

Response to Reading RFI 4th January 2023

Date: 17 January 2023
Project name: Thames Water STC IED
Project no: B22849AZ
Company: Thames Water:

Jacobs UK Ltd
1180 Eskdale Road
Winnersh, Wokingham
Reading RG4 1 5TU
United Kingdom
T +44 (0)118 946 7000
F +44 (0)118 946 7001
[Website]

Question 1: You have identified within your submission 2 x 1.2MW diesel generators which you have advised will operate for less than 50 hours. Under guidance Specified generator: when you need a permit - GOV.UK (www.gov.uk) "From 1 January 2019, a backup generator only used to provide power at a site during an emergency is excluded. However, it is a MCP and requires a permit by the appropriate deadline." Under guidance Medium combustion plant: apply for an environmental permit - GOV.UK (www.gov.uk) "you must provide a signed declaration that the MCP will not operate more than the allowed hours".

Provide a signed declaration that the 2 x 1.2MWth diesel generators will operate for less than 500 hours as per guidance Medium combustion plant (MCP): comply with emission limit values - GOV.UK (www.gov.uk).

Answer 1

Q1 – There are 2 x 1.2MWth diesel generators at the site, which are not operated as balancing plant or in Triad mode. As such, they are excluded from specified generator controls, being operated for under 50hrs per annum.

They will be captured by MCPD, but as existing plant, this will not occur until the permitting and compliance deadline of 2029 / 2030, as they are between 1 and 5MWth in size and subject to limited running (under 500hours per annum). As such, this context should be suitable footnoted in the emission table for the site.

On this basis, the signed declaration has been provided.

Question 2) Provide a completed B4 form for the new bespoke waste operation identified as the import of waste to the head of works. Forms can be located at Application for an environmental permit: part B4 new bespoke waste operation - GOV.UK (www.gov.uk).

Answer 2

Please see attached 'Form B4 – Reading STC' and new Table C3-1b(ii): Waste accepted at the head of the works import point below, updated and replacing the Table C3-1b(ii) within the original Application document.

We withdraw Table C3-1b(iii): Waste accepted for temporary storage and transfer or treatment' from this application.

Table C3-1b(ii): Waste accepted at the head of the works import point

Waste Code	Description of Waste
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01 ^[note 1] ^[note 3]
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only) ^[note 3]
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only) ^[note 3]
19 06 99	wastes not otherwise specified (waste from de-gritting AD digester)
19 08 05	sludges from treatment of urban waste water ^[note 3]
19 08 09	grease and oil mixture from oil / water separation containing only edible oil and fats
19 09 02	sludges from water clarification
19 09 03	sludges from decarbonation
19 09 06	solutions and sludges from regeneration of ion exchangers
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (sewage sludge only) ^[note 3]
19 13 08	aqueous liquid wastes and aqueous concentrates from groundwater remediation
20 03 04	septic tank sludge ^[note 3]
20 03 06	waste from sewage cleaning ^[note 3]
<p>Note 1 – comprising but not limited to:</p> <ul style="list-style-type: none"> Centrate liquor [Note 3 if derived from UWWTD wastes]; Cesspool waste [Note 3]; Waste from a portable toilet waste Final effluent from water treatment works Wastewater treatment works arisings e.g. final effluent or raw sewage [note 3] <p>Note 3 – waste stream included for reference only and to confirm that an import of said waste is excluded from requirements of the permit by way of the waste being exempt under Controlled Waste (England and Wales) Regulations 2012, Reg 3(2)(a).</p>	

Question 3) Provide information in Application form Part A – about you

a) Q5c - Please give details of the directors . You have advised in response to this "Please see application support document. Section 3" on review of the information we cannot locate this information in Section 3. In line with the requirements in form Part A, provide details of the directors.

Answer 3

The relevant data has been provided separately by email from Nick Lutt of Thames Water on 5th January 2023.

Question 4) Provide information in Application form Part C2 – General – varying a bespoke permit.

a) Q1b – Permit Number. The permit number provided does not match the site you are applying to vary. Provide an updated C2 form with the correct permit number.

b) Q5a – Provide a plan or plans for the site. You have provided 'Appendix A figures'. On assessment of these plans they do not include all of the land on which your activities take place. i.e. the containment solutions proposed in 'Reading STC – Containment Options Report,' Dated July 2022.

