FOYLE MEATS
MELTON RD
SIX HILLS
MELTON MOWBRAY
LE14 3PR

Environmental Permit Application

BAT Conclusions for Slaughterhouses & Animal By-Product Industries

Document Ref: Attachment B.3.5 – Revision 1

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
5.1 Slaughterhouses and animal by-products installations		
5.1.1 General Processes and operations **For all slaughterhouses and animal by-products installations, BAT is to do all of the following:**		
BAT 1. BAT is to use an environmental management system (see Section 4.1.1 and 5.1.1.1).	ISO14001 in place.	Yes
BAT 2. BAT is to provide training (see Section 4.1.2).		
BAT 3. BAT is to use a planned maintenance programme (see Section 4.1.3).	Track plan used	Yes
BAT 4. BAT is to apply dedicated metering of water consumption (see Section 4.1.4).	Episensors used around site	Yes
BAT 5. BAT is to separate process and non-process waste water (see Section 4.1.5).	Process water and no-process water have a separate drainage network.	Yes
BAT 6. BAT is to remove all running water hoses and repair dripping taps and toilets (see Section 4.1.7).	Included as part of the maintenance programme.	Yes
BAT 7. BAT is to fit and use drains with screens and/or traps to prevent solid material from entering the waste water (see Section 4.1.11).	Drain screens are fitted at the site.	Yes
BAT 8. BAT is to dry clean installations and transport by-products dry (see Section 4.1.12), followed by pressure cleaning (see Section 4.1.10) using hoses fitted with handoperated triggers (see Section 4.1.9) and where necessary hot water	There is an SOP at the site.	Yes

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supplied from thermostatically controlled steam and water valves (see Section 4.1.23).		
BAT 9. BAT is to apply overfilling protection on bulk storage tanks (see Section 4.1.13).	Safety Valves fitted on all water tanks	
BAT 10. BAT is to provide and use bunds for bulk storage tanks (see Section 4.1.14).	All chemicals at the site are stored on bund.	Yes
BAT 11. BAT is to implement energy management systems (see Sections 4.1.16 and 4.1.17).	ISO50001 in place.	
BAT 12. BAT is to implement refrigeration management systems (see Section 4.1.18).	New units to be installed	Yes
BAT 13. BAT is to operate controls over refrigeration plant running times (see Section 4.1.19).	Sensors fitted to all refrigeration plant and episensors	Yes
BAT 14. BAT is to fit and operate chill room door closing switches (see Section 4.1.21).	Interlocking handles on all doors	N/A
BAT 15. BAT is to recuperate heat from refrigeration plants (see Section 4.1.22).	Not carried out on site	N/A
BAT 16. BAT is to use thermostatically controlled steam and water blending valves (see Section 4.1.23).	Steam boiler used on site and relevant valves in place	Yes

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BAT 17. BAT is to rationalise and insulate steam and water pipework (see Section 4.1.24).	This has been carried out at the site.	Yes
BAT 18. BAT is to isolate steam and water services (see Section 4.1.25).	Isolation valves in place.	Yes
BAT 19. BAT is to implement light management systems (see Section 4.1.26).	Sensors fitted so lights go out automatically.	Yes
BAT 20. BAT is to store animal by-products for short periods and possibly to refrigerate them (see Section 4.1.27).	Animal by-products are separated and removed off-site daily.	Yes
BAT 21. BAT is to audit odour (see Section 4.1.28).	Odour is included as part of a weekly site check.	Yes
BAT 22. BAT is to design and construct vehicles, equipment and premises to ensure that they are easy to clean (see Section 4.1.30).	N/A	N/A
BAT 23. BAT is to clean materials storage areas frequently (see Section 4.1.31).	All areas are cleans daily.	Yes
BAT 24. BAT is to implement a noise management system (see Section 4.1.36).	Noise emission from the site are relatively low and do not constitute a nuisance.	N/A
BAT 25. BAT is to reduce noise at, e.g. roof extract fans, balance lagoon blowers and refrigeration plants (see Sections 4.1.3, 4.1.36, 4.1.37, 4.1.38 and 4.1.39).	Noise emission from the site are relatively low and do not constitute a nuisance.	N/A

