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/AP3193SV
The Operator is: Agripost Limited
The Installation is: Agripost Integrated Composting, Biogas and Recycling Facility
This Variation Notice number is: EPR/AP3193SV/V006

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 21/10/2019 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 (BAT Compliance Date), 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 standards are not applicable to those processes, or
- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised BAT 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 16/06/2020.

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 Conclusions 2, 8 and 10. 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 response to the Regulation 61 Notice.

In August 2018, the revised Waste Treatment BAT Conclusions was published. These Conclusions identify techniques that can be considered BAT and specify BAT associated emission limits (BAT-AELs) for waste treatment installations. The BAT Conclusions were required to be implemented within 4 years through permit review and variations, and through securing compliance with those variations, at existing waste treatment installations. The deadline for compliance was 17th August 2022.

We wrote to all biological waste treatment operators in June 2019 notifying them about the Waste Treatment BAT Conclusions and permit review process. We wrote again in July and August 2021, to remind operators of the BAT compliance date and that they should ensure that their sites complied with BAT by 17th August 2022. We consider we provided operators with sufficient time to undertake the necessary improvements on site to comply with BAT or vary their permits to reduce waste treatment tonnages and operate as waste facilities.

During the permit review process, we provided the operator with an opportunity to respond to the Regulation 61 Notice with supporting evidence and confirm that they will be able to comply with the improvements we require to ensure BAT and BAT-AELs would be met. In addition, the operator had the opportunity to comment on the draft permit as part of the permit review process. The operator has not objected to the BAT requirements as stated in the permit or stated that these cannot be met. We consider that they can and will be met. Consequently, we expect compliance with the new requirements including the BAT-AELs. We will take enforcement action where existing permitted activities are not compliant with BAT, in accordance with our enforcement and sanctions policy.

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 August 2018. There are 53 BAT Conclusions. 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 conclusion is indicated in the table as:

NA – Not Applicable
CC – Currently Compliant
NC – Not Compliant

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
1	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: 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: (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, (i) safeguarding compliance with environmental legislation;	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 11. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 1.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	V. checking performance and taking corrective action, paying particular attention to: (a) monitoring and measurement (see also the JRC Reference Report on Monitoring of emissions to air and water from IED installations – ROM), (b) corrective and preventive action, recruitment, training, awareness and competence, (c) maintenance of records, (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 VI. review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness; VII. following the development of cleaner technologies; 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; 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);		

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	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).		
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; (g) Sort incoming solid waste	**NC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 2. We have assessed the information provided. We are not satisfied that the operator has demonstrated compliance with BATc 2 part a. We have assessed the information provided in the site EMS. Although there is information relevant to compliance with BATc 2 in the submission, we consider that aspects of BATc 2 (a) have not been adequately addressed with respect to characterisation of the following non-standard waste streams: Anaerobic Digestion: EWC 02 03 02, 03 03 02, 03 03 08, 03 03 10, 04 01 01, 04 01 05, 04 01 07, 19 05 01, 19 05 02, 19 05 03, 20 01 38.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			In vessel composting: EWC 03 03 11, 04 01 01, 17 02 01, 19 12 07, 20 01 38. Open Windrows: EWC 02 02.01, 02 03 01, 02 06 01, 17 02 01, 19 06 03, 19 06 05, 19 08 05, 19 12 07, 20 01 38, 20 03 01. We have set out our approach to enforcement in Chapter 2 of this document. We shall undertake BAT compliance at this installation in accordance with our enforcement and sanctions policy.
3	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: (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;	**CC**	**<u>Environment Agency assessment</u>** The operator provided information to support compliance with BATc 3. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 3. Waste processes are detailed with flow diagrams in the EMS. Waste water and gas streams are subject to regular monitoring and

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	(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); (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).		a report provided to the EA when required (annual reporting and monitoring according to permit conditions). An extract from the pollution prevention measures document has been provided. This signposts to the information in other documents. EMS checked regularly by EA and last audited and approved on 02/04/2019. Latest version of EMS submitted and held by EA, version 9 dated 30/06/21.
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;	**CC**	**<u>Environment Agency assessment</u>** The operator provided information to support compliance with BATc 4. We have assessed the information provided. We are satisfied that