- i. Update Appendix A and all relevant site plans to include all areas on which all the installation activities take place.
- ii. Ensure all relevant management plans i.e. odour management plan, bioaerosol management plan, LDAR plan include all areas on which the activities take place.

c) Q5a – Provide a plan or plans for the site. You have identified 'French drains' i.e. soakaways on your site drainage plan. Under guidance The Environment Agency's approach to groundwater protection (publishing.service.gov.uk) you must not cause or knowingly permit the discharge of hazardous substances or non-hazardous pollutants that might lead to an input of that substance into groundwater without an environmental permit unless the discharge qualifies for an exemption (in which case the discharge must meet the conditions relating to that exemption) or exclusion. Groundwater position statement G12 – Discharge of clean roof water to ground sets out acceptable discharges to ground. Confirm if the soakaway discharges meet the requirements set out on G12 groundwater position statement, and if not explain how you will comply with guidance Discharges to surface water and groundwater: environmental permits - GOV.UK (www.gov.uk).

d) Q5b - Do any of the variations you plan to make need extra land to be included in the permit. On reviewing your site conditions report the National Grid Reference (NGR) is not located within your permit boundary. Provide an updated site condition report with the correct NGR.

e) Q5b - Do any of the variations you plan to make need extra land to be included in the permit . On review of your site condition report you have not identified 'relevant hazardous substances', or carried out a stage 1 -3 assessment within the site condition report (SCR) in line with guidance EC Commission Guidance on baseline reporting (2014/C 136/03) dated 6th May 2014. Update your site condition report to:

- i. Identify 'Relevant Hazardous Substances (RHS)' – by consideration of the chemical and physical properties of each hazardous substance [composition, solubility, toxicity, mobility, physical state (solid, liquid or gas)] and determine whether any of these substances are capable of causing soil and/or groundwater contamination.
- ii. Include a Stage 1- 3 assessment within the SCR (Further details of the Stage 1 – 3 assessment are set out within EC Commission Guidance on baseline reporting (2014/C 136/03) dated 6th May 2014. This is in accordance with Schedule 7 (paragraph 5 [m]) of the EPR regulations 2016 / Article 22 of IED. It is also referred to in the draft H5 guidance.)

f) Q6 – Environmental Risk Assessment . 'Table designated site review' has identified not local wildlife sites (LWS) within 2,000m. On review of our systems we have identified LWS within 2,000m. Update and re-submit 'Table designated site review' and your environmental risk assessment to include all local wildlife sites within 2,000M.

Answer 4

Please see attached 'Form C2 – Reading STC v2'

4a – the correct permit number is EPR/MP3338LU/V004.

4b – The site plan has been updated and is included as a revised Figure 2. The areas of additional land are so minor and comprise only non-operational areas, therefore the relevant management plans remain valid.

4c - Thames Water have reviewed the drainage plan, and the term 'French Drain' is not used to refer to a drain attached to a soakaway. Instead, the drains are connected to pumping stations and the contents of these drains returns to the works inlet. As such, Thames Water confirm there is no release to groundwater from the drainage system.

4d – An updated Site Condition Report including the correct NGR located within the permit boundary is included below as Appendix A1.

4e – An updated Site Condition Report including a Stage 1-3 assessment of relevant hazardous substances is included below in Appendix A1.

4f – An updated 'Designated Site Review' table is provided below to replace the original table in the Permit Variation Application. Updated Environmental Risk Assessment tables provided below.

Designated site review

Site Name	Designation	Direction from site	Distance from site
Thames Basin Heaths	SPA	South-East	8,150 m
n/a	SAC	n/a	n/a
n/a	Ramsar	n/a	n/a
n/a	NNR	n/a	n/a
n/a	MPA	n/a	n/a
n/a	SSSI	n/a	n/a
n/a	LNR	n/a	n/a
n/a	Ancient Woodland	n/a	n/a
List of Local Wildlife Sites			
Burghfield Gravel Pits			LWSs sites within 2,000 m
Fobney and Kennet Valley Meadows			

Fobney Island	
Great Lea Pond	
Holy Brook	
River Kennet/Kennet and Avon Canal	
The Cowsey	
Whitley Park Farm/St Patricks Hall Pond	

Data taken from MAGIC.gov.uk website, accessed June 2022 and also from the EA Pre-Application Conservation Screening Report (January 2023) for the site. For habitat sites, the relevant distance for consideration are: International designations (SAC, MPA, SPA and Ramsar - 10km); National designations (SSSI – 2km); Local and National Nature Reserves, LWSs and areas of Ancient Woodland (2km).