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BAT 26. BAT is to replace the use of fuel oil with natural gas, where a natural gas supply is available (see Section 4.1.40).	Natural gas is the primary fuel used at the site.	Yes
BAT 27. BAT is to enclose animal by-products during transport, loading/unloading and storage (see Section 4.1.29).	All trailers are coved before leaving the site.	Yes
BAT 28. BAT is to where it is not possible to treat blood before its decomposition starts to cause odour problems and/or quality problems, refrigerate it as quickly as possible and for as short a time as possible, to minimise decomposition (see Section 4.2.1.8).	Blood is stored in refrigerated tanks and removed off-site daily.	Yes
BAT 29. BAT is to export any heat and/or power produced which cannot be used on-site.	No facility to carry out	N/A
5.1.1.1 BAT for environmental management		
BAT 30. BAT is to implement and adhere to an Environmental Management System (EMS) that incorporates, as appropriate to individual circumstances, the following features: (see Chapter 4) • definition of an environmental policy for the installation by top management (commitment of the top management is regarded as a precondition for a successful application of other features of the EMS) • planning and establishing the necessary procedures • implementation of the procedures, paying particular attention to – structure and responsibility	ISO14001 in place.	Yes

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
− training, awareness and competence − communication − employee involvement − documentation − efficient process control − maintenance programme − emergency preparedness and response − safeguarding compliance with environmental legislation. • checking performance and taking corrective action, paying particular attention to monitoring and measurement *(see also the Reference document on Monitoring of Emissions)* − corrective and preventive action − maintenance of records − independent (where practicable) internal auditing in order to determine whether or not the environmental management system conforms to planned arrangements and has been properly implemented and maintained. • review by top management.	Audits carried out annually schedule in place	
5.1.2 Integration of same site activities		
BAT 31. **For slaughterhouses and/or animal by-products installations, operating on the same site, BAT is to do the following:** 1. re-use heat and/or power produced in one activity in other activities (see Sections 4.4.1, 4.4.2 and 4.4.3) and 2. share abatement techniques, where these are required, e.g. WWTPs	No animal by-product installation on site	N/A

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
For rendering and incineration on the same site, BAT is to do the following: – burn non-condensable gases produced during rendering in a same site incinerator (see Sections 4.4.2 and 4.4.3).		
5.1.3 Collaboration with upstream and downstream activities		
BAT 32. BAT is to seek collaboration with upstream and downstream partners, to create a chain of environmental responsibility, to minimise pollution and to protect the environment as a whole, (see, e.g. Sections 4.2.2.1.1, 4.2.2.1.2, 4.1.27, 4.3.1.4, 4.3.4.1, 4.3.8.7 and 4.2.2.9.10).	All chemicals delivered by approved suppliers	N/A
5.1.4 Installation and equipment cleaning		
BAT 33. **For the cleaning of slaughterhouses and animal by-products installations, BAT is to do the following:** 1. manage and minimise the quantities of water and detergents consumed (see Section 4.1.42.1) 2. select those detergents which cause minimum impact on the environment (see Section 4.1.42.2), without compromising the efficacy of cleaning. 3. avoid, where possible, the use of cleaning and disinfectant agents containing active chlorine (see Section 4.1.42.3) and 4. where the equipment is suitable, operate a cleaning-in-place system (see Section 4.2.4.3).	Procedures in place to manage water usage and chemical usage	Yes

