MOTT MACDONALD

Southern Water Millbrook (inc Slowhill Copse) Sludge Treatment Centre Permit Application – Response to Environment Agency

Environment Agency reference:	**EPR/CP3535XU/V006**	**Date:**	**19th December 2024**
Prepared by:	David Andres Vargas Castro	Checked by:	Claire Cowdrey
Approved by:	Anita Manns	Document reference:	790101_NDM Response_MIL_ December 2024

Table 1: Response to Environment Agency

Topic of relevancy	**Question no.**	**Question**	Response
Payment details	N/A	Unfortunately the application payment you sent is incorrect. Currently the correct application charge is £17,250 and therefore we will arrange any refund as part of the duly making process. Application fee • £13,958 Substantial variation application fee for - S5.4 (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.	In the original application Southern Water have paid £19,215 on 107/06/2022 (remittance no: 450145610). We confirm the application fee based on the below: Application fee • 1.16.2.1 - £13,984 application fee for - S5.4 (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. • 1.19.2 - Habitats assessment – a fixed charge of £779

Topic of relevancy	Question no.	Question	Response
		Additional Assessments (see below for further details) • Odour management plan – a fixed charge of £1,246 • Habitats assessment – a fixed charge of £779 • Emissions management plan (BRA) - £1,241	• 1.19.5 - Emission Management Plan – a fixed charge of £1,241 • 1.19.6 - Odour management plan – a fixed charge of £1,246 In addition, Southern Water paid for a • 1.10.2 – Minor variation to consolidate the combustion permit. Therefore, the fee is £19,215. However, Southern Water will be happy to receive a refund should this fee be incorrect.
Application scope	1	You application includes reference and information to the WwTW throughout. You are not applying to permit the WwTW, and this will not form part of your permit boundary. Update your 'Main Supporting Document 790101_MSD_Main_MIL' to reflect the activities you are applying for and remove reference to WwTW which will not form part of this application.	This has been completed to reflect all activities being applied for and to remove references to the WTW, which do not form part of this application. Some references to the WTW have been left in to provide context. The WtW and STC processes have been separated. The Main supporting document (790101_MSD_Main_MIL December 2024) has been updated to reflect these changes
Site Layout Plan	2	Your site layout plan does not include your current permitted boundary. Update your site layout plan to include your current permitted boundary.	790101_SiteLayoutPlan_MIL December 2024' has been updated to include your full permit boundary. In addition, all documents that include this site plan have also been updated, and now just reference the updated plan. The site layout plan has been removed from the OMP (790101_ERA_OdourMP_MIL December 2024) but does refer to the updated plan.
Tanks names and volumes	3	Your tank volumes on your process flow contradict the volumes in your main document, your main document references tanks that you have not included within your inventory, and you have identified tanks such as the liquid buffer storage tank but provided no volume. a) Provide a full list of tanks, volumes, state if they are closed or open and if they are partially buried with the above ground operational volume. b) Remove all references from all documents to tanks that do not form part of the activity you are applying for. c) If you have used different names for tanks across different documents update all documents to reflect the volumes and names provided in the list above. d) d) Ensure your secondary containment solution includes all tanks i.e. Liquid buffer storage tank, or where you have	a. All tank volumes have been provided in the ADBA tool, previously only the above ground volumes were shown. All relevant volumes have now been included, along with whether they are open or closed. This is also replicated in a table below this response. b. The non-technical summary has been updated in the MSD (790101_MSD_Main_MIL December 2024) to ensure only tanks that form part of the permit are included. Reference to tanks within the WtW is for context only. c. The Odour Management Plan (790101_ERA_OdourMP_MIL December 2024) has been updated to reflect whether the tanks are open or covered. All key documents have been updated to ensure that tanks are consistently named and have the same volumes throughout. Below this table is an additional table which has been provided to confirm the tank volumes.

