Natural Resources Wales permitting decisions

Variation and Consolidation of a bespoke Permit – Dwr Cymru Cyfyngedig

We have decided to issue a Natural Resources Wales initiated variation and consolidated permit for Cardiff East Wastewater Treatment Works CHP Facility in Tremorfa, Cardiff operated by Dwr Cymru Cyfyngedig.

The permit number is EPR/FP3232KG.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

The permit has been varied following the publication of the revised Best Available Techniques (BAT) Reference Documents (BREF) for Waste Treatment. The associated BAT conclusions to this document were published on 17 August 2018 in the Official Journal of the European Union.

This variation incorporates the changes required by the Industrial Emissions Directive following a statutory review of permits in the Waste Treatment sector. These include the amendment of the wording of several permit conditions relating to notifications, changes to emissions limits and monitoring requirements.

We are satisfied that the operator will be compliant with the published BAT conclusions which will apply from 17 August 2022.

Purpose of this document

This decision document:

- explains how we have carried out our statutory review of the Operator's Permit;
- why we have decided to vary the Permit as a result of that review; and
- why we have included the specific conditions in the revised Permit through the variation notice we are issuing.

It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position.

Structure of this document

- Assessment of Cardiff East Wastewater Treatment Works CHP Facility against the published BAT conclusions for Waste Treatment.
- Annex 1 – Decision Checklist regarding relevant BAT Conclusions

Assessment of Cardiff East Wastewater Treatment Works CHP Facility against the published BAT conclusions for Waste Treatment

1. Our decision

We have issued a variation, which will allow Dwr Cymru Cyfyngedig to operate the installation, subject to the conditions in the varied permit.

The variation does three things:

- it consolidates the original permit to reflect changes made through earlier variations;
- it brings the permit into line with our modern regulatory template; and

- it varies the permit where appropriate to reflect the outcome of our statutory review and incorporate Best Available Techniques (BAT) and Associated Emission Limit Values (BAT-AELs).

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

The original permit, issued on the 26 April 2010, ensured that the installation, employed Best Available Techniques (BAT) and ensured a high level of protection for human health and the environment. We have altered the permit as a result of the statutory review, and we are confident that the new requirements will deliver a superior level of protection to that which was previously achieved. Where a site is not currently compliant with BAT, Improvement Conditions have been included to bring the site up standard by 17 August 2022.

2. The legal framework

The Variation and Consolidation Notice (which includes the consolidated permit as Schedule 2) will be issued under Regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 (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 Industrial Emissions Directive (IED);
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Variation and Consolidated Permit, 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.

3. How we reached our decision

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 on 5 April 2019 requiring the operator to provide information to demonstrate how the operation of their installation currently meets, or will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Regulation 61(1) Notice required the operator to:

- Describe the techniques that will be implemented before 17 August 2022, which will then ensure that operations meet the revised standard, or

- Justify why standards will not be met by 17 August 2022, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or

- Justify why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.

- Where their permitted activity involves the use, production or release of a hazardous substance, as defined in Article 3(18) of the Industrial Emissions Directive, Dwr Cymru Cyfyngedig were required to carry out a risk assessment considering the possibility of soil and groundwater contamination at the permitted installation with such substances. Where risk of such contamination is established prepare a baseline report containing information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definite cessation of the activity.

- Where their permitted activity involves the use, production, storage or release of priority hazardous substances and any other relevant substances, as defined by the Water Framework Directive, the Dwr Cymru Cyfyngedig were required to carry out a risk screening assessment considering the presence of priority hazardous substances at the permitted installation. Where a risk of these substances is

established the operator is to sample the effluent and screen for the priority hazardous substances. If these substances are found to be present in the effluent stream, then assessment using the H1 tool and potential detailed modelling will be required to demonstrate that the effluent discharge will not have a significant impact to the receiving water.

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 Waste Treatment BAT Conclusions Document, the Regulation 61(1) Notice requested that the operator make a formal request for derogation from compliance with that 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(1) Notice response from the operator was received on the 27 September 2019 and additional information received on the 28 February 2020.

We considered that the response contained sufficient information for us to commence 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(1) Notice response that appears to be confidential in relation to any part.

4. Key issues/Regulation 61 response

BAT Conclusions for the Waste Treatment were published as Commission Implementing Decision EU 2018/1447 in the Official Journal of the EU on 17 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 should be read in conjunction with the permit/variation notice issued.

A response was received to Sections 1 to 4 of the Regulation 61(1) Notice from Dwr Cymru Cyfyngedig. Following assessment further information was requested from Dwr Cymru Cyfyngedig. Where the operator has concluded that they have achieved BAT, and we are in agreement, no further information/justification has been sought by Natural Resources Wales. Where the operator has not provided sufficient information or where the existing documentation does not achieve BAT, improvement conditions have been set to ensure compliance by 2022.

In response to Section 5 of the Regulation 61(1) Notice an update Opra profile was provided.

In response to Section 6 of the Regulation 61(1) Notice, Dwr Cymru Cyfyngedig did not provide the required information, however advised that an engineering assessment would commence March 2020. The Operator advised that the conclusions of this future assessment would determine if the surfacing, drainage and containment infrastructure presents any risks to soil or groundwater contamination. This assessment has yet to be provided to NRW, therefore, an improvement condition has been included within the permit to ensure activity involving the use, production or release of relevant hazardous substances as defined in Article 3(18) of the Industrial Emissions Directive are fully assessed on site.

In response to Section 7 of the Regulation 61(1) Notice Dwr Cymru Cyfyngedig confirmed that there are no discharges to surface water. All discharges from the site are discharged into the inlet of the adjacent Cardiff WwTW upon which the site is located. Unlike with a third-party trader discharging to sewer, there is no Trade Effluent Consent in place for this discharge. Dwr Cymru Cyfyngedig consider discharge into the Cardiff WwTW would be insignificant as the Dry Weather Flow of the WwTW is 309,960m^3/day whilst the maximum daily flow rate is 523,584m^3/day and maximum

flow rate is 7,500l/s. Dwr Cymru Cyfyngedig stated intent to undertake an H1 assessment for priority hazardous substances and any other relevant substances however in consideration of the low maximum daily discharge volumes from the site, they were screened out at the initial phase.

5. Changes we have made

Improvement Conditions

Based on the information provided in the Regulation 61(1) response, we consider that we need to set a number of improvement conditions. These conditions are set out below. We are using these conditions to require the operator to provide Natural Resources Wales with details that need to be established or confirmed during operations. The improvement conditions ensure compliance by 2022.

Reference	Requirement	Date
IC1	The operator shall submit to Natural Resources Wales for approval information to evidence compliance with the following BAT requirements in accordance with requirements specified within BAT Conclusions of the Waste Treatment BREF Document (EU 2018) in relation to: • BAT 1 - Implement and adhere to an environmental management system (EMS) that incorporates all of the following features: o (IV)(h) Emergency preparedness & response o (VII) Following development of cleaner technologies; o (VIII) Whole life cycle considerations when designing a new plant; o (IX) Regular sectoral bench marking; o (X) Waste stream management; o (XI) Inventory of wastewater & waste gas streams; o (XII) Residues Management Plan; o (XIII) Accident Management Plan. • BAT 2 In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques described within BAT 2 Table. • BAT 3 In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of wastewater and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features: o information about the characteristics of the waste to be treated and the waste treatment processes; o information about the characteristics of the wastewater streams; and o information about the characteristics of the waste gas streams. • BAT 4 In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques described within BAT 4 Table.	17 February 2022 or otherwise agreed in writing with Natural Resources Wales

	• BAT 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. • BAT 13 Techniques to prevent, or where not practicable reduce odour emissions. • BAT 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 described within BAT 14 Table. • BAT15 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 described within BAT 15 Table. • BAT 19 In order to optimise water consumption, to reduce the volume of wastewater 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 described within BAT 19 Table: a) Water Management; b) Water Recirculation; c) Impermeable Surface; 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; and i) Appropriate buffer storage capacity. • BAT 21 In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques described within BAT 21 Table. • BAT 22 In order to use materials efficiently, BAT is to substitute materials with waste. • BAT 23 Energy efficiency Plan and Energy Balance Record. • BAT 24 Maximise the reuse of packaging as part of a Residues Management Plan. • BAT 33 In order to reduce odour emissions and to improve the overall environmental performance, by selecting the waste input (to ensure its suitability for biological treatment). • BAT34 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 described within BAT34 Table. • BAT 35 In order to reduce the generation of wastewater and to reduce water usage, BAT is to use all of the techniques described within BAT 35 Table. • BAT 38 Reduce emissions to air and to improve the overall environmental performance. The Operator shall submit for written approval a methodology for meeting the process parameters listed in Schedule 3b Table S3.4, as per BAT 38 for the anaerobic treatment of waste. The methodology shall identify each of the process parameters and detail the frequency and techniques in place to record the data. Where a process parameter cannot be monitored justification should be provided and/or a suitable alternative proposed. The methodology should include trigger levels for each of the parameters with associated procedures in place if trigger levels are exceeded.	