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5.1.5 Treatment of wastewater		
BAT 34. **For the treatment of waste water from slaughterhouses and animal by-products installations, BAT is to do the following:** 1. prevent waste water stagnation (see Section 4.1.43.3) 2. apply an initial screening of solids using sieves (see Section 4.1.43.4) at the slaughterhouse or animal by-products installation 3. remove fat from waste water, using a fat trap (see Section 4.1.43.9) 4. use a flotation plant, possibly combined with the use of flocculants, to remove additional solids (see Section 4.1.43.10) 5. use a waste water equalisation tank (see Section 4.1.43.11) 6. provide a waste water holding capacity in excess of routine requirements (see Section 4.1.43.1) 7. prevent liquid seepage and odour emissions from waste water treatment tanks, by sealing their sides and bases and either covering them or aerating them (see Sections 4.1.43.12 and 4.1.43.13) 8. subject the effluent to a biological treatment process. Aerobic and anaerobic treatments which are applied to waste water from slaughterhouses and animal byproducts installations are described in Sections 2.3.1.2, 2.3.2.1.3, 4.1.43.14, 4.1.43.15, 4.2.6.2, 4.2.6.3 and 4.3.3.15 9. remove nitrogen and phosphorus. Some information is given in Section 2.3.1.2 10. remove the sludges produced and subject them to further animal by-product uses.	Wastewater is not treated at the site but removed via tanker daily.	N/A

<table>
<tr><th>Conclusions on BAT</th><th>Applicability Assessment (Describe how the technique applies or not to your installation)</th><th>State whether it is in place or state schedule for implementation</th></tr>
<tr><td>
These routes and their conditions of application are regulated by ABP Regulation 1774/2002/EC
11. use CH4 gas produced during anaerobic treatment for the production of heat and/or power
12. subject the resulting effluent to tertiary treatment and
13. regularly conduct laboratory analyses of the effluent composition and maintain records (see Section 4.1.43.2). Further information on monitoring techniques is available in the current “Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector” BREF [341, EC, 2002]. Note the emission levels given in Table 5.1 are generally considered to be appropriate for protecting the water environment and are indicative of the emission levels that would be achieved with those techniques generally considered to represent BAT. They do not necessarily represent levels currently achieved within the industry but are based on the expert judgment of the TWG.
<table>
<tr><th>Parameter</th><th>COD</th><th>BOD_5</th><th>SS</th><th>Nitrogen (total)</th><th>Phosphorus (total)</th><th>FOG</th></tr>
<tr><td>Achievable emission level (mg/l)</td><td>25-125</td><td>10-40</td><td>5-60</td><td>15-40</td><td>2-5</td><td>2.6-15</td></tr>
</table>
Table 5.1: Emission levels associated with BAT for minimising waste water emissions from slaughterhouses and animal by-products installations.
</td><td>No mains sewer is connected to site</td><td></td></tr>
</table>

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
	N/A at present as no liquids go through a DAF plant or to local sewage plant	

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
5.2 Additional BAT for slaughterhouses		
BAT 35. **In addition to the general measures in Section 5.1, for all slaughterhouses BAT is to do all of the following:** 1. dry scrape delivery vehicles (see Sections 4.2.1.1) and prior to cleaning with a highpressure hose (see Section 4.2.1.2) 2. avoid carcase washing and where this is not possible to minimise it, combined with clean slaughter techniques (see Section 4.2.1.4) 3. continuously collect by-products dry and segregated from each other, along the length of the slaughter-line (see Section 4.2.1.6), combined with optimising bleeding and the collection of blood (see Section 4.2.2.2.1) and segregating the storage and handling of different kinds of by-products (see Section 4.2.5.1) 4. operate a double drain from the bleed hall (see Section 4.2.1.7) 5. collect floor waste dry (see Section 4.2.1.9) 6. remove all unnecessary taps from the slaughter-line (see Section 4.2.1.13) 7. insulate and cover knife sterilisers (see Section 4.2.1.14), combined with sterilising knives using low-pressure steam (see Section 4.2.1.17) 8. operate hand and apron cleaning cubicles, with a “water off” default (see Section 4.2.1.18) 9. manage and monitor compressed air use (see Section 4.2.1.19) 10. manage and monitor ventilation use (see Section 4.2.1.20) 11. use backward bowed centrifugal fans in ventilation and refrigeration systems (see Section 4.2.1.21) 12. manage and monitor the use of hot water (see Section 4.2.1.22) and	No carcass washing carried out Done daily Maintained/frequently Checked daily	Yes