There is only one designated habitat site within the relevant distances of the site – the Thames Basin Heaths SPA is located approximately 8.15 km to the south-east of the site. There are no SACs, Ramsar sites or MPAs within 10 km of the site. There are no SSSIs within 2km of the site.

There are also no National or Local Nature Reserves, or areas of Ancient Woodland within 2 km of the site. There are eight LWSs within 2 km of the site, the closest of which is approximately 200m north of the site location.

There are no protected habitat records within the specified screening distance (within 500m) of the site. However, there are protected species records (protected fish and protected fish migratory routes) located within the specified screening distance (within 500m) of the site associated with the River Kennet and Foundry Brook to the north and east of the site respectively. Such watercourses have been designated for European Eel, Atlantic Salmon and Bullhead and also as a migratory route for European eel and Atlantic salmon.

The site sits outside the boundary of a Source Protection Zone (SPZ).

The permitted area of the STC and wider site sits entirely within Flood Zone 1 (>1:1000 annual probability of flooding).

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
Amenity issues: Litter, vermin and pests	<p>Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, amenity and recreation areas such as playing fields and playgrounds. Industrial estates and rail stations.</p> <p>The site is located in a suburban area close to Reading town and the A33 dual carriageway. Commercial premises are located to the north and south of the site. The nearest commercial and industrial premises are located approximately 70 m to the west comprising a local council household waste and recycling centre (HWRC) and permitted waste transfer station (WTS). The nearest residential dwellings are located approximately 280 m to the north-east of the site.</p> <p>Ecological receptors: There is one SPA located approximately 8.15 km to the south-east of the site. There are no SACs, MPAs or Ramsar sites within 10 km of site. There are also no SSSI, NNRs, LNRs or Ancient Woodland sites within 2 km of the site.</p> <p>There are eight designated non-statutory LWSs within 2 km of the site, the closest is approximately 200 m north of the site.</p>	<p>The wastes handled at the site are primarily liquids and sludges, along with UWWTD derived material delivered by sewer. As such, there is no source of litter within the materials handled at the site.</p> <p>In the unlikely event pests or vermin are observed on site a suitable contractor is called in as soon as practicable.</p>	X
Dust and bioaerosols	<p>Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations.</p> <p>For human health and ecological receptors, see notes for Litter above.</p> <p>The impact of dust on human health will depend on the distance and wind direction.</p>	<p>The wastes handled at the site are liquids, sewage sludges and sewage cake, along with UWWTD derived material delivered by sewer.</p> <p>The site will not be handling inherently dusty or powdery wastes. Sewage cake retains a high moisture content and is not dusty. Roads will be maintained to avoid the production of dust.</p> <p>Produce sewage cake has sufficient moisture content to ensure it does not give rise to dust.</p> <p>Aerobic digestion of sludge takes place within a closed system. Digested sludge cake is stored within cake silos that are fully enclosed so that the risk of bioaerosols is low, and monitoring is not required.</p>	✓