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	(d) Separate area for storage and handling of packaged hazardous waste.		the operator has demonstrated compliance with BATc 4. Storage of wastes is on impermeable ground with sealed drainage systems. SOP for composting and AD includes storage times and treatment stages including information on critical limits. Wastes are segregated and tracked. Storage is as far from sensitive receptors and handling is minimised. EA holds all approved plans and descriptions of waste flows, segregation and handling procedures within documents. Containment Audit, approved by EA Jan 2020.
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 procedures.	**CC**	**<u>Environment Agency assessment</u>** The operator provided information to support compliance with BATc 5. We have assessed the information provided. We are satisfied that

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	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: • 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). Handling and transfer procedures are risk-based considering the likelihood of accidents and incidents and their environmental impact.		the operator has demonstrated compliance with BATc 5. Information on waste handling is contained in the EMS and accident management plan. Staff training includes waste handling procedures and accident management. Information contained as part of EMS which is checked regularly by the EA and last audited and approved by the EA on 02/04/19. Latest version of EMS submitted and held by EA, version 9 dated 30/06/21.
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).	**NA**	**Environment Agency assessment** There are no emissions of waste process waters directly or indirectly to controlled waters. We are satisfied that BATc 6 does not apply to the installation.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
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 data of an equivalent scientific quality.	**NA**	**Environment Agency assessment** There are no emissions of waste process waters directly or indirectly to controlled waters. We are satisfied that BATc 7 does not apply to the installation.
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.	**NC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 8. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 8. Relevant emissions to air include emissions from the biofilter and CHP exhausts. Monitoring systems are documented and monitoring information contained as part of EMS which is checked regularly by the EA.

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			We have however additionally set a BAT-AEL for ammonia as specified in the Waste Treatment BREF and BAT Conclusions. In addition to the BAT-AEL, we have inserted the requirement to monitor odour concentration, hydrogen sulphide and ammonia on a 6-monthly frequency in Table S3.3 (process monitoring). We have set out our approach to enforcement in Chapter 2 of this document. We shall undertake BAT compliance at this installation in accordance with our enforcement and sanctions policy. See also BATc 34.
10	BAT is to periodically monitor odour emissions. Odour emissions can be monitored using:	**NC**	**<u>Environment Agency assessment</u>** The operator provided information to support compliance with BATc 10. We have assessed the information provided. We not satisfied that

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	• 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 international standards that ensure the provision of data of an equivalent scientific quality. The monitoring frequency is determined in the odour management plan (see BAT 12).		the operator has demonstrated compliance with BATc 10. The OMP as written in 2014 and reviewed in August 2019. The original OMP recommended that the OMP was reviewed annually or after major changes to operations. The operator needs to review the OMP based on the recommendations from this original OMP. We have set out our approach to enforcement in Chapter 2 of this document. We shall undertake BAT compliance at this installation in accordance with our enforcement and sanctions policy.
11	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. Monitoring includes direct measurements, calculation or recording, e.g. using suitable meters or invoices. The monitoring is broken down at the most	**CC**	**<u>Environment Agency assessment</u>** The operator provided information to support compliance with BATc 11. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 11.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	appropriate level (e.g. at process or plant/installation level) and considers any significant changes in the plant/installation.		Information contained as part of EMS which is checked regularly by the EA and last audited and approved by the EA on 02/04/19. Latest version of EMS submitted and held by EA, version 9 dated 30/06/21. Performance reports are submitted annually.
12	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: • 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.	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 12. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 12.
13	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:	**CC**	**Environment Agency assessment**

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	(a) Minimising residence times; (b) Using chemical treatment; (c) Optimising aerobic treatment		The operator provided information to support compliance with BATc 13. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 13. Digestate storage is covered under sealed membranes in a sealed tank. Storage of PAS110 and QP approved digestate is not under the scope of the permit but is stored in an open lagoon. Aerobic compost is processed according to a SOP and in accordance with PAS100 and managed to reduce odour potential as far as possible.
14	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 appropriate combination of the techniques given below: (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;	**CC**	**<u>Environment Agency assessment</u>** The operator provided information to support compliance with BATc 14. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 14.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	(e) Dampening; (f) Maintenance; (g) Cleaning of waste treatment and storage areas; (h) Leak detection and repair (LDAR) programme		Containment systems were audited and improvements made in 2018 / 2019. Systems designed and installed to high standard; operations monitored and maintained to a high standard in accordance with management plans. Systems enclosed where required. Pipelines are of stainless steel where required and checked and tested. Systems and containment as described in EMS Permit Application. Dust and mud levels on roads are low. Roads are dampened down in the summer and shredding / turning activities are not carried out in high winds on dry days, to prevent dust from being generated. Roads around site are concrete or tarmac rather than loose materials.
15	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:	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 15. We have assessed

