Basingstoke Not Duly Made Request for Further Information, 15th March

Date: 27 March 2024
Project name: STC IED
Project no: B22849AZ
Attention: Sarah Raymond
Company: Thames Water
Prepared by: Tamsin Potter
Document no: C.240328-1

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United Kingdom
www.jacobs.com

Dear Sarah Raymond,

Thank you for your not duly made RFI and payment request letter on 15th March 2024. Please see below for the answers to your questions, with the numbering format used by the EA:

Application fee

Unfortunately, the application payment you sent is incorrect. The correct application charge is £21,111.30**. This leaves a balance of £118.90 to pay** as our records show that you have only paid £21,992.40. Further guidance in relation to application charges can be located at: https://www.gov.uk/government/publications/environmental-permitting-charges-guidance/environmental-permitting-charges-guidance The application charge is made up as follows:

Application Fee

- £13,984 application fee for - S5.4 A(1) (b) (i) Recovery or a mix of recovery and disposal of non -hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.
- £1,344.30 application fee for S5.4 (a)(1) (a) (ii) in relation to the liquor treatment plant.
- £3,965 application fee for the physical treatment of non-hazardous waste relating to Table B3-1b(ii) Waste accepted at the head of the works import point.
- £793 application fee for the physical treatment of non-hazardous waste relating to Table B3-1b(iii) Waste accepted for temporary storage and transfer off site.

Additional Assessments (see below for further details)

- Odour management plan – a fixed charge of £1,246
- Habitats assessment – a fixed charge of £779

Answer

We have reviewed the application payment and note the balance of £118.90 to be paid. We request the EA can take the balance of £118.90 out of the TW remittance number PSCAPPTHAMES103.

1. **Liquor Treatment Plant (LTP)**

   You have provided limited details on the LTP.

a. Provide a full explanation of how the LTP works including an explanation of how chemicals are added.
b. Provide an assessment of the LTP against BAT as your current BAT assessment seems to identify that you need to meet BAT, but provides limited information in relation to the LTP, and your BAT 20 assessment does not seem to match the implementation of the LTP.

Answer 1a

The LTP receives liquors from the digested sludge dewatering plant via the liquor buffer tank.

The LTP is fed via a heat exchanger based on the availability of dewatering liquors within the Liquor Buffer Tank which is inhibited by low-levels.

The liquor treatment plant is a biological activated sludge plant with the exception that this is an advanced activated sludge plant using the anammox process for higher performance. The process takes high strength ammonia liquors nominally 500-2000mg/l and treats this to 100mg/l or less.

The treated liquors and excess activated sludge from the process are both returned to the effluent stream via sample point S2 and transfer point T2.

Aeration is provided by duty standby blowers. The process is pH controlled and timer controlled to maintain optimum biological performance. The plant also has online dissolved oxygen, nitrate and nitrite measurements. The plant has the ability to dose caustic as and when required however the plant currently performs well without the addition of this chemical. The plant also has the ability to dose anti-foam as and when required in order to control foam build up on the surface.

The reactor is mixed using 2No submersed Flygt mixers. High level alarms are in place in case the outlet becomes blocked. The liquor treatment plant process is heated using low grade jacket heat from the CHP engines either heating the incoming feed or heating the tank volume itself.

Answer 1b

An LTP has been installed at the Basingstoke STC, due to elevated levels of ammonia within the dewatering liquors, due to the site being a THP site. These elevated levels require reduction prior to their return to the inlet for aerobic treatment through the UWWTD route. This treatment step meets the requirements of BAT 20, specifically BAT 20L, as it is an activated sludge based plant, which is a generally applicable technique for biological treatment. It also meets the requirements of BAT 20N as it is a denitrification plant, for the reduction of ammonia loading – please find attached updated Appendix D ‘TW_STC_EPR_14a BGE_APPD.