IC2	The operator shall submit to Natural Resources Wales for written approval, information to evidence compliance with the following BAT Conclusions, in accordance with requirements specified within the Waste Treatment BREF Document (EU 2018): • BAT 19 d) Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels. Depending on the risks posed by the liquids contained in tanks and vessels in terms of soil and/or water contamination, this includes techniques such as: o overflow detectors; o overflow pipes that are directed to a contained drainage system (i.e. the relevant secondary containment or another vessel); o tanks for liquids that are located in a suitable secondary containment; the volume is normally sized to accommodate the loss of containment of the largest tank within the secondary containment; o isolation of tanks, vessels and secondary containment (e.g. closing of valves).	17 February 2022 or otherwise agreed in writing with Natural Resources Wales
IC3	The Operator shall complete and submit for approval: • a baseline report containing information necessary to determine the current state of soil and groundwater contamination; or • Provide a summary report referring to information previously submitted where you are satisfied that such information represents the current state of soil and groundwater contamination; so as to enable a quantified comparison to be made with the state of soil and groundwater contamination upon definitive cessation of activity.	17 February 2022 or otherwise agreed in writing with Natural Resources Wales

IC1 BATc 38 had been included in the permit for the operator to demonstrate that they have control over their aerobic treatment of waste process. BATc 38 of the Waste Treatment BREF requires the Operator to reduce emissions to air and to improve the overall environmental performance. BAT to is to monitor and/or control the key waste and process parameters. The description requires the operator to have a manual and/or automated system and lists a number of example process parameters.

The approach taken by NRW is to have an improvement condition for the operator to submit a methodology for how they will address the requirements listed in Schedule 3(b), Table S3.4 of the permit. The Operator will be required to confirm how the information will be gathered, for example, using a SCADA system, on-site testing, sampling etc as well as the frequency this information will be recorded. Where the operator does not undertake certain monitoring parameters, they must provide suitable justification and/or offer an alternative parameter.

This IC is for the operator to demonstrate control over their process. NRW need to understand trigger levels on site by the Operator as well as the frequency of the

monitoring. This information will help inform NRW that the process is stable. The monitored parameters may be submitted as part of the annual report, however, if there is an issue at the site the Schedule 5 Notification Form should be sent to NRW informing us of any issues or exceedances of trigger levels.

This procedure should be reflected within the sites EMS with the site having appropriate backup of this information. The resulting response to IC2 BATc 38 will become part of the Operating Techniques in Table S1.2.

A standalone Improvement Condition (IC2) has been added to the permit, which specifically requires the Operator to submit to for written approval, information to evidence compliance with the following BAT Conclusions, in accordance with requirements specified within the Waste Treatment BREF Document (EU 2018): BAT 19 d)

Operational Changes

There are a number of additional changes which have been made to the permit. These are summarised below:

- This is a consolidated permit variation following the modern permit template;
- The Registered Company Address as listed on Companies House was changed from Dŵr Cymru Welsh Water, Pentwyn Road, Nelson, Treharris, Mid Glamorgan, CF46 6LY Wales to Dŵr Cymru Welsh Water Linea, Fortran Road, St. Mellons, Cardiff, CF3 0LT on 12 February 2021. The permit has been updated to reflect the new address;
- Historically the site has been referred to as Cardiff East Wastewater Treatment Works CHP Facility as well as Cardiff Combined Heat & Power Facility. For consistency moving forward the site has been referenced as Cardiff East Wastewater Treatment Works CHP Facility throughout the permit documentation.
- Additional process data to report against generation of residues and wastewater has been included as part of the updated reporting parameters within Schedule 4 of the permit, in order to satisfy requirements of BAT Conclusion 11;
- Reference within Table S1.1 Activities to the combustion of resultant biogas in the combined heat and power (CHP) engine on site (which has an aggregated thermal input of 3.456MWth) (A4), has been re-listed within the table as a

Directly Associated Activity (DAA) rather than previously as a standalone waste activity. The CHP engine meets the definition of a DAA as described within RGN02 and the Limb (ii) test. The re-listing from a waste activity to a DAA also ensures consistency with other permits issued for the AD sector, and provides clarity for charging purposes, as DAAs do not incur additional waste Opra charges;

- The permit had ELV's set for the emergency flare. The use of the ELVs is from the permitting of landfills where flares are used more due to the fluctuating gas production whereas for AD plants this is not an issue due to the constant flow of gas to the engines. It is not in the operators' interest to burn via a flare, and no BAT AEL's are set in the Waste Treatment BAT conclusions document for emissions from flare's. Based on this, we have removed the ELVs from the permit. There is further process monitoring for gas production and gas sent to engines and flares per annum. If it looks like there is too much gas production for the facility then the site would have to adjust their throughput or install new engines to ensure the gas produced is sent to engines for electricity generation. Monitoring is a requirement if the flare is operational for more than 10% of the year therefore the pollutants and monitoring standards will remain in the permit.

In line with the Medium Combustion Plant Directive (MCPD), ELVs and monitoring requirements for existing Medium Combustion Plant (MCPs) & Specified Generators (SGs), including point source emissions A4, A5 and A6 as listed within Table S1.1 within the permit, do not require revision / inclusion until 1st January 2025 at the earliest. As this is some way off, NRW have decided to maintain any existing ELVs and monitoring requirements in the permit and not to impose new stricter ELVs ahead of time.

Emissions to Water

As part of our delivery of the Water Framework Directive requirements, we need to identify and assess the impact for all discharges to surface waters and/or sewer from the site for priority hazardous substances and any other relevant substances. The emissions monitoring for these substances should be carried out using the methods and standards described in the M18 guidance on "Monitoring of discharges to water and sewer".

With reference to the risk assessment guidance on the gov.uk website entitled "Surface water pollution risk assessment for your environmental permit" (accessible

via: https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit) the company carried out the following assessments:

- Screening tests for priority hazardous pollutants and any other relevant priority hazardous substances.
- For any substance which is not screened out by the screening tests further modelling, as described in the risk assessment guidance "Surface water pollution risk assessment for your environmental permit".

The Operator has stated that the site does not have any direct or indirect discharges to surface water. All discharges from the site are discharged into the inlet of the adjacent Cardiff WwTW upon which the site is located (as referenced as emissions point S1 within the permit). Unlike with a third-party trader discharging to sewer, there is no Trade Effluent Consent in place for this discharge. Dwr Cymru Cyfyngedig consider discharge into the Cardiff WwTW would be insignificant as the Dry Weather Flow of the WwTW is 309,960m^3/day whilst the maximum daily flow rate is 523,584m^3/day and maximum flow rate is 7,500l/s.

No further assessment has been requested from the Operator. This is consistent with the approach taking with other similarly permitted sites, where discharges are to the head of the on-site wastewater treatment works.