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
		Please see Appendix F for the site specific bioaerosol risk assessment.	
Assessment of point source emissions to air Emissions deposited from air to land	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Amenity issues above. The impact of emissions from air on human health will depend on the distance and wind direction.	Reading AQMA, covering an area that includes major radial road routes between Junction 11 of the M4 motorway and Reading Town Centre is approximately 150 m to the east of the site boundary. It has been declared by Reading Borough Council for Nitrogen Dioxide NO ₂ – Annual Mean. ADMS modelling indicates that boilers and the CHP engines are unlikely to result in unacceptable impacts on air quality. Use of the emergency flare is limited to emergency situations and during planned maintenance activities to either the CHP engine or boilers. Pressure relief valves are not used routinely to control biogas volumes and would only operate in an emergency. Fugitive emissions to air are assessed in Table C3-3b(i).	X
Assessment of point source and fugitive emissions to water	The Foundry Brook, a tributary of the River Kennet, is located adjacent to the western and southern boundaries of the wider sewage works. The majority of the works and the entire area to be permitted is in Flood Zone 1 (>1:1000 annual probability of river flooding). The western perimeter of the wider works may include a small area of Flood Zone 2, with a higher risk of flooding (between a 1:100 and 1:1000 annual probability of flooding). Surface water drainage and process liquors within the site drains to the inlet of the adjacent sewage treatment works for full treatment prior to discharge.	The main product of the process is a sewage cake, which is stored within Flood Zone 1, inside concrete, enclosed cake silos. Discharge operations take place into lorries on a concrete pad equipped with drainage The wider STW site is within a bunded area. Other aqueous discharges generated by the biological waste treatment process and DAAs are limited (comprising only biogas condensate, dewatering liquors and surface water run off). These sources are discharged to the on-site drainage system where pumps return drainage to sewage works inlet. Due to the nature and small quantity of these emissions no further assessment of point source emissions is deemed necessary.	X
Assessment of odour	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations.	The wider sewage treatment works, which includes the area of the STC to be permitted has processes in place to minimise odour which includes physical containment, odour	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
	<p>For human health and ecological receptors, see notes for Amenity issues above.</p> <p>The impact of emissions from odour on human receptors will depend on the distance and wind direction.</p>	<p>abatement, management systems, procedures and monitoring to control fugitive emissions of odour at the plant. The sewage treatment works has an odour management plan, which is appended as Appendix E.</p> <p>There is no history of odour complaints associated with the Reading Sewage Treatment Works. .</p>	
Energy	Global atmosphere (direct and indirect emissions)	<p>Use of biogas on site within the CHP engines and/or boilers minimises the need to import non-renewable electricity from the National Grid. Export of renewable electricity to the National Grid can offset consumption of fossil fuels within the energy mix, lowering the carbon intensity of power.</p> <p>Good maintenance procedures will help the plant run efficiently and reduce site energy consumption. Use of LED lighting reduces site consumption.</p>	X
Land and disposal of waste to other processes	<p>Rivers and streams – see Assessment of point source and fugitive emissions to water above.</p> <p>Drainage systems/sewers.</p> <p>The site lies outside any Groundwater source protection zones (SPZ). Aquifers are classified as Secondary A (bedrock deposits) and Secondary A (superficial deposits).</p>	<p>All waste streams are taken off-site for recovery or disposal and will continue to be transferred (and consigned where hazardous) to appropriately permitted facilities.</p>	X
Noise and vibration	<p>Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, amenity and recreation areas such as playing fields and playgrounds. Industrial estates and rail stations.</p> <p>The site is located in a suburban area close to Reading town and the A33 dual carriageway. Commercial premises are located to the north and south of the site. The nearest commercial and industrial premises are located approximately 70 m to the west comprising a local council HWRC and permitted WTS. The nearest residential dwellings are located approximately 280 m to the north-east of the site.</p>	<p>Site design has been chosen to minimise the impact of noise on offsite receptors through use of buildings, building orientation, finishes and location of openings.</p> <p>Noise from plant and equipment will be minimised through purchasing decisions and a robust preventative maintenance programme.</p> <p>Site has a one-way system for traffic and site speed limits. Operation of shovel loaders and similar vehicles is minimised because of the cake silos.</p> <p>There will be no sources of vibration within the facility.</p>	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
	<p>Ecological receptors: There is one SPA located approximately 8.15 km to the south-east of the site. There are no SACs, MPAs or Ramsar sites within 10 km of site. There are also no SSSI, NNRs, LNRs or Ancient Woodland sites within 2 km of the site.</p> <p>There are eight designated non-statutory LWSs within 2 km of the site, the closest is approximately 200 m north of the site.</p>	<p>Noise and vibration emissions are assessed in Table C3-3b(iii).</p> <p>There is no history of noise complaints associated with this site.</p>	
Other issues (including visual impact)	Protected Species & Habitats	<p>There are no protected habitat records within the specified screening distance of the site. However, there are records of protected species (protected fish and protected fish migratory routes) located within the specified screening distance of the site. Such records are associated with the River Kennet and Foundry Brook to the north and east of the site respectively. Such watercourses have been designated for European Eel, Atlantic Salmon and Bullhead and also as a migratory route for European eel and Atlantic salmon. The installation does not discharge directly to the above watercourses and the final effluent discharge is regulated under a separate environmental permit which takes into account these designations.</p>	X

Question 5) Provide information in Application form Part C3 – General – varying a bespoke permit

a) Q1 – What activities are you applying to vary. You have identified in 'Table C3-1a – Types of activities' under activity S5.4 A1(b)(i), annex I and II codes and descriptions 'D10 Incineration on land'. We can see no mention in your non-technical summary of why D10 Incineration on land' is required. Provide an explanation of why you are applying for D10 Incineration on land, or confirm that this is not required.

b) Q1 – Types of waste accepted. On review of 'Table C3-1b(i) Waste accepted into Anaerobic Digestion import point'. Note 2 states "Where wastes are imported which would cause the digester outputs to fall outside of the Sludge Use in Agriculture Regulations, those wastes in Table 1 will not currently be accepted. Null waste returns will be provided to demonstrate that these wastes have not been processed." Your application is for the resultant cake to be used under the Sludge Use in Agriculture Regulations, you have provided no information on how you will manage your process for co-digestion.

