the Environment Agency, a report setting out progress to achieving the Best Available Techniques Conclusion Associated Emission Levels (BAT-AELs) where BAT is currently not achieved, but will be achieved before 17 August 2022. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1) Current performance against the BAT-AELs. 2) Methodology for reaching the BAT-AELs. 3) Associated targets /timelines for reaching compliance by 17 August 2022. 	<p>Progress reports at six monthly intervals from date of permit issue:</p> <p>09/08/2021 09/02/2022 09/08/2022</p>

Improvement Condition Requirements		
Reference	Requirement	Date
	<p>4) Any alterations to the initial plan (in progress reports).</p> <p>The report shall address the BAT Conclusions for Waste Treatment with respect to the following:</p> <ul style="list-style-type: none"> • BAT 20 Table 6.1 (compliance with BAT-AELs for direct discharges to a receiving water body) • BAT 34 Table 6.7 (compliance with BAT-AELs for channelled NH₃, odour, dust and TVOC emissions to air from the biological treatment of waste) <p>Refer to BAT Conclusions for a full description of the BAT requirement.</p>	
Improvement condition for secondary containment design		
IC3	<p>The operator shall submit a written 'secondary and tertiary containment plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of a review conducted, by a competent person, in accordance with the risk assessment methodology detailed within CIRIA C736 (2014) guidance, of the condition and extent of secondary and tertiary containment systems where all polluting liquids and solids are being stored, treated, and/or handled.</p> <p>The review shall consider, but not limited to, the storage vessels, bunds, loading and unloading areas, transfer pipework/pumps, temporary storage areas, and liners underlying the site. The plan must contain dates for the implementation of individual improvement measures necessary for the secondary and tertiary containment systems to adhere to the standards detailed/referenced within CIRIA C736 (2014) guidance, or equivalent.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	09/02/2022 or other date as agreed in writing with the Environment Agency
Improvement condition for storage lagoon design		
IC4	<p>The operator shall submit a written 'storage lagoon plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of a review conducted, by a competent person, in accordance with the risk assessment methodology detailed within CIRIA C736 (2014) guidance, of the condition and extent of the site lagoon(s) where compost leachate are being stored, treated, and/or handled.</p> <p>The review shall consider, but not limited to, the</p>	09/02/2022 or other date as agreed in writing with the Environment Agency

Improvement Condition Requirements		
Reference	Requirement	Date
	<p>lagoon cover, transfer pipework/pumps, and liners underlying the storage lagoon. The plan must contain dates for the implementation of individual improvement measures necessary for the storage lagoon to adhere to the standards detailed/referenced CIRIA C736 (2014) guidance, or equivalent.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	
Improvement condition for primary containment		
IC5	<p>The operator shall submit a written 'primary containment plan' and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of a review conducted, by a competent person, and shall compare the design specification of primary containment systems where all polluting liquids and solids are being stored, treated, and/or handled against the design standards within CIRIA C598 guidance or equivalent.</p> <p>The review shall include:</p> <ul style="list-style-type: none"> • physical condition of all primary containment systems (storage and treatment vessels); • the suitability for providing primary containment when subjected to the dynamic and static loads caused by the vessels' contents; • any work required to ensure compliance with the standards set out in CIRIA C598 or equivalent; and • a preventative maintenance and inspection regime <p>The plan must contain dates for the implementation of individual improvement measures necessary for the primary containment to adhere to the standards detailed/referenced within CIRIA C598 guidance, or equivalent.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	<p>09/02/2022</p> <p>or other date as agreed in writing with the Environment Agency</p>
Improvement condition for lagoon cover and operational compost liquor storage capacity		
IC6	<p>The operator shall provide a written "compost liquor storage plan" and shall obtain the Environment Agency's written approval to it. The plan shall contain the results of a review of the current storage of compost liquor produced from site operations. The review shall examine site contingency arrangements in the event of closed landspreading periods, extreme weather conditions, site closure, disease</p>	<p>09/02/2022</p> <p>or other date as agreed in writing with the Environment Agency</p>

Improvement Condition Requirements		
Reference	Requirement	Date
	<p>outbreak etc.</p> <p>The storage plan shall include:</p> <ul style="list-style-type: none"> • Existing cover arrangements on storage lagoons used to store compost liquor to minimise odour and ammonia emissions; • Additional storage capacity on-site (at least 2 months storage) and storage capacity off-site; • Identification of alternative outlets for digestate and/or compost liquor – identify companies /permitted waste facilities that would be able to manage the digestate and/or liquor output(s), taking into account their permits and capacity constraints. <p>The plan shall be implemented in accordance with the Environment Agency’s written approval.</p>	
Improvement condition for review of effectiveness of abatement plant		
IC7	<p>The operator shall carry out a review of the abatement plant on site, in order to determine whether the measures have been effective and adequate to prevent and where not possible minimise emissions released to air including but not limited to odour and ammonia.</p> <p>The operator shall submit a written report to the Environment Agency following this review for assessment and approval.</p> <p>The report shall include but not limited to the following aspects:</p> <ul style="list-style-type: none"> • Full investigation and characterisation of the waste gas streams. • Abatement stack monitoring results (not limited to odour and ammonia) • Abatement process monitoring results (not limited to odour and ammonia) • Details of air quality quantitative impact assessment including modelling and a proposal for site-specific “action levels” (not limited to odour concentration, hydrogen sulphide and ammonia). • Odour monitoring results at the site boundary • Records of odour complaints and odour 	09/02/2022 or other date as agreed in writing with the Environment Agency

Improvement Condition Requirements		
Reference	Requirement	Date
	<p>related incidents</p> <ul style="list-style-type: none"> • Recommendations for improvement including the replacement or upgrading the abatement plant • Timescales for implementation of improvements to the abatement plant <p>The operator shall implement the improvements in line with the timescales as approved by the Environment Agency.</p>	