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	(a) Correct plant design; (b) Plant management		the information provided. We are satisfied that the operator has demonstrated compliance with BATc 15. Gas recovery system available. Process controls in place to reduce gas production during times of maintenance or breakdown. Flare use is minimised and recorded and reported annually. Flaring of biogas additionally included in containment audit reviewed and approved by the EA in January 2018/2019.
16	In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given below: (a) Correct design of flaring devices; (b) Monitoring and recording as part of flare management	**CC**	**<u>Environment Agency assessment</u>** The operator provided information to support compliance with BATc 16. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 16. Flare design capacity adequate and never exceeds 10% of the year.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			Flaring use included in containment audit, 2018/2019 and additionally reviewed in AD desktop audit review in Jan 2021.
17	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: 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.	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 17. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 17. The site does not generate noise complaints. Noise Management Plan within EMS.
18	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:	**CC**	**Environment Agency assessment**

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	(a) Appropriate location of equipment and buildings; (b) Operational measures; (c) Low noise-equipment; (d) Noise and vibration equipment; (e) Noise attenuation		The operator provided information to support compliance with BATc 18. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 18. Techniques to reduce noise and vibrations emissions employed by include relocation of activities, enclosing activities, staff training, noise attenuation (rubber dampers, white noise sirens), low noise equipment and environmental screening. There is a planned preventative maintenance system as part of the containment audit in 2018/19. The site does not receive noise complaints and is in a rural location.
19	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:	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 19.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	(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		We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 19. Surface water is collected in a lined surface water lagoon which was checked as part of the containment audit in 2019. Some surface water is used within the AD operation. Surfaces are impermeable with sealed drainage. A drainage plan is available. Feedstock for the AD uses effluent from the IVC and some yard grey water. Water resource information is provided in the Energy and Resource Management document. Techniques used include water management (wash down procedures), impermeable surfaces (of whole waste treatment area), tank overflow/failure risk reducers (high level sensors, secondary containment, overflow pipes), roofing of storage areas, adequate

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			draining infrastructure (site drainage plan reviewed August 2019), leak detection.
20	In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques given below: ***Preliminary and primary treatment, e.g.*** (a) Equalisation (b) Neutralisation (c) Physical separation, e.g. screens, sieves, grit separators, grease separators, oil-water separation or primary settlement tanks ***Physico-chemical treatment, e.g.*** (d) Adsorption (e) Distillation /rectification (f) Precipitation (g) Chemical oxidation (h) Chemical reduction (i) Evaporation (j) Ion exchange (k) Stripping ***Biological treatment, e.g.***	**N/A**	**<u>Environment Agency assessment</u>** We are satisfied that BATc 20 does not apply to the installation. There are no emissions of waste waters either directly or indirectly to controlled waters

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	(l) Activated sludge process (m) Membrane bioreactor (n) Nitrification / denitrification when the treatment includes a biological treatment ***Solids removal, e.g.*** (o) Coagulation and flocculation (p) Sedimentation (q) Filtration (e.g. sand filtration, microfiltration, ultrafiltration) (r) Flotation See also: Table 6.1: BAT-associated emission levels (BAT-AELs) for direct discharges to a receiving water body See also: Table 6.2: BAT-associated emission levels (BAT-AELs) for indirect discharges to a receiving water body		
21	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):	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 21.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	(a) Protection measures; (b) Management of incidental /accidental emissions; (c) Incident /accident registration and assessment system		We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 21. An accident management plan is included within the EMS. This contains all information included in BAT 21. Non-conformances, plant issues and incidents are recorded including PAS non-conformances, rejected loads (on the waste acceptance register), maintenance work and plant issues are recorded on the AD daily check sheet, which is checked at the start of every shift for handover. Techniques used include protection measures (e.g. perimeter fencing, fire protection equipment as part of the fire prevention plan, emergency equipment), management of accidental emissions (e.g. liquid spills response, flood response, reviewed annually) and incident registration system (accident