Emissions to Water – Article 15(4) Derogations

No derogations

Emissions to Air

There were changes to the ELV's for emissions to air taking into account BAT conclusions from the Waste Treatment BREF.

The tables below outline the parameters and limits set to implement the BAT-AELs:

Effective until 16 August 2022

Release point	Parameter	Limit/ BAT AEL	Effective until
A1	NO_X	500mg/m^3	16 August 2022
	CO	1100mg/m^3	16 August 2022
	SO_2	340mg/m^3	16 August 2022
A2	NO_X	500mg/m^3	16 August 2022

	CO	1100mg/m^3	16 August 2022
	SO_2	340mg/m^3	16 August 2022
A3	NO_X	500mg/m^3	16 August 2022
	CO	1100mg/m^3	16 August 2022
	SO_2	340mg/m^3	16 August 2022
A4	No parameter set	No limit set	16 August 2022
A5	No parameter set	No limit set	16 August 2022
A6	No parameter set	No limit set	16 August 2022
A7	NO_X	150mg/m^3	16 August 2022
	CO	50mg/m^3	16 August 2022
	SO_2	10mg/m^3	16 August 2022
	Operational Temperature	>1000°C	16 August 2022
A8	No parameter set	No limit set	16 August 2022
A9	Siloxanes	No limit set	16 August 2022

Effective from 17 August 2022

Release point	Parameter	Limit/ BAT AEL	Effective from
A1	NO_X	500mg/m^3	17 August 2022
	CO	1100mg/m^3	17 August 2022
	SO_2	340mg/m^3	17 August 2022
A2	NO_X	500mg/m^3	17 August 2022
	CO	1100mg/m^3	17 August 2022
	SO_2	340mg/m^3	17 August 2022
A3	NO_X	500mg/m^3	17 August 2022
	CO	1100mg/m^3	17 August 2022
	SO_2	340mg/m^3	17 August 2022
A4	No parameter set	No limit set	17 August 2022
A5	No parameter set	No limit set	17 August 2022
A6	No parameter set	No limit set	17 August 2022
A7	NO_X	No limit set	17 August 2022
	CO	No limit set	17 August 2022
	SO_2	No limit set	17 August 2022
	Operational Temperature	>1000°C	17 August 2022
A8	No parameter set	No limit set	16 August 2022
A9	Siloxanes	No limit set	16 August 2022

Emissions to Air – Article 15(4) Derogations

No derogations

Other IED BREFs relevant to the permit review

There are no specific listed activities within Table S1.1 of the permit that are within scope of other published BREFS.

6. Conclusion

We consider that the revised Waste Treatment BREF and its BAT-AELs provide the opportunity to consider further environmental improvements at Cardiff East Wastewater Treatment Works CHP Facility.

Coupled with the consolidation and modernisation of the permit, we believe this variation provides a sound basis for ongoing regulation of the installation, and we are satisfied that the operator is currently achieving or will be achieving all relevant BAT by 17 August 2022.

We believe that we have ensured compliance with all relevant legal requirements in carrying out this review and making our determination on the variation.

Annex 1: Decision checklist regarding relevant BAT Conclusions

BAT Conclusions for the Waste Treatment Bref were published as Commission Implementing Decision EU 2018/1147 in the Official Journal of the EU on 17 August 2018. There are 53 BAT Conclusions. This checklist 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.

All BAT Conclusions arising are listed by number in order below;

BATc number		**Summary of BAT Conclusion requirement**	**Status/comment** **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
OVERALL ENVIRONMENTAL PERFORMANCE			
1	**Environment Management System (EMS) – <u>ALL</u> of the following:**		
	I.	Management commitment	**Currently Compliant**: Site operates under a certified Integrated Management Systems (IMS). The operator's management system has achieved ISO 9001, ISO 14001 and EN ISO 55001 standard. Document Ref: EN(1) 02 Policy Statement
	II.	Environmental policy development including CI of performance	**Currently Compliant:** Implemented through IMS Document Ref: EN(1) 02 Policy Statement
	III.	Planning and implementing procedures & targets in conjunction with financial planning & investment	**Currently Compliant:** Implemented through IMS Document Ref: SAMP
	IV.	***Implementation of procedures***	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
		(a) Structure & responsibility	**Currently Compliant:** Implemented through IMS. Document Reference: IMS (1) 01 Section 24 Roles and Responsibilities.
		(b) Recruitment, training, awareness & competence	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 13 Training, Awareness and Competence
		(c) Communication	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 14 Communication.
		(d) Employee involvement	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 14 Communication.
		(e) Documentation	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 15 Document Control.
		(f) Effective process control	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 15 Document Control.
		(g) Maintenance programmes	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: Annual Maintenance Schedule & Daily, weekly and monthly checks, IMS (1) 01 Section 20 Monitoring and Measurement.
		(h) Emergency preparedness & response	**Compliant in the Future:** The Operator has stated within their response that there is an Accident Management Plan and Emergency Procedures in place however the plan requires updating to meet BAT standards as described within BAT 21. (Existing Doc Ref: IMS (1) 01 Section 18 and 19; Emergency Procedures EP (3) 01-22; OCNS Security Plan) An Improvement Programme Condition will be included in the Permit to ensure compliance ahead of compliance deadline (IC1)
		(i) Safeguarding compliance with environmental legislation	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 23 and ENF 008 – Environmental Annual Review
	V.	***Checking performance and taking corrective action***	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
		(a) Monitoring & measurement	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 20
		(b) Corrective and preventive action	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 21; Corrective Action Procedure SP (2)03 & WO (3) 32 - Level 3 Procedure Permit Notification & Investigation
		(c) Maintenance of records	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 16, DCWW document control procedure (SP (2)04) and DCWW Document Retention Policy (AM_L_PL1_008)
		(d) Independent (where practicable) internal or external EMS auditing	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 17 and Business Systems Audit Procedure SP (2) 05 – Level 2 Procedure
	VI.	Senior management review of EMS	**Currently Compliant:** Implemented through IMS on Intranet. Document Reference: IMS (1) 01 Section 22 Management Review.
	VII.	Following development of cleaner technologies	**Compliant in the Future**: The Operator did not provide sufficient information in response to this BAT requirement. An Improvement Programme Condition will be included in the Permit to ensure compliance ahead of compliance deadline (IC1)
	VIII.	Whole life cycle considerations when designing a new plant i.e. impacts from eventual decommissioning and throughout its operating life	**Compliant in the Future**: The Operator did not provide sufficient information in response to this BAT requirement. An Improvement Programme Condition will be included in the Permit to ensure compliance ahead of compliance deadline (IC1)
	IX.	Regular sectoral bench marking	**Compliant in the Future**: The Operator did not provide sufficient information in response to this BAT requirement. An Improvement Programme Condition will be included in the Permit to ensure compliance ahead of compliance deadline (IC1)

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	X.	Waste stream management (BAT 2)	**Compliant in the Future**: The Operator did not provide sufficient information in response to this BAT requirement. An Improvement Programme Condition will be included in the Permit to ensure compliance ahead of compliance deadline (IC1)
	XI.	Inventory of wastewater & waste gas streams (BAT 3)	**Compliant in the Future**: The Operator did not provide sufficient information in response to this BAT requirement. An Improvement Programme Condition will be included in the Permit to ensure compliance ahead of compliance deadline (IC1)
	XII.	Residues Management Plan – S6.5	**Compliant in the Future**: The Operator did not provide any information in response to this BAT requirement. An Improvement Programme Condition will be included in the Permit to ensure compliance ahead of compliance deadline (IC1)
	XIII.	Accident Management Plan – S6.5	**Compliant in the Future:** The Operator has stated within their response that there is an Accident Management Plan in place however the plan requires updating to meet BAT standards as described within BAT 21. (Existing Doc Ref: Critical Parameters Board WOF008 and IMS (1) 01 Section 18 and 19; Emergency Procedures EP (3) 01-22; OCNS Security Plan) An Improvement Programme Condition will be included in the Permit to ensure compliance ahead of compliance deadline (IC1)
	XIV.	Odour Management Plan (BAT 12)	**Currently Compliant**: Although the applicability of this BATc is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated (which is not the case for this site) the Operator still implements an Odour Management Plan (Environmental Impact Control Plan). Protocols for conducting odour monitoring in

