MOTT MACDONALD

Fullerton Sludge Treatment Centre Environmental Permit Application

Main Supporting Document

January 2025

FileRef

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	05/01/2022	Olivia Ellson	Shannon Stone	Anita Manns	First Draft
B	15/02/2022	Olivia Ellson	Shannon Stone	Anita Manns	Second Draft
C	23/03/2022	Olivia Ellson	Shannon Stone	Anita Manns	Final
D	09/02/2024	Shannon Stone Isobel Moss	David Dray	Anita Manns	Resubmission for client review
E	28/02/2024	Isobel Moss	David Dray	Anita Manns	For EA submission
F	27/01/2025	Anita Manns	Claire Cowdrey	Anita Manns	Updated for NDM RfI Response Jan 25

Document reference: 790101_MSD_Main_FUL January 2025

Information class: Standard

Contents

Tables

1 Non-technical summary

1.1 Overview of the site and activities

Fullerton is a Sludge Treatment Centre (STC) (also known as the “Site”) and an associated Wastewater Treatment Works, which is located on Romsey Road, Andover, Hampshire, SP11 7HR. National Grid Reference: SU 36859 41401.

The WTW is operated under the Urban Wastewater Treatment (England and Wales) Regulations 1994 and has a standalone Water Discharge Activity Environmental Permit, that will remain an independent permitted activity.

The STC in operation is a non-hazardous waste activity which is currently carried out under registered S1, S2, D5 and U6 exemptions. The waste activity comprises imports, physio-chemical and anaerobic digestion (AD) treatment, and the storage of waste, all for recovery purposes. The STC handles waste derived from the wastewater treatment process, either indigenously produced on-site or imported from other Southern Water owned assets.

The site currently has two existing Environmental Permits in operation. Permit EPR/SP3492HL (biological treatment facility (A23)) is for tankered waste (trade and domestic) imports to the head of the works at the site and Permit EPR/PP3303PQ is for the use of a combined heat and power plant (CHP) (Tranche B specified generator) utilising biogas to generate electricity. Five directly associated activities (DAAs) are also permitted and include sludge reception and storage, sludge thickening and dewatering, biogas conversion, storage and combustion, and cake storage.

Southern Water wishes to vary permit EPR/SP3492HL into an installation permit for the Site into a single consolidated permit to include:

- Anaerobic digestion of sludge
- Acceptance of digested cake and other wastes for temporary storage
- Acceptance of waste to the head of the works (as a waste activity)

The CHPs and boilers will be DAA’s to the installation activity, with the additional waste activities for the acceptance of waste to the head of the works and the acceptance of waste for temporary storage as separately listed activities in the installation permit.

Anaerobic digestion of sludge

As advised by the Environment Agency through consultation at WaterUK Waste and Recycling Network and a letter sent to all Water and Sewage Companies at director level in July 2019, Southern Water is applying to vary and consolidate the above mentioned existing bespoke permits into a Bespoke Installation Permit for the STC waste activity, following a joint decision made by Environment Agency and Department for Environment, Food and Rural Affairs (DEFRA) that AD treatment facilities at WTW STCs are covered by the Industrial Emissions Directive and can no longer operate under standard environmental permits or exemptions.

The primary permitted installation activity will be the AD treatment facility. The AD facility will treat indigenously produced and imported sludges. Permitted DAAs will be the import of waste from other WTW assets; the physio-chemical treatment of imported and indigenously produced sludges; the storage of indigenously produced sludges, imported sludges and the sludge cake from the AD facility; the storage of biogas derived from the AD treatment of waste and the combustion of biogas in an on-site Combined Heat and Power plant (CHP). In the

event the CHP cannot run in an emergency or due to operational issues, biogas will be combusted via an on-site flare stack and/or back-up boiler system.

Southern Water wishes to vary permit EPR/SP3492HL and consolidate permit EPR/PP3303PQ into an installation permit for the site. It is intended that the AD installation waste recovery activity, imports of tankered waste and operation of the CHP will be three separate listed activities on a single consolidated Installation permit.

Temporary storage of imported digested cake, grit and screenings and other solid waste from sewer cleaning (e.g. vactor).

Digested cake is imported for temporary to allow for extended maturation where capacity is not available elsewhere. Cake is imported from Millbrook, Budds Farm and Ford predominantly and are stored in separate bays. The bays are cleaned out after use prior to refilling.