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			management plan, accident and incident reporting forms).
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).	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 22. The site follows PAS 100 and PAS 110 and the relevant QP's to produce products. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 22.
23	In order to use energy efficiently, BAT is to use both of the techniques given below: (a) Energy efficiency plan; (b) Energy balance record	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 23. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 23. Energy and resource management plan included in the EMS and has been submitted

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			as part of this review, it includes an energy efficiency plan and an energy balance record.
24	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). Packaging (drums, containers, IBCs, pallets, etc.) is reused for containing waste, when it is in good condition and sufficiently clean, depending on a compatibility check between the substances contained (in consecutive uses). If necessary, packaging is sent for appropriate treatment prior to reuse (e.g. reconditioning, cleaning).	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 24. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 24. Most waste is delivered in bulk vehicles to site so there is no packaging. Some food waste is processed on the site, which is delivered packaged in plastic and/or card. This packaging is collected separately and sent to an approved energy from waste facility.
33	In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input. 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.	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 33. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 33.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			Waste acceptance and pre-acceptance measures are in place and assessed as part of BAT 2.
34	In order to reduce channelled emissions to air of dust, organic compounds and odorous compounds, including H_2S and NH_3, BAT is to use one or a combination of the techniques given below: (a) Adsorption; (b) Biofilter; (c) Fabric filter; (d) Thermal oxidation; (e) Wet scrubbing See also: Table 6.7: BAT-associated emission levels (BAT-AELs) for channelled NH_3, odour, dust and TVOC emissions to air from the biological treatment of waste.	**CC** **BATc 34, Table 6.7** **NC**	**<u>Environment Agency assessment</u>** The operator provided information to support compliance with BATc 34. Biofilters and scrubbers are installed at the facility. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 34. We have set a BAT-AEL for ammonia as specified in the Waste Treatment BREF and BAT Conclusions. We have set out our approach to enforcement in Chapter 2 of this document. We shall undertake BAT compliance at this installation in accordance with our enforcement and sanctions policy.

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			In addition to the BAT-AEL, we have inserted the requirement to monitor odour concentration, hydrogen sulphide and ammonia on a 6-monthly frequency in Table S3.3 (process monitoring). As part of the Environment Agency approach to reduce emissions in the biowaste treatment sector, we have included the following improvement condition: Improvement condition (IC4) 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. We have set out our approach to enforcement in Chapter 2 of this document. We shall

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			undertake BAT compliance at this installation in accordance with our enforcement and sanctions policy.
35	In order to reduce the generation of waste water and to reduce water usage, BAT is to use all of the techniques given below: (a) Segregation of water streams; (b) Water recirculation; (c) Minimisation of the generation of leachate	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 35. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 35. Leachate from IVC process is used as feedstock for the AD. Moisture content of the compost is optimised in order to enhance the process. Rainwater is reused for irrigation and/or spreading through deployment.
36	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.	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 36. We have assessed the information provided. We are satisfied that

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	Monitoring and/or control of key waste and process parameters, including: • 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, O_2 and/or CO_2 concentration in the windrow, temperature of air streams in the case of forced aeration); • windrow porosity, height and width.		the operator has demonstrated compliance with BATc 36. Key parameters all monitored and controlled as required and in accordance with PAS100/PAS110, Quality protocols.
37	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: (a) Use of semi permeable membrane covers; (b) Adaptation of operations to the meteorological conditions	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 37. We have assessed the information provided. We are satisfied that the operator has demonstrated compliance with BATc 37. Operations are adapted to meteorological conditions. Composting process is undertaken in accordance with the SOP..
38	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.	**CC**	**Environment Agency assessment** The operator provided information to support compliance with BATc 38. We have assessed

BAT Conclusion No	Summary of BAT Conclusion requirement for Waste Treatment	Status NA/ CC/ NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	This includes monitoring and/or control of key waste and process parameters: • 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. H_2S) and pressure; • liquid and foam levels in the digester.		the information provided. We are satisfied that the operator has demonstrated compliance with BATc 38. All key parameters are monitored in line with the PAS110 and QP for digestate. (SCADA/HMI, biological sampling, daily monitoring spreadsheet, dry matter testing, site daily checklist). Last audited by the EA January 2021.
39	In order to reduce emissions to air, BAT is to use both of the techniques given below: (a) Segregation of the waste gas streams; (b) Recirculation of waste gas	**N/A**	**<u>Environment Agency assessment</u>** We are satisfied that BATc 39 does not apply to the installation.