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			accordance with BAT 12 may be reviewed in the event odour nuisances are substantiated
	XV.	Noise & Vibration Management Plan (BAT 17)	**Not applicable**: Operations on site have not given rise to any substantiated noise or vibration nuisance at sensitive receptors therefore this BAT Conclusion is not applicable.
2	**Improving overall environmental performance – <u>ALL</u> of the following:**		
	a.	Set up and implement waste characterisation & pre-acceptance procedures	**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 2 prior to compliance deadline (IC1)
	b.	Set up and implement waste acceptance procedures	**As above**
	c.	Set up and implement a waste tracking system & inventory	**As above**
	d.	Set up and implement an output quality management system	**As above**
	e.	Ensure waste segregation	**As above**
	f.	Ensure waste compatibility prior to mixing or blending	**As above**
	g.	Sort solid incoming waste – S6.4	**As above**
3	**Establish and maintain a wastewater and waste gas inventory as part of the EMS - <u>ALL</u> of the following:**		
	Information on characteristics of waste and waste treatment processes		
	(i)(a)	simplified process flow sheets showing emission sources	**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion.

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 3 prior to compliance deadline (IC1)
	(i)(b)	Process-integrated and wastewater/waste gas treatment descriptions including performance	**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 3 prior to compliance deadline (IC1)
	Information on characteristics of wastewater streams		
	(ii)(a)	*Mean and variability of:*	
		Flow	**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 3 prior to compliance deadline (IC1)
		pH	**As above**
		Temperature	**As above**
		Conductivity	**As above**
	(ii)(b)	*Mean concentration, load and variability of:*	
		Total suspended solids	**As above**
		COD/TOC	**As above**
		Nitrogen species	**As above**
		Phosphorous	**As above**
		Metals	**As above**

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
		Priority substances/micropollutants	**As above**
		Any other relevant compounds	**As above**
	(ii)(c)	*Bioeliminability data (see BAT 52):*	
		BOD	**As above**
		BOD to COD ratio	
		Zahn-Wellens test	
		Biological inhibition potential	
	Information on characteristics of waste gas streams		
	(iii)(a)	*Mean and variability of:*	
		Flow	**As above**
		temperature	
	(iii)(b)	*Mean concentration, load and variability of relevant substances:*	
		Organic compounds	**As above**
		POPs e.g. PCBs	
		Any other relevant compounds	
	(iii)(c)	Flammability	
		Lower and Higher Explosive Limits	
		Reactivity	
	(iii)(d)	*Presence of other substances that may affect the gas treatment system or plant safety:*	
		O2	**As above**
		N2	
		Water vapour	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
		Dust	
4	**Reducing environmental risk associated with waste storage – <u>ALL</u> of the following:**		
	a.	Optimised storage location	**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 4 prior to compliance deadline (IC1)
	b.	Adequate storage capacity	**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 4 prior to compliance deadline (IC1)
	c.	Safe storage operation	**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 4 prior to compliance deadline (IC1)
	d.	Separate area for storage & handling of packaged hazardous waste	**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 4 prior to compliance deadline (IC1)
5	**Set up and implement procedures to reduce the environmental risk associated with handling and transfer of waste - include following elements:**		
	Carried out by competent staff		**Compliant in the Future:** The Operator has not provided sufficient details in order to demonstrate full compliance with this BAT conclusion.
	Duly documented, validated and verified		

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Spill prevention, detection and mitigation measures	An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 5 prior to compliance deadline (IC1)
	Take precautions when mixing or blending wastes	
	Procedures are risk-based and consider likelihood of accidents, incidents and their environmental impact	
	MONITORING	
	Relevant emissions to water: monitor key process parameters at key locations	
	Key process parameters	
	Wastewater flow	**Currently Compliant:** All discharges from site are directed to the head of the adjacent Wastewater treatment works. As the permitted activities are situated within the confines of the treatment works, unlike with a 3rd party trader discharging to sewer there is no Trade Effluent Consent and all discharges are contained within the confines of the WwTW site.
	pH	
	Temperature	
	Conductivity	
6	BOD	
	Other process parameters	
	Key monitoring locations	
	Pre-treatment inlet and/or outlet	As above
	Final treatment inlet	
	Discharge point (to the environment)	
	Other location	
7	Monitoring emissions to water (refer to table)	**Currently Compliant:** The Operator has stated N/a to this BAT conclusion; however, all discharges from the site are discharged to the inlet of the Cardiff WwTW upon which the site is located. Unlike with a
	Monitoring parameters depend on waste treatment process(es) involved	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			3rd party trader discharging to sewer there is no Trade Effluent Consent for this. There is still however a discharge emission. This is reflected within the permit.
8	Monitoring emissions to air (refer to table)		**Currently Compliant:** The Operator has confirmed that all point source emissions to air from site operations are already identified within the permit with appropriate emission limited included. Emission limits associated with the existing boilers will need to be amended in the permit prior to the relevant statutory deadline as they are captured under the Medium Combustion Plant Directive (MCPD)
	Monitoring parameters depend on waste treatment process(es) involved		
9	**Monitoring diffuse emissions of organic compounds to air from processes involving solvents. Use one or a combination of the following:**		
	a	Measurement – S6.2 descriptions	**Not applicable:** Operator has confirmed within their response that there are no activities involving solvents at the AD plant
	b	Emissions factor calculation	
	c	Mass balance calculation	
10	**Periodically monitor odour emissions where nuisance is expected and/or has been substantiated (monitoring frequency is outlined in BAT 12)**		
	Use EN standards e.g. 13725 or 16841		**Currently Compliant**: Although the applicability of this BATc is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated (which is not the case for this site) the Operator still implements an Odour Management Plan (Environmental Impact Control Plan). Protocols for conducting odour monitoring in accordance with BAT 10 may be reviewed in the event odour nuisances are substantiated
	Use equivalent methods e.g. ISO / national / international monitoring standards		
11	**Annual monitoring for:**		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	- **Water, energy and raw materials**		**Compliant in Future**: The permit sets out reporting parameters that will form part of the annual report submitted to the Regulator at the end of January each year. Additional process data shall be included as part of the updated reporting forms issued as part of permit variation
	- **Generation of residues and wastewater**		
EMISSIONS TO AIR			
12	**Set up, implement and review an Odour Management Plan (as part of the site EMS) where nuisance is expected and/or has been substantiated. Include <u>ALL</u> of the following:**		
	Protocol containing actions and timelines		**Currently Compliant**: Although the applicability of this BATc is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated (which is not the case for this site) the Operator still implements an Odour Management Plan (Environmental Impact Control Plan). Protocols for conducting odour monitoring in accordance with BAT 12 may be reviewed in the event odour nuisances are substantiated
	Protocol for conducting odour monitoring (BAT 10)		
	Protocol for response to odour incidents/complaints		
	Odour prevention and reduction programme		
13	**Techniques to prevent, or where not practicable reduce odour emissions. Use one or a combination of the following:**		
	a.	Minimising residence times (open systems only)	**Not applicable** The Operator has confirmed that site activities do not include open systems
	b.	Use chemical treatment (N/A if desired output is hampered)	**Compliant in the Future** Operator has stated the site implements technique b of BAT 13 for the reduction of odour emissions. Site Documentation includes Odour Control in the Works Operation Manual