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
13. trim all hide/skin material not destined for tanning immediately after removal from the animal, except if there is no outlet for the use/valorisation of the trimmings (see Section 4.2.2.9.10).		
5.2.1 Additional BAT for the slaughter of large animals		
BAT 36. **In addition to the general measures in Sections 5.1 and 5.2, for all large animal slaughterhouses, BAT is to do all of the following:** 1. stop feeding animals 12 hours prior to slaughter (see Section 4.2.2.1.1), combined with minimising the animals' time in the slaughterhouse to reduce manure production (see Section 4.2.2.1.2) 2. apply demand-controlled drinking water (see Section 4.2.2.1.4) 3. shower pigs using water saving timer controlled nozzles (see Section 4.2.2.1.5) 4. dry clean the lairage floor and to periodically clean it with water (see Section 4.2.2.1.6) 5. use a squeegee for the initial cleaning of the blood collection trough (see Section 4.2.2.2.2) 6. steam scald pigs (vertical scalding) (see Section 4.2.2.3.1) 7. in those existing slaughterhouses, where it is not yet economically viable to change to steam scalding, insulate and cover pig scalding tanks (see Section 4.2.2.3.2) and control the water level in those tanks (see Section 4.2.2.3.3) 8. re-use cold water within pig de-hairing machines (see Section 4.2.2.4.1) and replace irrigation pipes with flat jet nozzles (see Section 4.2.2.4.2) 9. re-use cooling water from pig singeing kilns (see Section 4.2.2.5.1)	Troughs in all pens fitted with valves to control flows	Yes N/A N/A N/A N/A N/A N/A

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
10. recover heat from pig singeing exhaust gases, for preheating water (see Section 4.2.2.5.2)	No pigs slaughtered on site	N/A
11. shower pigs after singeing, using flat jet nozzles (see Section 4.2.2.5.3)		
12. replace irrigation pipes with flat jet nozzles for rind treatment in pig slaughterhouses (see Section 4.2.2.6.1)		Yes
13. sterilise chest-opening saws in a cabinet with automated hot water nozzles (see Section 4.2.2.7.1)		
14. regulate and minimise the water used for moving intestines (see Section 4.2.2.7.2)		N/A
15. use either water-spray/mist-cooling or blast-chilling/shock-cooling tunnel to cool pigs (see Sections 4.2.2.8.1 and 4.2.2.8.2)		N/A
16. not shower pigs before they are chilled in a chilling tunnel (see Section 4.2.2.8.3)		
17. empty stomachs dry (see Section 4.2.2.9.2)		
18. collect the contents of small intestines dry (see Section 4.2.2.9.3), whether or not they are intended to be used for casings (see Section 4.2.2.9.4)		Yes
19. regulate and minimise the water consumption during small and large intestine washing (see Section 4.2.2.9.6)		Yes
20. regulate and minimise the water consumption during rinsing of tongues and hearts (see Section 4.2.2.9.9)		N/A
21. use a mechanised fat trap for removing fat from water (see Section 4.2.2.9.7)		Yes
22. according to the current *Reference Document on Best Available Techniques for the Tanning of Hides and Skins* [273, EC, 2001] BAT "is to process fresh hides and skins as far as they are available".		Yes
		Yes