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

Existing Medium Combustion Plant

We asked the Operator to provide information on all combustion plant on site in the Regulation 61 Notice as follows:

- Number of combustion plant (CHP engines, back-up generators, boilers);
- Size of combustion plant – rated thermal input (MWth)
- Date each combustion plant came into operation
- Confirmation as to whether or not the combustion plant is subject to a capacity market agreement (2014 or 2015 auction) or whether or not a Feed-in Tariff preliminary accreditation application was received prior to 1 December 2016

The Operator provided the information in the table below:

Combined heat and power (CHP) engines

1. Rated thermal input (MW) of the medium combustion plant.	1MWth and 1.15MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	CHP
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Biogas
4. Date of the start of the operation of the medium combustion plant or, where the exact date of the start of the operation is unknown, proof of the fact that the operation started before 20 December 2018.	CHP1 – November 2014 CHP 2 – December 2015 Backup generator – Dec 2015
5. Confirmation of capacity market agreement arising from 2014 or 2015 capacity auctions.	yes
6. Confirmation of Feed-in Tariff preliminary accreditation application received by the Gas and Electric Markets Authority prior to 1 December 2016.	FIT accreditation received by Gas and Electricity Markets before 1st December 2016

We have reviewed the information provided and we consider that the declared combustion plant qualifies as “existing” medium combustion plant.

For existing MCP with a rated thermal input of less than or equal to 5 MW, the emission limit values set out in tables 1 and 3 of Part 1 of Annex II MCPD shall apply from 1 January 2030.

We have included the appropriate emission limit values for existing medium combustion plant as part of this permit review. See Table S3.1 in the permit.

We have included improvement condition IC5 in the permit which requires the Operator to assess methane slip resulting from the combustion of biogas via the CHP engines. Following an assessment of the data, the Environment Agency shall consider whether or not emission limits for volatile organic compounds are applicable for this installation.

Bioaerosols monitoring requirements

We asked the Operator to confirm the following aspects regarding the site operations in the Regulation 61 Notice:

- Whether or not the operational processes of biodegradable waste are in open processes within 250 metres of human receptors.
- Whether or not there is a channelled or point source release within 250 metres that are open sources e.g. biofilters within 250 metres of human receptors; and
- The existing permit contains bioaerosols monitoring requirements, the microbiological markers, associated bioaerosols limits and the monitoring standards

The Operator provided information regarding bioaerosols monitoring in their response to the Regulation 61 Notice. The operator has stated there are no open processes or channelled point source releases within 250m of human receptors. 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 receptors. In addition, the site operates a biofilter which is located within 250 metres of a sensitive receptor.

We have updated the bioaerosols monitoring requirements in the permit in accordance with our guidance TGN M9 Environmental monitoring of bioaerosols at regulated facilities (version 2, July 2018). We have removed the requirement to monitor gram negative bacteria. The Operator is required to comply with the new monitoring requirements from the date of permit issue.

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 (13 - Appendix 7 – Site Condition Report) during the original application received on 22/07/2013 an additional supplementary report on 15/01/16. The site condition reports 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. The wastes are specified in Table S2.2, S2.3, S2.4 and S2.5 and 2.6 in the permit.

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 wastes prior to acceptance for treatment at the site in accordance with BATc 2a.

Table S2.2 Anaerobic digestion

Waste code	Description
02 03 02	wastes from preserving agents
03 03 02	green liquor sludge (from recovery of cooking oil)
03 03 08	wastes from sorting of paper and cardboard destined for recycling – not allowed if non-biodegradable coating or preserving substance present
03 03 10	fibre rejects and sludges i.e. paper pulp (de-inked only), paper fibre
04 01 01	fleshings and lime split waste

Waste code	Description
04 01 05	tanning liquor free of chromium
04 01 07	sludges not containing chromium
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost from source segregated biodegradable waste
20 01 38	wood other than that mentioned in 20 01 37 – untreated wood where no non-biodegradable coating or preserving substance present