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			(WOM) A series of odour control units are located around the WwTW site, together constituting the overall site odour control system. Operator has not however provided sufficient information to demonstrate how the site meets BAT a standard. An improvement condition has been included within the permit to ensure compliance with BAT 13 prior to deadline (IC1).
	c.	Optimising aerobic treatment – see examples. Refer to BAT 36 for wastes other than water-based liquid waste.	**Not applicable** Site activities do not involve any aerobic treatment of waste
14	**Techniques to prevent, or where not practicable reduce diffuse emissions to air, in particular of dust, organic compounds and odour. Use one or a combination of the following:**		
	a.	Minimising potential diffuse emission sources – see examples	**Compliant in the Future**: The Operator has stated within their response that the site does not currently meet BAT 14 and that further engineering assessment is required. An improvement condition has been included within the permit to ensure compliance with BAT 14 prior to deadline (IC1).
	b.	Select and use high-integrity equipment – see examples	As above
	c.	Corrosion prevention – see examples	As above
	d.	Containment, collection and treatment of diffuse emissions – see examples	As above
	e.	Dampening (with water or fog)	**Not applicable** Site activities does not include dampening (with water or fog)
	f.	Maintenance – see examples	**Compliant in the Future**: The Operator has stated within their response that the operator implements a maintenance schedule with Statutory Maintenance dept. Alarms on PVSS. No further evidence has been

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			provided. An improvement condition has been included within the permit to ensure compliance with BAT 14 prior to deadline (IC1).
	g.	Cleaning of waste treatment and storage areas – see examples	As above
	h.	Leak Detection and Repair (LDAR) programme for organics – S6.2	As above
15	**Use flaring only for safety reasons or non-routine operating conditions (OTNOC). Use <u>both</u> of the following:**		
	a.	Correct plant design – see examples	**Compliant in the Future:** Operator has advised the flare is built to specifications at time of Implementation however no further information has been provided to confirm if the flare has been designed to meet BAT standards. An improvement condition has been included within the permit to ensure compliance with BAT 15 prior to deadline (IC1).
	b.	Plant management including gas system balancing and advanced process control	**Currently Compliant:** Operator has advised the flare is built to specifications at time of Implementation. The gas system balancing, and advanced process control is managed through their SCADA Control System with primary gas consumers (CHP engines/boilers) taking preferential treatment for gas consumption.
16	**Reduce emissions to air when flaring is unavoidable. Use <u>both</u> of the following:**		
	a.	Correct design of flaring devices – see examples	**Currently Compliant**: Operator has advised the flare is built to specifications at time of Implementation. Flare designed to 150% of biogas. Monitoring flare event via flow metre. And report annually as per permit requirements
	b.	Monitoring and recording as part of flare management – see examples	**Currently Compliant:** Operator has advised site records operating hours and, when greater than 10% of the year, they report as part of their annual permit returns. Part of Annual reporting when above 10% of

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			time. An H1 assessment has been undertaken to document the performance of the waste gas burner and the significance of its emissions when they exceed permit Emissions Limit Values.
NOISE AND VIBRATIONS			
17	**Set up, implement, and regularly review a Noise and Vibration Management Plan (as part of the EMS) where nuisance is expected and/or has been substantiated. Include <u>ALL</u> of the following:**		
	I.	Protocol with actions and timelines	**Not applicable**: Operations on site have not given rise to any substantiated noise or vibration nuisance at sensitive receptors therefore this BAT Conclusion is not applicable.
	II.	Noise and vibration monitoring plan/protocol	
	III.	Noise & vibration complaint response plan/protocol	
	IV.	Noise and vibration reduction programme	
18	**Techniques to prevent, or where not practicable reduce noise and vibration emissions. Use one or a combination of the following:**		
	a.	Appropriate location of equipment and buildings	**Not applicable**: Operations on site have not given rise to any substantiated noise or vibration nuisance at sensitive receptors therefore this BAT Conclusion is not applicable
	b.	Operational measures – see examples	
	c.	Low-noise equipment – see examples	
	d.	Noise & vibration control equipment – see examples	
	e.	Noise attenuation – see examples	
EMISSIONS TO WATER			

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
19	**Optimise water consumption, reduce wastewater generation and prevent or where not practicable reduce emissions to soil and water. Use one or a combination of the following:**		
	a.	Water management – see examples	**Compliant in the Future**: The Operator has stated within their response that the site does not currently meet BAT 19 and that further engineering assessment is required. An improvement condition has been included within the permit to ensure compliance with BAT 19 prior to deadline (IC1).
	b.	Water recirculation	
	c.	Impermeable surface	
	d.	Reduce likelihood and impact of tank/vessel overflows and failures – see examples	**Compliant in the Future**: The Operator has stated within their response that the site does not currently meet BAT 19 and that further engineering assessment is required. An improvement condition has been included within the permit to ensure compliance with BAT 19 (d) prior to deadline (IC2).
	e.	Roofing of waste storage and treatment areas	**Compliant in the Future**: The Operator has stated within their response that the site does not currently meet BAT 19 and that further engineering assessment is required. An improvement condition has been included within the permit to ensure compliance with BAT 19 prior to deadline (IC1).
	f.	Segregation of water streams (being mindful of existing plant constraints)	
	g.	Adequate drainage infrastructure	
	h.	Design and maintenance provisions to allow risk-based leak detection and repair. Minimise use of underground components.	
	i.	Appropriate buffer storage capacity (being mindful of existing plant constraints)	
20	**Treat wastewater using a combination of:**		
	Preliminary, primary and general treatment		
	a.	Equalisation	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	b.	Neutralisation	**Not applicable**: Operator has stated N/a within their response as there is no physico-chemical treatment of wastewater from the Facility
	c.	Physical separation	
	Physico-chemical treatment		
	d.	Adsorption	**Not applicable**: Operator has stated N/a within their response as there is no physico-chemical treatment of wastewater from the Facility
	e.	Distillation/rectification	
	f.	Precipitation	
	g.	Chemical oxidation	
	h.	Chemical reduction	
	i.	Evaporation	
	j.	Ion exchange	
	k.	Stripping	
	Biological treatment		
	l.	Activated sludge process	**Not applicable**: Operator has stated within their response that there are sequencing batch reactors however no further information has been provided. An improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 20 prior to compliance deadline (IC1)
	m.	Membrane bioreactor	
	Nitrogen removal		
	n.	Nitrification/denitrification (where biological treatment used)	**Not applicable**: Operator has stated N/a within their response as there is no Nitrogen removal treatment of wastewater from the Facility
	Solids removal		
	o.	Coagulation and flocculation	
	p.	Sedimentation	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	q.	Filtration (sand, micro, ultra)	**Not applicable**: Operator has stated N/a within their response as there is no solids removal of wastewater from the Facility. Grit removal takes place upstream at the WwTW inlet screens/macerator
	r.	Flotation	
	BAT-AELs for DIRECT discharges to a receiving waterbody (mg/l)		
	Table 6.1 and its supporting notes. Monitoring requirements are outlined in BAT 7		
	TOC	10.0-60	**Not applicable**: Operator has stated N/a within response as there are no DIRECT discharges from the Facility to a receiving waterbody
		10-100 for water-based liquid waste	
	COD (TOC is preferred)	30-180	
		30-300 for water-based liquid waste	
	Suspended solids	5.0-60	
	HOI	0.5-10 applying to specific waste treatments	
	Total N	1-25 for biological treatment and waste oil re-refining	
		10-60 for water-based liquid waste	
	Total P	0.3-2 for biological treatment	
		1-3 for water-based liquid waste	
	Phenol	0.05-0.2 for waste oil re-refining and physio-chemical treatment of waste with CV	
		0.05-0.3 for water-based liquid waste	
	Free CN-	0.02-0.1 for water-based liquid waste	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	AOX	0.2-1 for water-based liquid waste	
	Metals & Metalloids – specific waste treatments as listed in Table 6.1		
	As	0.01-0.05	**Not applicable**: Operator has stated N/a within response as there are no DIRECT discharges from the Facility to a receiving waterbody
	Cd	0.01-0.05	
	Cr	0.01-0.15	
	Cu	0.05-0.5	
	Pb	0.05-0.1	
	Ni	0.05-0.5	
	Hg	0.5-5	
	Zn	0.1-1	
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	**Not applicable**: Operator has stated N/a within response as there are no DIRECT discharges from the Facility to a receiving waterbody.
	Cd	0.01-0.1	
	Cr	0.01-0.3	
	Hexavalent Cr [Cr(VI]	0.01-0.1	
	Cu	0.05-0.5	
	Pb	0.05-0.3	
	Ni	0.05-1	
	Hg	1.0-10	