Topic of relevancy	Question no.	Question	Response
		identified tanks that you believe do not require containment clearly explain why.	d. The updated ADBA Tool (790101-MMD-IED-MIL-CA-C-001 ADBA P03 December 2024) has been reviewed and updated to includes all tanks.
Generators	4	You have stated within your application that the three diesel generators are not directly associated activities (DAAs) to the main activity and have been removed from the application. We cannot locate a surrender application for these on our system. Confirm that a surrender application for the generators has been submitted.	We are in the process of surrendering the generator from the current CHP permit and applying for a separate combustion permit. This will follow in due course. This application, along with payment, will be sent separately to PSC.
Head of works (HoW)	5	As part of this application your existing HoW waste activity will be updated to modern conditions and in order to undertake this we require the following information. For EWC codes that are currently permitted we would consider these wastes as existing operations and would look to implement an improvement condition as part of the modern permit conditions to assess the fate of impact of the substances emitted to water in line with the improvement condition provided previously. The IC would also be in line with the requirements of 'Non-hazardous and inert waste: appropriate measures for permitted facilities' section 6.4 https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities/6-emissions-control. For all waste codes being accepted to the head of the works waste activity that you are requesting to be in the updated modern permit please provide: a) Confirm the EWC codes to be maintained on this permit and provide evidence that you are currently accepting the waste codes identified. (Note: This can be a single waste transfer note demonstrating that this waste stream has been accepted at site.) Your site plan area seems to exclude the works inlet. It is unclear if this is where waste will be accepted to the head of the works and indirectly discharged. Your permit boundary should include all activities that will form part of your permit b) Clearly explain the location that waste will be accepted to the head of the works and if required ensure that this area is included within your site boundary.	Southern Water have confirmed they are accepting wastes to head of works, currently permitted under an existing EPR/GP3792HY. However, permit EPR/GP3792HY will be modernised. Further clarification for those EWCs are, and WTN provision. The current waste codes identified in permit EPR/GP3792HY are: • 19 08 01 • 19 08 05 • 19 09 01 • 19 09 02 • 20 03 03 • 20 03 04 • 20 03 06 • 20 03 99 a. The current waste codes identified in permit EPR/GP3792HY are as below will be varied accordingly: • 20 03 99 will be updated to 16 10 02 a waste transfer note is provided. WTN is provided.

Topic of relevancy	Question no.	Question	Response
		c) Clearly explain in table 6.3 which emission point is for the HoW discharge and identify on your site plan the effluent sampling point and emission point for the effluent discharge from the head of works activity d) Update and resubmit your process flow to include the existing HoW waste activity.	• 19 08 01 – will be removed as screenings are not accepted at the site and would not go to HoW. • 19 08 05 – will be included in the list of EWC codes accepted pre-AD for anaerobic digestion as part of the IED permit activities. WTN is provided. • 19 09 01 – will be removed as screenings are not accepted at the site and would not go to HoW. • 19 09 02 – will be included in the list of EWC codes accepted. WTN is provided. • 20 03 03 – removed. Street cleaning residues (from Southern Water Services' sewer network only) is accepted as imports from the network classified under 20 03 06 waste from sewer cleaning • 20 03 04 – removed. It is accepted under the Controlled Waste Regulations 2012 and does not need to be permitted. • 20 03 06 – removed, It is accepted under the Controlled Waste Regulations 2012 and does not need to be permitted. Evidence of waste transfer notes for waste received under these codes are presented in 790101_WasteTransferNotes_MIL August 2024 e) The non-technical summary has been updated in the MSD (790101_MSD_Main_MIL December 2024) to clearly explain the HoW activity. The site layout plan (790101_MSD_SiteLayoutPlan_MIL December 2024) to include the cess reception points in the site boundary. b. Table 6.3 in the MSD (790101_MSD_Main_MIL December 2024) has been updated to identify which emission point is for the HoW discharge. The site layout plan has also been updated to identify the effluent sampling point and emission point for the effluent discharge from the head of works activity.