Table S2.3 Open systems

Waste code	Description
02 01 01	sludges from washing and cleaning
02 03 01	sludges from washing, cleaning, peeling, centrifuging and separation
02 06 01	materials unsuitable for consumption or processing
17 02 01	wood
19 06 03	liquor from anaerobic treatment of municipal waste – allowed only if derived from input types allowed by the Anaerobic Digestate Quality Protocol and are derived from a facility independently certified as complying with BSI PAS 110. For example, the waste must not contain wastes derived from mechanical biological treatment (MBT) facilities or any compost-like outputs (CLO)
19 06 05	liquor from anaerobic treatment of animal and vegetable waste – allowed only if derived from input types allowed by the Anaerobic Digestate Quality Protocol and are derived from a facility independently certified as complying with BSI PAS 110. For example, the waste must not contain wastes derived from mechanical biological treatment (MBT) facilities or any compost-like outputs (CLO)
19 08 05	sludges from treatment of urban waste water
19 12 07	wood other than that mentioned in 19 12 06
20 01 38	wood other than that mentioned in 20 01 37
20 03 01	mixed municipal waste – allowed only if separately collected biodegradable wastes otherwise allowed by PAS 100 Compost Quality Protocol.

Table S2.4 Closed systems

Waste code	Description
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10
04 01 01	fleshings and lime split waste
17 02 01	wood
19 12 07	wood other than that mentioned in 19 12 06
20 01 38	wood other than that mentioned in 20 01 37

We made this decision with respect to waste types in accordance with the Framework Guidance Note – *Framework for assessing suitability of wastes going to anaerobic digestion, composting and biological treatment* (July 2013).

Excluded wastes (99 waste codes)

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

Table S2.2 Anaerobic digestion

Waste code	Description
02 03 99	sludge from the production of edible fats and oils includes seasoning residues, molasses residues, residues from the production of potato, corn or rice starch.
02 04 99	other biodegradable wastes
02 07 99	spent grains, hops and whisky filter sheets/cloths, yeast, yeast-like residues, sludge from production process
19 05 99	composting liquors

Table S2.3 Open Systems

Waste code	Description
02 07 99	malt husks, malt sprouts, yeast and yeast-like residues only
19 05 99	composting liquors – allowed only if: liquor/leachate from a composting process that accepts only the waste input types allowed by PAS 100 Compost Quality Protocol or digestate from an aerobic digestion process that accepts only the waste input types allowed by the PAS 100 Compost Quality Protocol

Table S2.4 Closed systems

Waste code	Description
02 07 99	malt husks, malt sprouts, yeast and yeast-like residues only
19 05 99	composting liquors – allowed only if: liquor/leachate from a composting process that accepts only the waste input types allowed by PAS 100 Compost Quality Protocol or digestate from an aerobic digestion process that accepts only the waste input types allowed by the PAS 100 Compost Quality Protocol.

Table S2.5 Soil treatment

Waste code	Description
19 08 99	stone filter media – free from sewage contamination only

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 specifies 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 lagoon storage infrastructure design

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.

Risk assessment for secondary containment and storage lagoons

We assessed site containment (including storage lagoons) as part of the permit review. Our assessment is in two stages:

Stage 1 – A review of the site containment risk assessment; and

Stage 2 – A review of existing site containment – a demonstration that the existing site containment (including storage lagoons) is fit for purpose i.e. meets the CIRIA C736 standards

The operator submitted a secondary containment report which consisted of an assessment of the site secondary containment in comparison to the CIRIA C736 standard. The report included a site-specific risk assessment methodology for the existing secondary containment in accordance with Chapter 2 of CIRIA C736.

In accordance with the CIRIA C736, the general framework for the risk assessment of containment adopts a three-step approach as follows:

Step 1 applies the source–pathway–receptor model to the site to assess the hazard presented by the inventory to the surrounding environment. The assessment of the source–pathway–receptor is combined to provide a **site hazard rating**. However, in many cases the nature and quantity of the inventory and knowledge of nearby sensitive receptors such as water bodies or designated habitats may be sufficient to determine that there is negligible (low site hazard rating) or, conversely, a high (high site hazard rating) risk.

Step 2 considers the likelihood of a loss of containment. This will depend on several factors such as the reliability of the operations and inspections undertaken on site, the conditions of the primary storage vessels and the degree they are protected from impact damage etc. Security will also be a consideration. The likelihood of a loss of containment is combined with the site hazard rating to provide a **site risk rating**.