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
23. when it is impossible to process hides and skins before 8 – 12 hours, with the actual range depending on local conditions, to immediately store hides between 10 and 15 ºC (see Section 4.2.2.9.11) 24. when it is impossible to process hides before a period of between 8 – 12 hours and 5 – 8 days, with the actual ranges depending on local conditions, to immediately refrigerate hides at 2 ºC (see Section 4.2.2.9.15) and 25. always immediately drum-salt all hides and skins, if they have to be stored for longer than 8 days, e.g. if they have to be transported overseas (see Section 4.2.2.9.12), combined with the dry collection of salt residues (see Section 4.2.2.9.14).	Hides refrigerated and removed from site once a week	N/A
5.2.2 Additional BAT for the slaughter of poultry		
BAT 37. **In addition to the general measures in Sections 5.1 and 5.2, for all poultry slaughterhouses, BAT is to do all of the following:** 1. apply dust abatement at bird reception, unloading and hanging stations (see Sections 4.2.3.1.2, 4.2.3.1.3 and 4.2.3.1.4) 2. stun birds in their modules, using inert gases at new installations and when existing stunning equipment and bird delivery vehicles are due for renewal (see Section 4.2.3.2.1) 3. reduce water consumption in poultry slaughter, by removing carcase washing equipment from the line except after de-feathering and evisceration (see Section 4.2.1.11) 4. steam scald poultry (see Section 4.2.3.3.1) 5. insulate scalding tanks in those existing premises where it is not yet economically viable to change to steam scalding (see Section 4.2.3.3.2)	Poultry is not slaughtered at the site.	N/A

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
6. use nozzles instead of irrigation pipes to shower poultry, during de-feathering (see Section 4.2.3.4.1) 7. use recycled water, e.g. from the scalding tank, for the carriage of feathers (see Section 4.2.3.4.2) 8. use water efficient shower heads to wash poultry, during evisceration (see Section 4.2.3.5.1) and 9. chill poultry by immersion/spin chilling and to control, regulate and minimise the water consumption (see Section 4.2.3.6.2).		

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
5.3 Additional BAT for animal by-products installations		
Bat 38. **In addition to the general measures in Sections 5.1, for all animal by-products installations, BAT is to do all of the following:** 1. operate continuous, dry and segregated collection of animal by-products throughout animal by-products treatment (see Section 4.3.1.1) 2. use sealed, storage, handling and charging facilities for animal by-products (see Section 4.3.1.3) 3. where it is not possible to treat animal by-products before their decomposition starts to cause odour problems and/or quality problems, refrigerate them as quickly as possible and for as short a time as possible (see Section 4.3.1.4) and 4. where inherently malodorous substances are used or are produced during the treatment of animal by-products, pass the low intensity/high volume gases through a biofilter (see Section 4.1.33).	Animal by-products stored in trailers during the day. Sheeted when full and removed from site every night after production	Yes
5.3.1 Additional BAT for fat melting		
For fat melting no additional BAT have been identified in addition to those in Sections 5.1 and 5.3.	Fat melting is not carried out at the site.	N/A
5.3.2 Additional BAT for rendering		
BAT 39. **In addition to the general measures in Sections 5.1 and 5.3, for rendering installations, BAT is to do all of the following:** 1. totally enclose the rendering line (see Section 4.3.3.1) 2. reduce the size of carcases and parts of animal carcases before rendering (see Section 4.3.3.2)	Rendering is not carried out at the site.	N/A

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
3. remove water from blood, by steam coagulation, prior to rendering (see Section 4.3.3.4) 4. for raw material throughputs less than 50000 t/yr, to use a single effect evaporator to remove water from liquid mixtures (see Section 4.3.3.5) and 5. for raw material throughputs greater than, or equal to 50000 t/yr, to use a multiple effect evaporator to remove water from liquid mixtures (see Section 4.3.1.5). **When it has been impossible to use fresh raw materials and thereby to minimise the production of malodorous substances, BAT is to do either of the following:** 1. burn the non-condensable gases in an existing boiler (see Section 4.3.3.11) and to pass the low intensity/high volume odours through a biofilter (see Section 4.1.33) or 2. to burn the whole vapour gases in a thermal oxidiser (see Section 4.3.3.10) and to pass the low intensity/high volume odours through a biofilter (see Section 4.1.33).		
5.3.3 Additional BAT for fish-meal and fish-oil production		
BAT 40. **In addition to the general measures in Sections 5.1 and 5.3, for fish-meal and fish-oil production installations, BAT is to do all of the following:** 1. use fresh, (low total volatile nitrogen) feedstock (see Section 4.3.4.1) 2. use heat from the vapour evaporated during the drying of fish-meal in a falling film evaporator to concentrate stickwater (see Section 4.3.4.2)	Fish are not processed at the site.	N/A