BATc number	Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Zn	0.1-2	
	BAT-AELs for INDIRECT discharges to a receiving waterbody (mg/l)		
	Table 6.2 and its supporting notes. Monitoring requirements are outlined in BAT 7		
	HOI	0.5-10 applying to specific waste treatments	**Not applicable**: Operator has stated N/a within response as there are no INDIRECT discharges from the Facility. All discharges from the site are returned back to the inlet of the adjacent Cardiff WwTW upon which the site is located (as referenced as emissions point S1 within the permit). Unlike with a third-party trader discharging to sewer, there is no Trade Effluent Consent in place for this discharge. Dwr Cymru Cyfyngedig consider discharge into the Cardiff WwTW would be insignificant as the Dry Weather Flow of the WwTW is 309,960m3/day whilst the maximum daily flow rate is 523,584m3/day and maximum flow rate is 7,500l/s. No further assessment has been requested from the Operator.
	Free CN-	0.02-0.1 for water-based liquid waste	
	AOX	0.2-1 for water-based liquid waste	
	Metals & Metalloids – specific waste treatments as listed in Table 6.2		
	As	0.01-0.05	**Not applicable**: Operator has stated N/a within response as there are no INDIRECT discharges from the Facility. All discharges from the site are returned back to the inlet of the adjacent Cardiff WwTW upon which the site is located (as referenced as emissions point S1 within the permit). Unlike with a third-party trader discharging to sewer, there is no Trade Effluent Consent in place for this discharge. Dwr Cymru Cyfyngedig consider discharge into the Cardiff WwTW would be insignificant as the Dry Weather Flow of the WwTW is 309,960m3/day whilst the maximum daily flow rate is 523,584m3/day and maximum flow rate is 7,500l/s. No further assessment has been requested from the Operator.
	Cd	0.01-0.05	
	Cr	0.01-0.15	
	Cu	0.05-0.5	
	Pb	0.05-0.1	
	Ni	0.05-0.5	
	Hg	0.5-5	
	Zn	0.1-1	
	Metals & Metalloids – treatment of water-based liquid waste		
	As	0.01-0.1	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Cd	0.01-0.1	**Not applicable**: Operator has stated N/a within response as there are no INDIRECT discharges from the Facility. All discharges from the site are returned back to the inlet of the adjacent Cardiff WwTW upon which the site is located (as referenced as emissions point S1 within the permit). Unlike with a third-party trader discharging to sewer, there is no Trade Effluent Consent in place for this discharge. Dwr Cymru Cyfyngedig consider discharge into the Cardiff WwTW would be insignificant as the Dry Weather Flow of the WwTW is 309,960m3/day whilst the maximum daily flow rate is 523,584m3/day and maximum flow rate is 7,500l/s. No further assessment has been requested from the Operator.
	Cr	0.01-0.3	
	Hexavalent Cr [Cr(VI]	0.01-0.1	
	Cu	0.05-0.5	
	Pb	0.05-0.3	
	Ni	0.05-1	
	Hg	1.0-10	
	Zn	0.1-2	
EMISSIONS FROM ACCIDENTS AND INCIDENTS			
21	**Techniques to prevent or limit the environmental consequences of accidents and incidents, as part of the Accident Management Plan. Use <u>ALL</u> of the following:**		
	a.	Protection measures – see examples	**Compliant in the Future:** The Operator has stated within their response that there is an Accident Management Plan in place however the plan requires updating to meet BAT standards. (Existing Doc Ref: Critical Parameters Board WOF008 and IMS (1) 01 Section 18 and 19; Emergency Procedures EP (3) 01-22; OCNS Security Plan)
	b.	Management of incidental or accidental emissions	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	c.	Incident/accident registration and assessment system – see examples	An improvement condition has thus been included within the permit to ensure compliance with BAT 21 prior to compliance deadline (IC1)
MATERIAL EFFICIENCY			
22	**Use materials efficiently by substituting materials with waste e.g. waste acids/alkalis for pH adjustment, fly ashes for binders**		**Compliant in the Future:** The Operator has stated within their response that final effluent is used in the plant as opposed to potable water however no further details have been provided in order to demonstrate full compliance with this BAT conclusion. Thus, an improvement condition has been included within the permit to ensure compliance with BAT 22 prior to compliance deadline (IC1)
ENERGY EFFICIENCY			
23	**Use energy efficiently by using <u>both</u> of the following techniques:**		
	a.	Energy efficiency plan	**Compliant in the Future**: The Operator has stated within their response that energy efficiency is considered within the AMP 7 investment program Energy Plan. This plan does not include an improvement plan at site/facility level but provides the level of improvement that the operator will target as a company and the metrics used to monitor progress. The Operators site optimisation team are developing improvement plans for each facility, which is currently ongoing. As the Operator has not provided further details or sufficient information in order to demonstrate full compliance with this BAT conclusion at this
	b.	Energy balance record	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			stage, an improvement condition has been included within the permit to ensure compliance with BAT 23 prior to compliance deadline (IC1)
REUSE OF PACKAGING			
24	**Maximise the reuse of packaging as part of a Residues Management Plan (see BAT 1 XII.)**		**Compliant in the Future**: The Operator has not however provided sufficient information in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit to ensure compliance with BAT 24 prior to compliance deadline (IC1)
MECHANICAL TREATMENT OF WASTE (GENERAL BAT)			
25	**Reduce emissions to air of dust, particulate-bound metals, PCDD/F and dioxin-like PCBs by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Cyclone – see S6.1	**Not applicable** Operator has confirmed within response that there are no activities involving the mechanical treatment of waste undertaken at the Facility
	b.	Fabric filter – see S6.1	
	c.	Wet scrubbing – see S6.1	
	d.	Water injection into the shredder	
	BAT-AEL for channelled dust emissions to air from the mechanical treatment of waste (mg/Nm3)		
	Table 6.3 and its supporting note. Monitoring requirements are outlined in BAT 8		
	Dust	2.0-5.0	As above

BATc number	Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
MECHANICAL TREATMENT OF METAL WASTE BY SHREDDING			
26	**Improve overall environmental performance and prevent emissions due to accidents and incidents. Use BAT 14g <u>AND ALL</u> of the following techniques:**		
	(a)	Detailed inspection procedure for baled waste before shredding	**Not applicable**: Operator has confirmed within response that there are no activities involving the mechanical treatment of metal waste by shredding undertaken at the Facility
	(b)	Remove dangerous items from waste inputs and dispose of them in a safe manner	
	(c)	Treatment of containers accompanied by a declaration of cleanliness	
27	**Prevent deflagrations and reduce emissions from deflagrations. Use technique a. <u>AND ONE OR BOTH</u> of techniques b. and c.**		
	a.	Deflagration management plan with reduction programme, incident review and response protocol	**Not applicable**: Operator has confirmed within response that there are no activities involving the mechanical treatment of metal waste by shredding undertaken at the Facility
	b.	Pressure relief dampers	
	c.	Pre-shredding (device)	
28	**Use energy efficiently by keeping the shredder feed stable**		**Not applicable:** Operator has confirmed within response that there are no activities involving the mechanical treatment of metal waste by shredding undertaken at the Facility
MECHANICAL TREATMENT OF WEEE CONTAINING VFCS AND/OR VHCS			
29	**Techniques to prevent, or where not practicable reduce emissions of organic compounds to air. Apply BAT 14d <u>AND</u> BAT14h <u>AND</u> technique a. <u>AND ONE OR BOTH</u> of techniques b. and c.**		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	a.	Optimised removal and capture of refrigerants and oils	**Not applicable** Operator has confirmed within response that there are no activities involving the mechanical treatment of WEE containing VFCs and/or VHCs undertaken at the Facility
	b.	Cryogenic condensation	
	c.	Adsorption	
	BAT-AELs for channelled TVOC and CFC emissions to air from treatment of WEEE containing VFCs and/or VHCs (mg/Nm3)		
	Table 6.4. Monitoring requirements are outlined in BAT 8		
	TVOC	3.0-15	As above
	CFCs	0.5-10	
30	**Prevent emissions due to explosions when treating WEEE containing VFCs and/or VHCs. Use <u>EITHER</u> of the following techniques:**		
	a.	Inert atmosphere e.g. N2	**Not applicable** Operator has confirmed within response that there are no activities involving the mechanical treatment of WEE containing VFCs and/or VHCs undertaken at the Facility
	b.	Forced ventilation	
MECHANICAL TREATMENT OF WASTE WITH CALORIFIC VALUE			
31	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Not applicable** Operator has confirmed within response that there are no activities involving the mechanical treatment of metal waste with calorific value undertaken at the Facility
	b.	Biofilter – see S6.1	
	c.	Thermal oxidation – see S6.1	
	d.	Wet scrubbing – see S6.1	
	BAT-AEL for channelled TVOC emissions to air from the mechanical treatment of waste with calorific value (mg/Nm3)		
	Table 6.5 and its supporting note. Monitoring requirements are outlined in BAT 8		
	TVOC	10.0-30.0	As above