- i. Confirm that you will not be undertaking co-digestion, and identify the EWC codes that you will remove from your application, or
- ii. Provide a non-technical summary and BAT assessment to demonstrate how you will operate the site for co-digestion.

c) Table 3 – Technical standards. You have advised in your response "Will be updated as and when the EA guidance is issued", and identified LFTGNO8: guidance for Monitoring landfill gas engine emissions. Under guidance Part C3 varying a bespoke installation permit (publishing.service.gov.uk) you must identify any relevant guidance in Technical guidance for regulated industry sectors: environmental permitting - GOV.UK (www.gov.uk), and relevant best available techniques (BAT). It should also be noted that LFTGNO8 is superseded Biological waste treatment: appropriate measures for permitted facilities - Guidance - GOV.UK (www.gov.uk). Provide an updated C3 form identifying the relevant technical standards that your site will comply with.

d) Q3b – General Requirements. You have identified a bioaerosol risk assessment being provided in Appendix F, this can not be located. Provide your bioaerosol risk assessment.

e) Q3b – General Requirements. You have provided 'Table C3-3b (iv) - Environmental Risk Assessment and Accident Management Plan'. This does not meet the requirements of guidance Develop a management system: environmental permits - GOV.UK (www.gov.uk) and is missing key information such as review dates, emergency contacts etc.. Your accident management plan must be a stand alone document. Provide an accident management plan that meets the requirements of Develop a management system: environmental permits - GOV.UK (www.gov.uk).

f) Q3 - Operating Techniques. You have not provided your waste pre-acceptance and acceptance procedures in line with BAT 2. Provide a copy of your waste pre-acceptance and acceptance procedures.

g) Q4a – Monitoring. Requires that you provide environmental monitoring, for example, bio-aerosol monitoring, surface water or groundwater, noise, ambient air monitoring, process and land monitoring. You must describe the frequency of any monitoring, the measurement methodology you will use and the procedure for evaluating your results. You must provide a permanent means of access to monitoring points. On assessment of your response you have provided some emission to air points in section 5, but not included all potential emissions, or relevant parameters. For all relevant emissions as outlined in guidance Part C3 varying a bespoke installation permit (publishing.service.gov.uk), provide:

- iii. The national grid reference of the monitoring point
- iv. The frequency of monitoring.
- v. The methodology used for monitoring. You should use recognized standards such as British EN standards or ISO standards.
- vi. The procedures (written documents) you follow to assess the measures.

h) Q4b9 – BS EN 15259. You have answered no to question in section 4, but not provided information on how the standards in BS EN 15259 will be met. Provide an assessment to how the standards in BS EN 15259 will be met.

Answer 5

Please see attached 'Part C3 – Reading STC v2'

5a – 'D10 Incineration on land' will be used to allow for the emergency flare to operate and combust biogas as a Directly Associated Activity to the main listed activity. Biogas will only be combusted to maintain integrity of the biogas collection system and will occur at emission point A6 only. This code may be removed from the permit

5b Thames Water confirms that they will not be undertaking co-digestion at Reading STC and have re-produced a version of Table C3-1b(i) which identifies the EWC codes to be used for digestion. Please see Table C3-1b(1) on the next page.

Table C3-1b(i): Waste accepted into Anerobic Digestion import point

Waste Code	Description of Waste
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01 ^[note 1]
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only)
19 08 05	sludges from treatment of urban wastewater
19 08 09	grease and oil mixture from oil / water separation containing only edible oil and fats
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (sewage sludge only)
Note 1 – comprising but not limited to: Centrate liquor Final effluent from wastewater treatment works	

5c – Table 3 – Technical standards is reproduced below.

3a - Technical standards

Description of the schedule 1 activity or directly associated activity	Relevant technical guidance note or Best available techniques as described in BAT conclusions under IED	Document Reference
Anaerobic Digestion plant S5.4A1(b)(i); Storage of waste (DAA)	Biological waste treatment: appropriate measures for permitted facilities BAT Conclusions for Waste Treatment	https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council (notified under document C(2018) 5070) (Text with EEA relevance.)