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
3. incinerate malodorous air, with heat recovery (see Section 4.3.4.3) and 4 wash air using condensate liquid instead of using clean seawater (see Section 4.3.4.4).		
5.3.4 Additional BAT for blood processing		
BAT 41. **In addition to the general measures in Sections 5.1 and 5.3, for blood processing installations BAT is to do one of the following:** 1. concentrate plasma, prior to spray drying, using reverse osmosis (see Section 4.3.5.1) 2. concentrate plasma, prior to spray drying, using vacuum evaporation (see Section 4.3.5.2) or 3. remove water from blood, by steam coagulation, prior to spray drying (see Section 4.3.3.4).	Blood is not processed at the site.	N/A
5.3.5 Additional BAT for bone processing		
For bone processing, no additional BAT have been identified in addition to those in Sections 5.1 and 5.3.	Bone is not processed at the site.	N/A
5.3.6 Additional BAT for gelatine manufacture		
BAT 42. **In addition to the general measures in Sections 5.1 and 5.3, for gelatine manufacturing installations, BAT is to do the following:** 1. insulate bone de-fatting equipment (see Section 4.3.7.1).	Gelatine is not manufactured at the site.	N/A
5.3.7 Additional BAT for the incineration of animal by-products		

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
BAT 43. **In addition to the general measures in Sections 5.1 and 5.3, for the incineration of animal by-products, BAT is to do all of the following:** 1. enclose buildings used for delivery storage, handling and processing of animal byproducts (see Section 4.3.8.1) 2. clean and disinfect delivery vehicles and equipment, after each delivery/use (see Section 4.3.8.2) 3. carry carcases (not drag them) (see Section 4.3.8.3) 4. reduce in size animal carcases and parts of animal carcases, before incineration (see Section 4.3.8.4) 5. restrict feedstock to exactly that tested during trials (see Section 4.3.8.5) 6. agree the fat:moisture:ash content of animal meal, with the renderer (see Section 4.3.8.6) 7. avoid receipt of material for incineration in PVC packaging (see Section 4.3.8.10) 8. either auger feed (see Section 4.3.8.11), or pump (see Section 4.3.8.12) parts of carcases or animal meal to the incinerator 9. incinerate incineration waste water (see Section 4.3.8.13), if there is no suitable WWTP on the site 10. seal the storage, handling and charging of animal by-products to incinerators (see Section 4.3.8.14) 11. duct air from the installation and the pre-combustion equipment to combustion chambers (see Section 4.3.8.15) 12. alarm and interlock combustion temperatures to charging mechanisms (see Section 4.3.8.16). 13. operate continuous incineration (see Section 4.3.8.20)	Animals are not incinerated at the site.	N/A