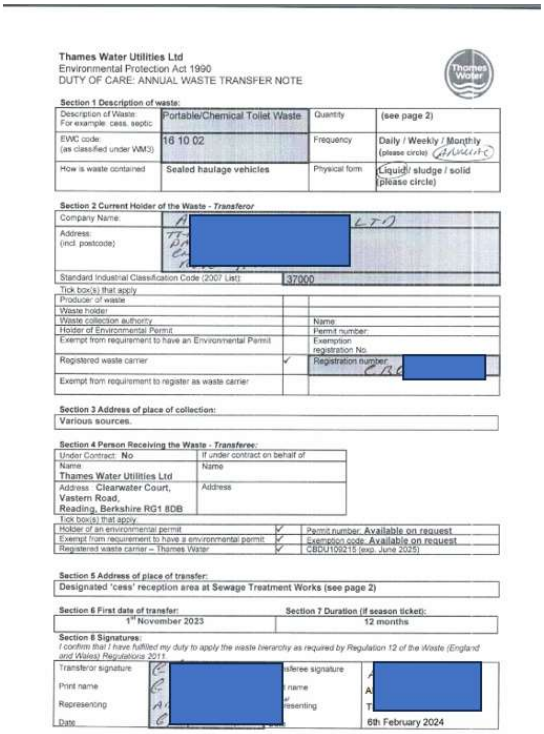
Use of activated sludge to treat liquors is standard practice BAT. Advance activated sludge treatment (anammox process) is an emerging technology which gives lower energy consumption and lower chemical use as well as requiring less chemical usage.

2. Table C3 – 1b (ii) Waste accepted at the head of the works import point

a. Provide transfer notes to demonstrate that the wastes requested are already accepted on the site.; or if waste is not currently accepted.
b. Provide an assessment of the fate an impact of the substances emitted to water from this activity following the Environment Agencies risk assessment guidance in line with relevant guidance (https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities/6-emissions-control)

Answer 2a

Please find below an example Portable Toilet Waste, Annual Waste Transfer Note and on page 2 confirmation Basingstoke STW is a TWUL site used by the customer. Note: customer details redacted solely for the purpose of this response.



Thames Water Utilities Ltd
Environmental Protection Act 1990
DUTY OF CARE: ANNUAL WASTE TRANSFER NOTE

Section 1 Description of waste:

Description of Waste: For example: cess, septic	Portable/Chemical Toilet Waste	Quantity	(see page 2)
EWC code: (as classified under WM3)	16 10 02	Frequency	Daily / Weekly / Monthly (please circle) Annually
How is waste contained	Sealed haulage vehicles	Physical form	Liquid / sludge / solid (please circle)

Section 2 Current Holder of the Waste - *Transferor*

Company Name:	[redacted] LTD		
Address: (incl. postcode)	[redacted]		
Standard Industrial Classification Code (2007 List)	37000		
Tick box(s) that apply			
Producer of waste			
Waste holder			
Waste collection authority		Name	
Holder of Environmental Permit		Permit number:	
Exempt from requirement to have an Environmental Permit		Exemption registration No.	
Registered waste carrier	✓	Registration number: CBD[redacted]	
Exempt from requirement to register as waste carrier			

Section 3 Address of place of collection:
Various sources.

Section 4 Person Receiving the Waste - *Transferee*:

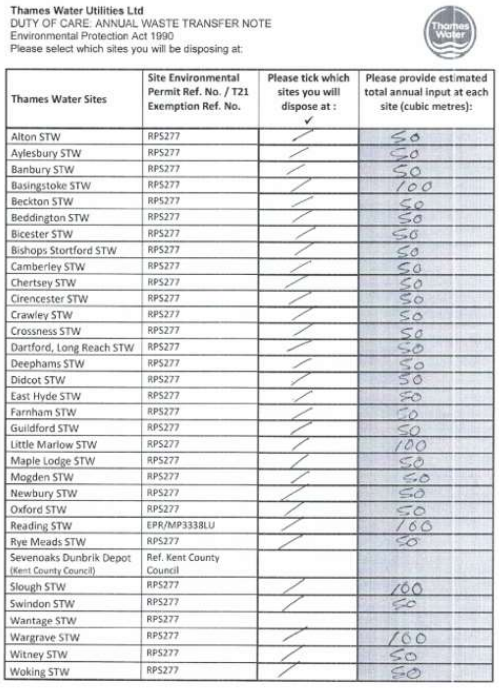
Under Contract: No		If under contract on behalf of	
Name: Thames Water Utilities Ltd		Name	
Address: Clearwater Court, Vastern Road, Reading, Berkshire RG1 8DB		Address	
Tick box(s) that apply:			
Holder of an environmental permit	✓	Permit number: Available on request	
Exempt from requirement to have a environmental permit	✓	Exemption code: Available on request	
Registered waste carrier – Thames Water	✓	CBDU109215 (exp. June 2025)	

Section 5 Address of place of transfer:
Designated 'cess' reception area at Sewage Treatment Works (see page 2)