5d – Please find attached the Bioaerosol Risk Assessment “Appendix F Reading BRA.pdf”

5e – Please see attached “Reading Accident Management Plan v2.pdf” which fulfils the criteria of a standalone management plan.

5f – Please find attached copies of waste pre-acceptance and waste acceptance procedures for Thames Water operations:

1. Acceptance of Third-Party Waste Imports EMS-EES-012 Version 7.0
2. Acceptance of TWUL Inter-site Sludge and Cake EMS-DOC.071 v1.0

5g

Monitoring point	NGR	Monitoring frequency	Methodology (standard)	Assessment procedures
A1 (CHP 1a)	SU 70808 70578	Annual	BS EN 14792	
A2 (CHP 1b)	SU 70806 70577	Annual	BS EN 14792	
A3 (Boiler 2a)	SU 70716 70559	Annual	BS EN 14792	
A4 (Boiler 2b)	SU 70716 70559	Annual	BS EN 14792	
A5 (Boiler 2c)	SU 70716 70559	Annual	BS EN 14792	
A6 (Flare)	SU 70691 70680	n/a	Hours of operation	
A7 (Standby Generator)	SU 70783 70585	n/a	Hours of operation	
A8 (Standby Generator)	SU 70788 70583	n/a	Hours of operation	

A9 (Biogas holder PRV)	SU 70673 70642	n/a		
A10 (Biogas holder PRV)	SU 70681 70658	n/a		
A11 (Primary digester PRV)	SU 70717 70635	n/a		
A12 (Primary digester PRV)	SU 70733 70628	n/a		
A13 (Primary digester PRV)	SU 70733 70628	n/a		
A14 (Primary digester PRV)	SU 70726 70612	n/a		
A15 (OCU)	SU 70688 70607	Hydrogen sulphide Once every six months	CEN TS 13649 for sampling	NIOSH 6013 for analysis
		Ammonia: Once every six months	EN ISO 21877	
Primary Sludge Thickening Liquors	SU 70694 70590			
SAS Thickening Liquors	SU 70681 70594			
Post Digestion Dewatering Liquors	SU 70700 70630			

5h - As an existing operational site sampling locations and sampling ports may not meet all of the requirements for BS EN 15259, but these are being checked onsite. Due to the size of the CHP and boiler, a permanent sampling platform is not provided, however, a temporary sampling platform is utilised to provide sufficient space, in accordance with standard industry practice and BS EN 15259 when sampling is required.

Question 6) Emissions returned to the WwTW.

The waste anaerobic digestion process produces effluent and is discharged off site to the Reading Wastewater Treatment Works. Effluent discharged to the head of the works is a point source emission to sewer. BAT conclusion 3 requires operators to have an emissions inventory for the effluent. We acknowledge that applicants may not hold this information in order to inform a quantitative risk assessment for existing discharges. For the purpose of duly making, provide the following information:

- Provide a summary of the sampling and analysis methodology of the effluent discharged and specify the likely pollutants in the effluent (guidance here Monitoring discharges to water: guidance on selecting a monitoring approach - GOV.UK (www.gov.uk) and Surface water pollution risk assessment for your environmental permit - GOV.UK (www.gov.uk)).
- Provide a written statement with a commitment to undertake the sampling and analysis in line with BAT3.
- Provide a written statement with a commitment that those undertaking the sampling and analysis will be by accredited to MCERTs or provide evidence of equivalent standards.

- d) Provide a revised drainage plan which identifies the effluent sampling point for the effluent discharge from the installation.
- e) Advise the NGR of the effluent/s sampling point.

Answer 6

Please see attached reply Response to RFI_Q6_reading Liquor 20230116'

SITE CONDITION REPORT TEMPLATE

For full details, see H5 *SCR guide for applicants* v2.0 4 August 2008

COMPLETE SECTIONS 1-3 AND SUBMIT WITH APPLICATION

DURING THE LIFE OF THE PERMIT: MAINTAIN SECTIONS 4-7

AT SURRENDER: ADD NEW DOC REFERENCE IN 1.0; COMPLETE SECTIONS 8-10; & SUBMIT WITH YOUR SURRENDER APPLICATION.