Topic of relevancy	Question no.	Question	Response
			c. The process flow diagram (790101_MSD_ProcessFlow MIL&SHC December 2024) has been updated to include the existing HoW waste activity.
Missing documents	6	We cannot locate the following documents as part of your submission. Please provide copies of the below documents/files. Please note that your application will not be duly made until these have been checked. 790101_MSD_Directors August 2024 790101-MMD-IED-MIL-SIM-M-101 Do-nothing(Tank Failure Only).mp4 790101-MMD-IED-MIL-SIM-M-102 Do-nothing(With Rainfall).mp4 790101-MMD-IED-MIL-SIM-M-103 Option1(Tank Failure Only).mp4 790101-MMD-IED-MIL-SIM-M-104 Option1(With Rainfall).mp4 790101-MMD-IED-MIL-SIM-M-105 Option1A(Tank Failure Only).mp4 790101-MMD-IED-MIL-SIM-M-106 Option1A(With Rainfall).mp4 790101_WasteTransferNotes_MIL August 2024	790101_MSD_Directors August 2024 is provided in the accompanying email. The updated ADBA Tool (790101-MMD-IED-MIL-CA-C-001 P03 December 2024) supersedes the previously submitted model files. The relevant waste transfer notes are provided as 790101_WasteTransferNotes_MIL August 2024
Flare operation	7	BAT 15 states that “BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given below. “which are identified as providing the correct plant design which includes the provision of a gas recovery system with sufficient capacity, and plant management which includes balancing the gas system and using advanced process control.” You have advised in your application that “It is recognised that not all BAT-required parameters are monitored and work is planned to provide the required equipment to meet BAT. A plan providing the measures required to become BAT compliant will be provided within 6 months of permit issue.”, and “This is part of a Biogas programme of projects to ensure assets are correctly sized and operate within the requirements. It is accepted that not all BAT requirements are currently met and a plan outlining the measures to be completed to meet BAT will be provided within 6 months of permit issue.” This statement does not meet BAT and proposals must be submitted with your application. a) Provide your solution for compliance with BAT 15 and 16.	The updated BAT is provided as 790101_BAT_MIL December 2024. The MSD (790101_MSD_Main_MIL December 2024) has also been updated to reflect any changes. Southern Water confirms that they plan to retain the existing flare at Millbrook, but replace, one or both of the CHPs. Gas modelling shows the site experiences flaring greater than 10%, available data shows this to be around 14.3%. The flare has been tested and the emissions are compliant. The flare is not planned for replacement. The CHP solution will be revised to provide the required capacity (either both or one replaced). Additional work is required to ensure all BAT requirements are met (e.g. access platforms for testing, the required testing is fully adopted into BAU and related processes, ensure all required signals for data collation and reporting are provided, all specific requirements are met for MCERTs and M1 & M2 guidance).

Topic of relevancy	Question no.	Question	Response
		b) Explain if your current flare is monitored and how many hours on average it is operating, and what is it monitored for. c) If it is operating over then update your air quality impact assessment to include the flare.	The detail of this is under review and any identified scope will be completed in AMP8. The flare use data forms part of wider data collation and reporting (IT) system improvements planned to meet BAT 2c for inventory, BAT 11 energy and has an influence on BATs 15b, 16b and 21c for incident reporting (re. PVRVs and gas system management). Further information is being collated in line with discussions with the SSD LIA (KS) on 03/12/24 and will be provided in due course (regarding asset replacement plans and timescales but will be provided for all sites even though no asset replacements are required here).
Odour Control unit	8	You have identified an OCU as a 'wet scrubber'. BAT 34 requires that "Water, acid or alkaline scrubbers are used in combination with a biofilter, thermal oxidation or adsorption on activated carbon.	At Millbrook STC, odour control is provided for the sludge reception tanks, cake blending building, PSSTs, gravity belt thickeners, thickened sludge storage tanks (TSSTs)/ digester feed tank and centrifuges. Foul air is treated by a caustic and hypochlorite wet chemical scrubber. At Slowhill Copse, the inlet screens, cess reception system, all sludge holding tanks and the sludge pumping station wet wells, are covered and odour controlled by a biofilter system. Southern Water is progressing detailed survey and assessment of the existing OCUs to understand any additional measures that may be required to meet BAT 34 and 53.
Process flow	9	The process flow provided in' includes tank volumes that do not match your NTS. Update your process flow to remove the tanks volumes, or explain why they are different.	Updated process flow diagram (PFD), has been provided as doc ref 790101_MSD_ProcessFlow_MIL&SHC December 2024. Differences in tank volumes relate to working volumes vs maximum capacity and have been removed from the PFD to prevent confusion and inconsistency. The tank volumes in the NTS are correct.
Waste water emissions during storm overflow conditions at the WwTW.	10	Routine emissions to the WwTW from the installation will be controlled via monitored emission limits as an indirect discharge (as defined in the Waste Treatment BREF). However, as WwTW periodically discharge sewage during storm conditions, it's possible that waste water from the installation could bypass the WwTW treatment processes and be emitted as a direct discharge to water. It is not clear from the application how this abnormal situation will be prevented. Operators of environmental permits cannot emit waste waters directly to surface waters without detailed risk assessment. You must therefore have	The returns from the Millbrook STC enter the WtW process downstream of the storm separation point into the PST distribution chamber. Therefore, all returns from the installation will go through the WtW treatment and cannot be directly discharged during storm conditions. The works return pumping station at Slowhill Copse collects the various drainage flows and pumps to the inlet works before the screens. These screens are upstream of storm separation and therefore, any potentially contaminated water could enter the environment during a storm event. Southern Water will provide a wastewater and digestate buffer storage plan (listed in regard to BAT 4 in the Implementation Plan document reference