Section 6 First date of transfer:	Section 7 Duration (if season ticket):
1st November 2023	12 months

Section 8 Signatures:
I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

Transferor signature	[redacted]	Transferee signature	[redacted]
Print name	[redacted]	Print name	[redacted]
Representing	[redacted]	Representing	[redacted]
Date	6th February 2024		



Thames Water Utilities Ltd
DUTY OF CARE: ANNUAL WASTE TRANSFER NOTE
Environmental Protection Act 1990
Please select which sites you will be disposing at:

Thames Water Sites	Site Environmental Permit Ref. No. / T21 Exemption Ref. No.	Please tick which sites you will dispose at : ✓	Please provide estimated total annual input at each site (cubic metres):
Alton STW	RPS277	✓	50
Aylesbury STW	RPS277	✓	50
Banbury STW	RPS277	✓	50
Basingstoke STW	RPS277	✓	100
Beckton STW	RPS277	✓	50
Beddington STW	RPS277	✓	50
Bicester STW	RPS277	✓	50
Bishops Stortford STW	RPS277	✓	50
Camberley STW	RPS277	✓	50
Chertsey STW	RPS277	✓	50
Cirencester STW	RPS277	✓	50
Crawley STW	RPS277	✓	50
Crossness STW	RPS277	✓	50
Dartford, Long Reach STW	RPS277	✓	50
Deephams STW	RPS277	✓	50
Didcot STW	RPS277	✓	50
East Hyde STW	RPS277	✓	50
Farnham STW	RPS277	✓	50
Guildford STW	RPS277	✓	50
Little Marlow STW	RPS277	✓	100
Maple Lodge STW	RPS277	✓	50
Mogden STW	RPS277	✓	50
Newbury STW	RPS277	✓	50
Oxford STW	RPS277	✓	50
Reading STW	EPR/MP3338LU	✓	100
Rye Meads STW	RPS277	✓	50
Sevenoaks Dunbrik Depot (Kent County Council)	Ref. Kent County Council		
Slough STW	RPS277	✓	100
Swindon STW	RPS277	✓	50
Wantage STW	RPS277		
Wargrave STW	RPS277	✓	100
Witney STW	RPS277	✓	50
Woking STW	RPS277	✓	50

Answer 2b

Not applicable

4. Open pre anaerobic digestion (AD) tanks

*You have advised that t*he consolidation tank pre- Anaerobic Digestion (AD) is open. You have advised that "Thames Water is committed to meeting the requirements of BAT. A full BAT risk assessment is required to determine the potential need to cover open topped tanks."

Your activity includes prior to the anaerobic digestion (AD) process (the biological treatment of waste) the thickening and dewatering process which is a directly associated activity (DAA) of the AD process. The BAT AELs and techniques identified for the dewatering activity are defined under the BREF as 'Treatment of water-based liquid waste'. The BREF goes on to further provides examples of wastes that would be considered as water-based liquid wastes. These include wastes under the category '19 08 wastes from waste water treatment plants not otherwise specified'.

The treatment of this waste in the dewatering and thickening stage and the subsequent emissions to air from connected abatement will be subject to the BAT AELs specified within BAT conclusion 8 and any odour control unit that serves this DAA must meet the requirements of BAT 53.

BAT 53 requires that "In order to reduce emissions of HCl, NH3 and organic compounds to air, BAT is to apply BAT 14d (Containment, collection and treatment of diffuse emissions) and to use one or a combination of the techniques including adsorption, biofilter, thermal oxidation and/or wet scrubbing.

a. Provide commitment to cover all pre-anaerobic digestion tanks identified as the consolidation tank in line with BAT 53 and14d.
b. Provide the specification of the abatement technology that will be implemented in line with BAT 14d and BAT 53 to treat air emissions.
c. Provide the proposed NGR of the OCUs air abatement plant emission points.
d. Provide a written statement which explains why the abatement plant will be effective at treating point source waste gas and odour emissions.

Answer 4a-d

Thames Water is committed to meeting the requirements of BAT/BREF to the extent that BAT 14 and BAT 53 apply. A full BAT risk assessment is required to determine the potential need to cover open topped tanks. Thames is not able to commit to covering tanks by the stated deadline of 31st March 2025, delivery timescales will be subject to the outcome of the PR24 and subsequent price review discussions.

TWUL request the Environment Agency includes an Improvement Condition in the determined permit which addresses the detail in b to d.