1.0 SITE DETAILS	
Name of the applicant	Thames Water Utilities Limited
Activity address	Reading Sludge Treatment Centre Reading Sewage Treatment Works Island Road Reading Berkshire RG2 0RP
National grid reference	SU 70724 70623 [updated NGR]

Document reference and dates for Site Condition Report at permit application and surrender	Environmental Permit Variation Application – Reading Sludge Treatment Centre. Document number: tbc. Date: January 2023.
--	--

Document references for site plans (including location and boundaries)	Please see site plans: Document B22849AM-JAC-RDG-DR-0001, FIGURE 1: SITE LOCATION PLAN; and, Document B22849AM-JAC-RDG-DR-0002, FIGURE 2: INSTALLATION BOUNDARY AND AIR EMISSION POINTS.
--	--

Note:

In Part A of the application form you must give us details of the site's location and provide us with a site plan. We need a detailed site plan (or plans) showing:

- Site location, the area covered by the site condition report, and the location and nature of the activities and/or waste facilities on the site.
- Locations of receptors, sources of emissions/releases, and monitoring points.
- Site drainage.
- Site surfacing.

If this information is not shown on the site plan required by Part A of the application form, then you should submit the additional plan or plans with this site condition report.

2.0 Condition of the land at permit issue	
Environmental setting including: <ul style="list-style-type: none"> • geology • hydrogeology • surface waters 	<p>The Foundry Brook, a tributary of the River Kennet, is located adjacent to the western and southern boundaries of the wider sewage works. The installation does not link to this watercourse, but the wider sewage treatment works operated by TWUL does.</p> <p>According to the Environment Agency's online flood maps there is a very low risk of flooding from surface waters across the site except for a small number of internal roadways and near to the gas holders, which have a low risk (<1 in 100 risk of annual flooding). There is a very low risk of flooding from rivers and the sea for the whole site (<1 in 1000 risk of annual flooding).</p>

	<p>The whole of the site is outside the boundaries of a Source Protection Zone.</p> <p>The geology of the site is a sedimentary bedrock of clay, silt and sand from the Lambeth group, which is fluvial and shallow marine in origin. Superficial deposits are alluvium clay, silt, sand and gravel and fluvial in origin.</p> <p>The bedrock is classified as a Secondary A aquifer while the superficial deposits are classified as Secondary A.</p>
<p>Pollution history including:</p> <ul style="list-style-type: none"> • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures 	<p>The site is located approximately 2.5 km south of the town of Reading and approximately 1.5 km north of the M4 motorway.</p> <p>The installation activities at the site are part of a wider TWUL operated sewage treatment works which handles and treats material which is similar in composition and makeup to the wastes treated within the installation.</p> <p>Prior to becoming the site of a sewage treatment works in the early 2002 and opening in 2005, the site was sludge beds associated with the previous Reading Sewage Treatment Works.</p> <p>The area has a long association with sewage works and is noted on mapping from 1899 as being a Sewage Farm for the Reading Corporation. Sludge beds are recorded on maps from 1959 while a sewage treatment works developed and expanded east of the current site. Also, to the east has been a number of industrial sites including aluminium works, factories and depots. To the west is a waste management transfer station, and beyond that a pre-landfill directive inert landfill operated on a former sand and gravel extraction site. The M4 motorway was built in the 1960s.</p> <p>Environment Agency data on pollution incidents does not identify any pollution incidents (Category 1 and 2) at the site.</p>
<p>Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)</p>	<p>Unknown – although the works was operated as a sewage farm in its earliest phase, the site will therefore be contaminated with sewage related compounds, including <i>E. coli</i> and heavy metals.</p>
<p>Baseline soil and groundwater reference data</p>	<p>None collected.</p> <p>Substances that may be present by storage and use within the newly permitted installation are listed within the Tables of the Residue Management Plan (as previously supplied). These substances (or similar substances used in the same processes) have been used historically at the site since it first operated.</p> <p>The following substances may be ‘relevant hazardous substances’:</p> <ul style="list-style-type: none"> • Diesel • Oil

	<ul style="list-style-type: none"> • Grease • Anti-freeze • Boiler chemicals <p>These substances are stored in and around the boiler house and CHP engines, and are used in their routine operation and maintenance.</p> <p>All other hazardous substances have been removed from assessment as they are not considered relevant. This is because storage and use are controlled at the site.</p> <p>Substances are stored within suitably engineered containers/with containment and volumes are small enough for spillage to be contained prior to reaching a sensitive environment. Use of substances is carefully managed to minimise the likelihood of an accidental release.</p>
Supporting information	Thames Water has not collected baseline data at this time and acknowledges the risks that this may pose when it comes to surrender of the permit. However, there are no plans to close the site in the foreseeable future