BATc number	Summary of BAT Conclusion requirement		Status/comment **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
MECHANICAL TREATMENT OF WEEE CONTAINING MERCURY			
32	**Reduce mercury emissions to air by collecting them at source, sending them to abatement and carrying out adequate monitoring. This includes <u>ALL</u> of the following:**		
	Equipment is enclosed, under negative pressure and connected to a LEV system		**Not applicable** Operator has confirmed within response that there are no activities involving the mechanical treatment of WEEE containing mercury undertaken at the Facility
	Waste gas treated using dedusting techniques – see examples – followed by adsorption on activated carbon		
	Monitoring of waste gas treatment efficiency		
	Mercury levels measured at least weekly within treatment and storage areas		
	BAT-AEL for channelled mercury (Hg) emissions to air from the mechanical treatment of WEEE containing mercury (µg/Nm3)		
	Table 6.6. Monitoring requirements are outlined in BAT 8		
	Hg	2.0-7.0	As above
BIOLOGICAL TREATMENT OF WASTE (GENERAL BAT)			
33	**Reduce odour emissions and improve overall environmental performance by selecting the waste input (to ensure its suitability for biological treatment). See also BAT 2**		**Compliant in the Future:** The Operator has not provided sufficient information in order to demonstrate full compliance with this BAT conclusion. Thus, an improvement condition has been included within the permit to ensure compliance with BAT 33 prior to compliance deadline (IC1)

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
34	**Reduce emissions to air of dust, organic compounds and odorous compounds (including H2S & NH3) by using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Compliant in the Future**: The Operator has not provided sufficient information in order to demonstrate full compliance with this BAT conclusion. This includes potential emissions from the Siloxane removal plant. Thus, an improvement condition has been included within the permit to ensure compliance with BAT 34 prior to compliance deadline (IC1)
	b.	Biofilter – see S6.1	
	c.	Fabric filter – see S6.1.	
	d.	Thermal oxidation – see S6.1	
	e.	Wet scrubbing – see S6.1	
	BAT-AEL for channelled NH3, odour, dust and TVOC emissions to air from the biological treatment of waste (mg/Nm3) (ou_E/m3)		
	Table 6.7 and its supporting notes. Monitoring requirements are outlined in BAT 8		
	NH3	0.3-20	**Compliant in the Future**: The Operator has not provided sufficient information in order to demonstrate full compliance with this BAT conclusion. This includes potential emissions from the Siloxane removal plant. Thus, an improvement condition has been included within the permit to ensure compliance with BAT 34 prior to compliance deadline (IC1)
	Odour	200-1000	
	Dust	2.0-5.0	
	TVOC	5.0-40	
35	**Reduce the generation of wastewater and reduce water usage by using <u>ALL</u> of the following:**		
	a.	Segregation of water streams (see also BAT 19f)	**Compliant in the Future**: The Operator has not provided sufficient information in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the permit to ensure compliance with BAT 35 prior to compliance deadline (IC1)
	b.	Water recirculation	**Compliant in the Future**: The Operator has not provided sufficient information in order to demonstrate full compliance with this BAT conclusion. An improvement condition has been included within the

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
			permit to ensure compliance with BAT 35 prior to compliance deadline (IC1)
	c.	Minimisation of the generation of leachate	**Not applicable** Operator has confirmed N/a within response that the site does not generate leachate
BIOLOGICAL TREATMENT OF WASTE: AEROBIC METHODS			
36	**Reduce emissions to air and improve overall environmental performance by monitoring and/or controlling key waste and process parameters. Include following elements:**		
	Waste input characteristics e.g. C to N ratio, particle size		**Not applicable** Operator has confirmed within response that there are no activities involving the biological treatment of waste using aerobic methods of waste undertaken at the Facility
	Temperature and moisture content within windrows (Moisture monitoring not needed for enclosed processes where H&S issues have been identified)		
	Aeration of the windrow		
	Windrow porosity, height and width		
37	**Reduce diffuse emissions to air of dust, odour and bioaerosols from open-air treatment steps. Use <u>ONE OR BOTH</u> of the following techniques:**		
	a.	Use of semi-permeable membrane covers	**Not applicable** Operator has confirmed within response that there are no activities involving the biological treatment of waste using aerobic methods of waste undertaken at the Facility
	b.	Adaptation of operations to the meteorological conditions	
BIOLOGICAL TREATMENT OF WASTE: ANAEROBIC METHODS			

BATc number	Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
38	**Reduce emissions to air and improve overall environmental performance by monitoring and/or controlling key waste and process parameters. Include following elements:**	
	Implement a manual and/or automatic monitoring system to:	
	Ensure a stable digester operation	**Compliant in the Future**: The Operator has stated within their response that weekly samples and daily monitoring and control of feed are carried out to ensure a stable digester operation and minimise odour emissions. Documentation referenced in response were Digester Help Sheet and PVSS however copies of these documents were not included. As the Operator has not provided further details or sufficient information in order to demonstrate full compliance with this BAT conclusion an improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 38 prior to compliance deadline (IC1)
	Minimise operational difficulties and associated odour emissions	
	Provide sufficient early warning of system failures	
	Monitoring and/or control of key waste and process parameters – examples below:	
	pH and alkalinity of the digester feed	**Compliant in the Future**: The Operator has stated within their response that weekly samples and daily monitoring and control of feed are carried out to ensure a stable digester operation and minimise odour emissions. Documentation referenced in response were Digester Help Sheet and PVSS however copies of these documents were not included. As the Operator has not provided further details or sufficient information in order to demonstrate full compliance with this BAT conclusion an improvement condition has been included within the permit for the sites process monitoring procedures to be amended to ensure compliance with BAT 38 prior to compliance deadline (IC1)
	Digester operating temperature	
	Hydraulic and organic loading rates of the digester feed	
	Volatile fatty acids and NH3 concentrations within digester & digestate	
	Biogas quantity, composition (e.g. H2S) and pressure	
	Liquid and foam levels in the digester	
MECHANICAL BIOLOGICAL TREATMENT (MBT) OF WASTE		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
39	**Reduce emissions to air. Generally applicable to new plants, existing plants may have layout constraints. Use <u>BOTH</u> of the following techniques:**		
	a.	Segregation of the waste gas streams (refer to inventory described in BAT 3)	**Not applicable** Operator has confirmed within response that there are no activities involving the mechanical biological treatment (MBT) of waste undertaken at the Facility
	b.	Recirculation of waste gas. Waste gas treatment is described in BAT 34 and recirculation in BAT 35.	
PHYSICO-CHEMICAL TREATMENT OF SOLID AND/OR PASTY WASTE			
40	**Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.**		
	Monitoring the waste input		
	Content of organics, oxidising agents, metals, salts, odorous compounds		**Not applicable** Operator has confirmed within response there are no activities involving the physico-chemical treatment of solid and/or pasty waste
	H2 formation potential upon mixing of flue-gas treatment residues/ashes with water		
41	**Reduce emissions to air of dust, organic compounds and NH3 by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Not applicable** Operator has confirmed within response there are no activities involving the physico-chemical treatment of solid and/or pasty waste
	b.	Biofilter – see S6.1	
	c.	Fabric filter – see S6.1.	
	d.	Wet scrubbing – see S6.1	