<table>
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14. operate an ash burnout chamber (see Section 4.3.8.21), where adequate combustion is not otherwise achievable, e.g. immediately downstream from rotary kilns
15. operate automated continuous de-ashing (see Section 4.3.8.22)
16. operate a monitoring regime for emissions, including a protocol for monitoring burnout, including biohazard from TSE prions, in ash (see Section 4.3.8.25)
17. to achieve emission levels as low as reasonably practicable below those shown in Table 5.2 (see Section 4.3.8.17)
<table>
<tr><th>Releases to air</th><th colspan="2">Performance associated with BAT(3)</th></tr>
<tr><th></th><th>Typical</th><th>Monitoring</th></tr>
<tr><td>SO2 (mg/m^3)</td><td><30 (2)</td><td>Continuous</td></tr>
<tr><td>HCl (mg/m^3)</td><td><10 (2)</td><td>Continuous</td></tr>
<tr><td>HF (mg/m^3)</td><td>n/a</td><td></td></tr>
<tr><td>NOx (mg/m^3)</td><td><175 (2)</td><td>Continuous</td></tr>
<tr><td>CO (mg/m^3)</td><td><25 (2)</td><td>Continuous</td></tr>
<tr><td>VOCs (mg/m^3)</td><td><10 (2)</td><td>Periodic</td></tr>
<tr><td>Dust (mg/m^3)</td><td><10 (2)</td><td>Continuous</td></tr>
<tr><td>Dioxins and furans (ng/m^3)</td><td><0.1 (4)</td><td>Periodic</td></tr>
<tr><td>Heavy metals total (Cd, Tl (mg/m^3)</td><td><0.05 (5)</td><td></td></tr>
<tr><td>Heavy metals (Hg) (mg/m^3)</td><td><0.05 (5)</td><td></td></tr>
<tr><td>Heavy metals total (Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V) (mg/m^3)</td><td><0.5 (5)</td><td></td></tr>
<tr><td>NH_3 (mg/m^3)</td><td><10</td><td></td></tr>
</table>
</td><td>No readings taken due to no incineration carried out on site.</td><td></td></tr>
</table>

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation

Residence time >850ºC	3.5 s	
Oxygen (minimum after last injection)	9%	Continuous
Pressure, Temperature, Water vapour; Volumetric flow		Continuous
Ash – (total carbon)	<1%(6)	Periodic
Ash – (total protein) (Aqueous extract) (mg/100g)	0.3 – 0.6	Periodic
2. Releases control – "95 % percentile hourly average over 24 hours". Measurements at 273 K (temp.), 101.3 kPa (pressure) and 11 % O2 dry gas		
3. Actual performance results operating a dry flue gas-cleaning system with bag filters and injected reagents		
4. Values measured over a sample period of a minimum of 6 hours and a maximum of 8 hours expressed as toxic equivalent in accordance with Annex 1 of the Waste Incineration Directive (5) Values measured over a sample period of a minimum of 6 hours and a maximum of 8 hours (6) Total organic carbon Note: Protein analysis is not relevant to the dedicated incineration of poultry by-products		

Table 5.2: Emission levels associated with the dedicated incineration of animal by-products in either bubbling fluidised bed, circulating fluidised bed or rotary kiln incinerators.

18. regularly clean and disinfect installations and equipment (see Section 4.3.8.26)
19. operate odour arrestment techniques, when the incinerator is not working (see

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
20. Section 4.3.8.27), when odour prevention is not reasonably practicable and 21. use a carbon filter for odour abatement, when incinerators are not operating (see Section 4.3.8.29) and where odour prevention is not reasonably practicable. **In addition to the general measures in Sections 5.1, 5.3 and those listed above, for the incineration of animal by-products, BAT is to do one of the following:** 1. incinerate animal carcases, parts of carcases and animal meal in bubbling fluidised bed incinerators (see Section 4.3.8.17), with suitable flue gas treatment equipment or 2. incinerate animal carcases, parts of carcases and animal meal in circulating fluidised bed incinerators (see Section 4.3.8.18), with suitable flue gas treatment equipment or incinerate animal carcases, parts of carcases and animal meal in rotary kiln incinerators (see Section 4.3.8.19), with suitable flue gas treatment equipment.	No incineration carried out on site	
5.3.8 Additional BAT for biogas production		
BAT 44. **In addition to the general measures in Sections 5.1 and 5.3, for biogas production, BAT is to do the following:**	Bio-gas is not produced at the site.	N/A

Conclusions on BAT	Applicability Assessment (Describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
1. re-use heat during biogas production (see Section 4.3.10.3).		
5.3.9 Additional BAT for composting		
BAT 45. **In addition to the general measures in Sections 5.1 and 5.3, for composting, animal by-products, BAT is to do the following:** 1. provide sufficient drainage capacity for a windrow on a hard standing (see Section 4.3.11.1) constructed from concrete (see Section 4.3.11.2).	Composting is not carried out at the site.	N/A