Topic of relevancy	Question no.	Question	Response
		procedures to prevent the discharge of wastewater from the installation from bypassing the WwTW treatment processes directly to surface water during storm overflow conditions. a) Provide written procedures which describes the site's contingency arrangements to prevent digestate and effluent being discharged off site while the WwTW are in storm conditions. b) Provide a description of the buffer storage proposals to control or hold emissions to the event of storm overflow conditions at the WwTW. *c)* c) Should any contingency arrangements use storage tanks to act as a buffer, provide evidence that demonstrates the waste waters or digestates can be held in this storage during the period of storm overflows.	790101_MSD_Implementation Plan December 2023). The Plan's purpose is to propose and describe site contingency arrangements to provide appropriate storage capacity or other appropriate measures to prevent or minimise emissions of wastewater or digestate being discharged off site during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions. It is understood the Plan will be required to include, but not be limited to: • Proposals for additional storage capacity with secondary containment within the site boundary for wastewater and/or other digestate during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions. • Procedures to cease discharges during these conditions. • Calculation of a reasonable contingency capacity of waste water and/or other digestate during any occasions when the receiving wastewater treatment works is in storm overflow operating conditions. • A description and design specification of the buffer storage infrastructure and secondary containment measures. The design shall be completed by an appropriately qualified engineer and secondary containment shall be designed in line with CIRIA C736. • A program of works with timescales for the implementation and construction of the buffer storage. • A preventative maintenance and inspection regime.
Indirect emission to water	11	You have identified in table 6.3 indirect emissions to water which do not match your sampling plan or emission point plan that include: • Condensate from the gas pipelines and gas storage bag • Boiler blow down to minimize damage from high mineral content water • Drain down of plan – (Occurs during maintenance when it is necessary to drain down the feed water, hot well or boiler shell.) • Uncontaminated roof water from buildings. • Run off from impervious surfaces • Domestic facilities. • Washwater Your table in 6.3 does not seem to include all emissions such as liquors returning to the head of works. To confirm the WwTW does not form part of your permit boundary, effluent discharged to the head of the works/WwTW is a point source emission to sewer. BAT conclusion	a. Table 6.3 of the main supporting document (790101_MSD_Main_MIL December 2024) has been updated to identify all relevant indirect emissions to water, ensuring that it reflects the site plans provided. The Site Layout Plan (document reference 790101_MSD_SiteLayoutPlan_MIL&SHC December 2024) has been updated to include all emission and monitoring points across the Site, and any changes made for the inclusion of the HoW activity. Document reference 790101_Sampling proposal_MIL December 2024 has been updated to reflect any changes to the emission and monitoring points.

Topic of relevancy	Question no.	Question	Response
		3 requires operators to have an emissions inventory for the effluent. You must identify all emissions and clearly identify where these can be sampled and where they will leave the site boundary. Where you have a separate waste process such as the strategic liquid storage facility you must clearly identify any emission point and keep this separate. a) Update table 6.3 of your main permit application to identify all relevant indirect emissions to water, ensuring that it reflects the site plans you have provided.	

Site Area	Tank designation	Volume (m³)	Bund	Above Gound Volume	Closed?
Millbrook STC	Digester 1	2,500	Main	Tank is above ground	Yes
Millbrook STC	Digester 2	2,500	Main	Tank is above ground	Yes
Millbrook STC	Digester 3	2,500	Main	Tank is above ground	Yes
Millbrook STC	Digester 4	3,251	Main	Tank is above ground	Yes
Millbrook STC	Post Digestion Tank PDST 1	535	Main	Tank is above ground	Yes
Millbrook STC	Post Digestion Tank PDST 2	535	Main	Tank is above ground	Yes
Millbrook STC	Liquor buffer storage tank	572	Main	Tank is above ground	Yes
Millbrook STC	Post Screened Storage Tank 01	2,500	PSST Bund	332	Yes
Millbrook STC	Post Screened Storage Tank 02	2,500	PSST Bund	332	Yes
Millbrook STC	Thickened Sludge storage Tank 01	639	TSST Bund	Tank is above ground	Yes
Millbrook STC	Thickened Sludge storage Tank 02	639	TSST Bund	Tank is above ground	Yes
Slowhill Copse WtW	Unscreened sludge tank 1	1,889	Unscreened Sludge	1612	Yes
Slowhill Copse WtW	Unscreened sludge tank 2	2,055	Unscreened Sludge	1612	Yes
Slowhill Copse WtW	Unscreened sludge tank 3	2,055	Unscreened Sludge	1419	Yes
Slowhill Copse WtW	Post Screened Storage Tank 01	1,141	Screened Sludge	468	Yes
Slowhill Copse WtW	Post Screened Storage Tank 02	1,141	Screened Sludge	468	Yes