BATc number	Summary of BAT Conclusion requirement		Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	BAT-AEL for channelled NH3, odour, dust and TVOC emissions to air from the physico-chemical treatment of solid and/or pasty waste (mg/Nm3)		
	Table 6.8. Monitoring requirements are outlined in BAT 8		
	Dust	2.0-5.0	**Not applicable** Operator has confirmed within response there are no activities involving the physico-chemical treatment of solid and/or pasty waste
	RE-REFINING OF WASTE OIL		
42	**Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.**		
	Monitoring the waste input		
	Chlorinated compounds e.g. solvents or PCBs		**Not applicable** Operator has confirmed within response there are no activities involving the re-refining of waste oil undertaken at the Facility
43	**Reduce quantity of waste sent for disposal by using <u>ONE OR BOTH</u> of the following techniques:**		
	a.	Material recovery e.g. organic residues in asphalt products	**Not applicable** Operator has confirmed within response there are no activities involving the re-refining of waste oil undertaken at the Facility
	b.	Energy recovery	
44	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Not applicable** Operator has confirmed within response there are no activities involving the re-refining of waste oil undertaken at the Facility
	b.	Thermal oxidation – see S6.1	
	c.	Wet scrubbing – see S6.1	
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies.		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	Monitoring requirements are outlined in BAT 8		
PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CALORIFIC VALUE			
45	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Not applicable** Operator has confirmed within response there are no activities involving the physico-chemical treatment of waste with calorific value at the Facility
	b.	Cryogenic condensation – see S6.1	
	c.	Thermal oxidation – see S6.1	
	d.	Wet scrubbing – see S6.1	
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies.		
	Monitoring requirements are outlined in BAT 8		
REGENERATION OF SPENT SOLVENTS			
46	**Improve overall environmental performance by using <u>ONE OR BOTH</u> of the following techniques:**		
	a.	Material recovery (by evaporation from distillation residues)	**Not applicable** Operator has confirmed within response there are no activities involving the regeneration of spent solvents undertaken at the Facility
	b.	Energy recovery e.g. using distillation residues	
47	**Reduce emissions to air of organic compounds by applying BAT 14d <u>AND</u> using <u>a combination of</u> the following techniques:**		
	a.	Recirculation of process off-gases in a steam boiler. Avoid generating PCBs and/or PCDD/Fs	**Not applicable** Operator has confirmed within response there are no activities involving the regeneration of spent solvents undertaken at the Facility
	b.	Adsorption – see S6.1	

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	c.	Thermal oxidation – see S6.1. Avoid generating PCBs and/or PCDD/Fs	
	d.	Condensation or cryogenic condensation	
	e.	Wet scrubbing – see S6.1	
	The BAT-AEL for TVOC emissions to air set in Section 4.5 (below) applies.		
	Monitoring requirements are outlined in BAT 8		
BAT-AEL FOR EMISSIONS OF ORGANIC COMPOUNDS TO AIR – SECTION 4.5			
(RE-REFINING OF WASTE OIL)			
(PHYSICO-CHEMICAL TREATMENT OF WASTE WITH CV)			
(REGENERATION OF SPENT SOLVENTS)			
	BAT-AEL for channelled TVOC emissions to air from the re-refining of waste oil, physico-chemical treatment of waste with calorific value and regeneration of spent solvents (mg/Nm3)		
	Table 6.9 and its supporting note. Monitoring requirements are outlined in BAT 8		
	TVOC	5.0-30	As above
THERMAL TREATMENT OF SPENT ACTIVATED CARBON, WASTE CATALYSTS AND EXCAVATED CONTAMINATED SOIL			
48	**Improve overall environmental performance by using <u>ALL</u> of the following techniques:**		
	a.	Heat recovery from the furnace off-gas e.g. for preheating combustion air or steam generation	**Not applicable** Operator has confirmed within response there are no activities involving the thermal treatment of spent activated carbon,

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	b.	Indirectly fired furnace i.e. avoids contact between the furnace contents and the burner flue-gases. Note applicability constraints.	waste catalysts and excavated contaminated soil undertaken at the Facility
	c.	Process-integrated techniques to reduce emissions to air – see examples	
49	**Reduce emissions to air of HCl, HF, dust and organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Cyclone – see S6.1	**Not applicable** Operator has confirmed within response there are no activities involving the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil undertaken at the Facility
	b.	Electrostatic precipitator (ESP) – see S6.1	
	c.	Fabric filter – see S6.1	
	d.	Wet scrubbing – see S6.1	
	e.	Adsorption – see S6.1	
	f.	Condensation – see S6.1	
	g.	Thermal oxidation – see S6.1	
	Note supporting text for BAT 49g (thermal oxidation)		
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
WATER WASHING OF EXCAVATED CONTAMINATED SOIL			
50	**Reduce emissions to air of dust and organic compounds from the storage, handling and washing steps by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	a.	Adsorption – see S6.1	**Not applicable** Operator has confirmed within response there are no activities involving the washing of excavated contaminated soils at the Facility
	b.	Fabric filter – see S6.1	
	c.	Wet scrubbing – see S6.1	
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
Decontamination of equipment containing PCBs			
51	**Reduce emissions to air of PCBs and organic compounds and improve overall environmental performance by using <u>ALL</u> of the following techniques:**		
	a.	Coating of the storage and treatment areas – see examples	**Not applicable** Operator has confirmed within response there are no activities involving the decontamination of equipment containing PCBs undertaken at the Facility
	b.	Implementation of staff access rules to prevent dispersion of contamination – see examples	
	c.	Optimised equipment cleaning and drainage – see examples	
	d.	Control and monitoring of emission to air – see examples	
	e.	Disposal of waste treatment residues – see examples	
	f.	Recovery of solvent when solvent washing is used	
	Monitoring requirements are outlined in BAT 8. No BAT-AELs have been set for this BATc.		
TREATMENT OF WATER-BASED LIQUID WASTE			

BATc number		Summary of BAT Conclusion requirement	Status/comment One of the following: Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
52	**Improve overall environmental performance by monitoring the waste input as part of the waste pre-acceptance and acceptance procedures. See also BAT 2.**		
	Monitoring the waste input		
	Bioeliminability e.g. BOD, BOD-COD ratio, Zahn-Wellens test, biological inhibition potential		**Not applicable** Operator has confirmed within response there are no water-based liquid wastes accepted at the Facility
	Feasibility of emulsion breaking e.g. lab testing		
53	**Reduce emissions to air of HCl, NH3 and organic compounds by applying BAT 14d <u>AND</u> using one or a combination of the following techniques:**		
	a.	Adsorption – see S6.1	**Not applicable** Operator has confirmed within response there are no water-based liquid wastes accepted at the Facility
	b.	Biofilter – see S6.1	
	c.	Thermal oxidation – see S6.1.	
	d.	Wet scrubbing – see S6.1	
	BAT-AELs for channelled HCl and TVOC emissions to air from the treatment of water-based liquid waste (mg/Nm3)		
	Table 6.10 and its supporting notes. Monitoring requirements are outlined in BAT 8		
	HCl	1.0-5.0	As above
	TVOC	3.0-20	