5. Open Tanks Post AD

Under BAT conclusion 14 you must ensure that diffuse emissions are contained. This includes techniques such as storing, treating and handling waste and material that may generate diffuse emissions in enclosed buildings and/or equipment, and collecting and directing the emissions to an appropriate abatement system. If digestate is still biologically active, and you are producing combustible biogas you must take steps to collect the biogas. Biogas should not be vented to the environment. If the source does not produce an explosive environment (i.e. less biologically active) you will need to propose plans to enclose, collect and

direct the waste gas emissions to an appropriate abatement system.

For all open tanks post AD, confirm that you will undertake the following:

a. If digestate is still biologically active and you are producing combustible biogas you will take steps to collect the biogas and direct this to your gas collection system in line with BAT 14.
b. For open tanks that do not produce an explosive environment (i.e. less biologically active) you will enclose, collect and direct the waste gas emissions to an appropriate abatement system in line with BAT 14 and 34.

Answer 5a and 5b

Thames Water is committed to meeting the requirements of BAT 14 and 34. A full BAT risk assessment is required to determine the potential need to cover open topped tanks. Thames is not able to commit to covering tanks by the stated deadline of 31st March 2025, delivery timescales will be subject to the outcome of the PR24 and subsequent price review discussions.

TWUL request the Environment Agency includes an Improvement Condition in the determined permit which addresses a and b.

6. Emissions to air

You have identified an emergency standby generator which ais not included in your current permit Guidance Medium combustion plant: when you need a permit - GOV.UK (www.gov.uk) sets out the dates for new and existing Medium Combustion Plant (MCP) and applicable compliance dates.

If you are applying to add this generator as part of your application, complete and submit form C2.5 and provide the required supporting information specified in the form: Application for an environmental permit: part C2.5 vary to add a new MCP/SG or change an existing MCP or SG permit - GOV.UK (www.gov.uk).

Answer 6

It should be noted there is an on-site emergency standby generator (with a thermal input capacity of 0.4 MWth), which provides back-up power to the site in the event of a grid failure. As the emergency standby generator typically operates for less than 50 hours per year and has a thermal input capacity of less than 1 MWth, the resulting impact on air quality is expected to be negligible. Therefore, no changes are required to the previously submitted SQIA for the site.

Please see attached 'TW_STC_EPR_14a_BGE_FC2.5' and the Table below:

Plant name	DAA Excluded Generator (Generator 4)
NACE code (Annex 1 required information)	E37.00
Traceable identifier for the individual plant or generator (annex 1 required information)	Serial number: 1940139
Plant manufacturer	Meccalte
Model name	MECC ALTE ECO40 1S4

Easting	467733
Northing	155310
Latitude	51.292902
Longitude	-1.0299986
Date operation started (Annex 1 required information)	March 2017
Rated thermal input of the individual MCP or generator in MW thermal (Annex 1 required information)	0.4
Total rated thermal input of all plant or generators on site in MW thermal	8.866
Technology or type (annex 1 required information)	Back-up Generator
Main fuel type used (annex 1 required information)	Diesel
Secondary fuel type used (annex 1 required information if plant is dual fired or uses a secondary fuel as a back up)	N/A
Is the secondary fuel used as a back up? and/or does the plant co fire using the secondary fuel?	N/A
Percentage of secondary fuel type used	N/A
Will the medium combustion plant be operated as a limited operating hours plant? (Annex 1 required information)	Yes, less than 50 hours per annum
Annual load factor as a percentage	N/A
Background nitrogen dioxide (NO2) in ug/m3	13.75093 (X 467500 and Y 155000)
Stack height (metres)	2
What is the exhaust gas flow rate (Nm3/s)?	Unknown
Is the plant in an Air Quality Management Area (AQMA) for a declared pollutant?	No
What is the name of the AQMA?	N/A
What is the name of the local authority?	Basingstoke and Deane Borough Council
Closest human receptor (metres)	460
Human receptor details	Chineham Incinerator
Closest ecological receptor (metres)	<50
Ecological receptor details	There are 49 non-statutory designated Local Wildlife Sites within 2 km of the site, the closest of which is Petty's Copse, which can be found less than 50 m to the north of the installation's boundary.
Will secondary abatement be fitted to the plant?	No
What type of secondary abatement will be fitted?	N/A
Date of capacity market of balancing service agreement or FiT accreditation (MM/YYYY)	N/A