Step 3 the site risk rating leads to a recommendation for an appropriate class of containment.

We assessed the operator's risk assessment in accordance with the following guidance documents:

- ADBA Industry Guide: Secondary Containment at AD Plants (Version 1, 2016);
- ADBA PROjEN AD Containment Classification Tool
- CIRIA C736 Containment systems for the prevention of pollution

We are satisfied that the risk assessment of the existing secondary containment and lagoon storage infrastructure is adequate with respect to the following aspects:

- The site hazard rating is accurate based on the details of the source-pathway-receptor assessment

- The site hazard risk rating is accurate based on the assessment of the likelihood of occurrence of each event that may lead to loss of containment

Consequently, we agree that the overall site risk rating is LOW

Assessment of existing secondary containment & lagoon storage design and construction

The Operator's report included a review of the design, method of construction and integrity of the site secondary containment and storage which was carried out by a structural or civil engineer. The review compared the existing site secondary containment against CIRIA C736. The report included a review of the:

- physical condition of the secondary containment
- the suitability for providing containment when subjected to the dynamic and static loads caused by catastrophic tank failure;
- a preventative maintenance and inspection regime;
- future work required to ensure compliance with the standards set out in CIRIA C736 or other relevant industry standard; and
- Recommendations (where relevant)

We assessed the Operator's assessment having regard to following guidance documents:

- CIRIA C736 Containment systems for the prevention of pollution
- ADBA Industry Guide: Secondary Containment at AD Plants (Version 1, 2016);
- ADBA PROjEN AD Containment Classification Tool

We reviewed the Operator's report and its findings. We are satisfied that the existing site containment and storage lagoon meet(s) the standards set out in CIRIA C736.

Primary containment infrastructure design (tanks /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 C736 was previously submitted to the Environment Agency.

We are satisfied that the existing site primary containment meets the standards set out in CIRIA C736 standards.

Lagoon cover and leachate 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 confirmed that the storage lagoon provides a minimum of two months storage. The Operator did not provide any information in response to lagoon cover arrangements.

We have therefore set an Improvement Condition (IC3) 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.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The operator shall submit a review of the effluent storage lagoon in writing to the Environment Agency for approval. The report shall contain the results of the review of the lagoon and a summary of the measures to be taken to comply with the requirements set out in CIRIA Report 164 – Design of Containment Systems for the Prevention of Water Pollution from Industrial Incidents. This includes demonstrating that the base of the lagoon remains above the water table. The report shall contain recommendations for any necessary improvement measures and dates for the implementation of such measures. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan.	Completed
IC2	The operator shall submit a revised odour management plan to the Environment Agency for written approval. The plan shall take into account the appropriate measures for odour control specified in section 2.2.6 of Sector Guidance Note IPPC S5.06 – Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste. The plan shall also incorporate all the required detailed information as specified in the Environment Agency's Horizontal Guidance H4 – Odour Management.	Completed
Improvement condition for lagoon cover and operational storage capacity		
IC3	The operator shall provide a written "digestate /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 digestate and/or 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 outbreak etc. The storage plan shall include: • Existing cover arrangements on storage lagoons used to store digestate and/or compost liquor to minimise odour, ammonia and methane 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. The plan shall be implemented in accordance with the Environment Agency's written approval.	04/10/2023 or other date as agreed in writing with the Environment Agency
Improvement condition for review of effectiveness of abatement plant		

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC4	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. The operator shall submit a written report to the Environment Agency following this review for assessment and approval. The report shall include but not limited to the following aspects: • 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 related incidents • Recommendations for improvement including the replacement or upgrading the abatement plant • Timescales for implementation of improvements to the abatement plant The operator shall implement the improvements in line with the timescales as approved by the Environment Agency.	04/10/2023 or other date as agreed in writing with the Environment Agency
Improvement condition for assessment of methane slip		
IC5	The operator shall establish the methane emissions in the exhaust gas from engines burning biogas and compare these to the manufacturer's specification and benchmark levels agreed in writing with the Environment Agency. The operator shall, as part of the methane leak detection and repair (LDAR) programme, develop proposals to assess the potential for methane slip and take corrective actions where emissions above the manufacturer's specification or appropriate benchmark levels are identified.	04/10/2023 or other date as agreed in writing with the Environment Agency