3.0 Permitted activities	
Permitted activities	<p>Operation of an anaerobic digestion plant for sewage sludge waste and imported sewage sludge wastes and combustion of biogas within a CHP engine to generate electricity for use on site.</p> <p>Imports of waste to the works inlet for treatment via the UWWTD route.</p>
Non-permitted activities undertaken	<ul style="list-style-type: none"> • Discharging of waste • Storage of waste • Storage of biogas • Physical blending of wastes • Storage of raw materials
Document references for:	Please see the Technical Summary in Chapter 2 of the main application document.
<ul style="list-style-type: none"> • plan showing activity layout; and • environmental risk assessment. 	

Note:

In Part B of the application form you must tell us about the activities that you will undertake at the site. You must also give us an environmental risk assessment. This risk assessment must be based on our guidance (*Environmental Risk Assessment - EPR H1*) or use an equivalent approach.

It is essential that you identify in your environmental risk assessment all the substances used and produced that could pollute the soil or groundwater if there were an accident, or if measures to protect land fail.

These include substances that would be classified as 'dangerous' under the Control of Major Accident Hazards (COMAH) regulations and also raw materials, fuels, intermediates, products, wastes and effluents.

If your submitted environmental risk assessment does not adequately address the risks to soil and groundwater, we may need to request further information from you or even refuse your permit application.

4.0 Changes to the activity	
Have there been any changes to the activity boundary?	If yes, provide a plan showing the changes to the activity boundary.
Have there been any changes to the permitted activities?	If yes, provide a description of the changes to the permitted activities
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	If yes, list of them
Checklist of supporting information	<ul style="list-style-type: none"> • Plan showing any changes to the boundary (where relevant) • Description of the changes to the permitted activities (where relevant) • List of 'dangerous substances' used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)

5.0 Measures taken to protect land	
Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can't, you need to collect land and/or groundwater data to assess whether the land has deteriorated.	
Checklist of supporting information	<ul style="list-style-type: none"> • Inspection records and summary of findings of inspections for all pollution prevention measures • Records of maintenance, repair and replacement of pollution prevention measures

6.0 Pollution incidents that may have had an impact on land, and their remediation	
Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you can't, you need to collect land and /or groundwater reference data to assess whether the land has deteriorated while you've been there.	
Checklist of supporting information	<ul style="list-style-type: none"> • Records of pollution incidents that may have impacted on land • Records of their investigation and remediation

Error! Use the Home tab to apply Document Title to the text that you want to appear here.

7.0 Soil gas and water quality monitoring (where undertaken)

Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.

Checklist supporting information	of	<ul style="list-style-type: none">• Description of soil gas and/or water monitoring undertaken• Monitoring results (including graphs)
---	-----------	--

8.0 Decommissioning and removal of pollution risk	
<p>Describe how the site was decommissioned. Demonstrate that all sources of pollution risk have been removed. Describe whether the decommissioning had any impact on the land. Outline how you investigated and remedied this.</p>	
Checklist of supporting information	<ul style="list-style-type: none"> • Site closure plan • List of potential sources of pollution risk • Investigation and remediation reports (where relevant)

9.0 Reference data and remediation (where relevant)	
<p>Say whether you had to collect land and/or groundwater data. Or say that you didn't need to because the information from sections 3, 4, 5 and 6 of the Surrender Site Condition Report shows that the land has not deteriorated.</p> <p>If you did collect land and/or groundwater reference data, summarise what this entailed, and what your data found. Say whether the data shows that the condition of the land has deteriorated, or whether the land at the site is in a "satisfactory state". If it isn't, summarise what you did to remedy this. Confirm that the land is now in a "satisfactory state" at surrender.</p>	
Checklist of supporting information	<ul style="list-style-type: none"> • Land and/or groundwater data collected at application (if collected) • Land and/or groundwater data collected at surrender (where needed) • Assessment of satisfactory state • Remediation and verification reports (where undertaken)

10.0 Statement of site condition	
<p>Using the information from sections 3 to 7, give a statement about the condition of the land at the site. This should confirm that:</p> <ul style="list-style-type: none"> • the permitted activities have stopped • decommissioning is complete, and the pollution risk has been removed • the land is in a satisfactory condition. 	