Grit and screenings are imported to 1 No. designated cake bay for drying out and bulking up, prior to treatment or disposal elsewhere. This bay is divided in two halves. One half is used for grit and screenings and the other half is used for vactor waste.

Acceptance of waste to the head of the works

Southern Water wishes to remain able to accept waste to the head of the works. This is currently carried out under permit EPR/SP3492HL. The tankered liquid waste (including cess and trade waste) is discharged to the dedicated reception facilities, before joining the incoming, indigenous flows, from the sewer network, into the head of works to be treated through the WtW. The total annual tonnage to be accepted will remain at 415,300 wet tonnes.

1.2 Overview of the STC process

Currently, Fullerton STC accepts both indigenous and imported primary sludge. The Site receives around 680m^3 of liquid sludge import by tankers weekly.

The indigenous and imported sludge is stored in 2 No. sludge reception tanks (260m^3 each) before being pumped through 2 No. strain presses. Screened sludge is stored in 2 No. screened sludge storage tanks (1,000m^3 each) from where it is fed to 2 No. drum thickeners.

Thickened sludge is stored in 1 No. thickened sludge storage tank (90m^3) from where it is fed to 3 No. anaerobic digesters (950m^3 each) at 7% dry solids (DS), operating between 33ºC and 38ºC. Temperature is automatically maintained by heat exchangers. Polyelectrolytes are added to aid the thickening process.

Digested sludge is stored in 2 No. post digestion storage tanks (PDST) (287m^3 each) from where it is fed to 2 No. centrifuges for dewatering.

Digested sludge cake is stored in 6 No. indigenous cake bays (~2,000m^3 in total) before being recycled to farmland. 1 No. cake bay is used for centrifuge reception and moved to one of the other 5 No. bays for storage. The cake bays take 5-6 weeks to fill.

Digested sludge cake is imported from Millbrook STC and occasionally from other sites in emergencies (including Budds Farm and Ford). The imported cake is stored in 8 No. imported cake bays (~4,000m^3 in total). Cake from different sites are kept separate. for further maturation. 1 No. cake bay is designated for use for the storage and bulking up imported grit and screenings and other solid wastes from sewer cleaning (e.g. vactor) prior to being sent off site for treatment or disposal elsewhere. The cake bays are thoroughly washdown after emptying to prevent cross contamination and are clearly identified using appropriate signage.

Biogas produced by the digestion process is stored 1 No. double skinned gas bag holder (400m^3). Biogas is combusted in a CHP plant in order to generate electricity to power the Site's

electrical equipment and processes, and heat to maintain temperature within the digestion process,

The 1 No. CHP unit has a thermal rated input of 1.23MWth and 2 No. dual fuel boilers (1 No. 0.78MWth and 1 No. 0.46MWth) powered by biogas and diesel, which are used then the CHP engine is offline. The specifications of the combustion plant are presented in Table 1.1.

Liquors from drum thickeners, are pumped to 3 No. liquor buffer tanks (340m^3 each) and centrifuge liquors are pumped to the 2 No. centrifuge liquor buffer tanks (115m^3 each), before being pumped to the primary tank distribution chamber by the works return pumping station downstream of storm separation.

The Site has 2 No odour control biofilter systems (utilising seashell media) installed in 1998. 1 No. for sludge treatment area (sludge wells, drum thickeners and centrifuges) and 1 No. for the sludge storage tanks. However, both OCU's are currently not in operation.

Table 1.1: Combustion plant details

	CHP	Boiler (Back-up)	Boiler
Make/Model Number	LH A412, Veolia	Eurograde burner ED10S/SG/3H	Strebel boiler RU2 - 8
Date that MCP became operational/ was commissioned	March 2017	Prior to 2016	Prior to 2016
Thermal Input (MWth)	1.23	0.78	0.46
Stack height (m)	10	6	6
Fuel used (biogas, diesel etc)	Biogas	Biogas / Diesel	Biogas / Diesel
Estimated total hours of operation per year	8760	Emergency use only	Emergency use only
MCPD and SG Regs status	Tranche B generator Existing MCP	N/A (>1MWth)	N/A (>1MWth)

The IED permit will include:

- 2 No. Sludge reception tanks (260m^3 each) (covered)
- 2 No. Strain presses
- 14 No. Cake bays
  - 6 No. indigenous cake bays (600 tonnes each – ~2,000m^3 total capacity)
  - 8 No. imported cake bays (800-1,000 tonnes each - ~4,000m^3 total capacity)
- 2 No. Centrifuges (one duty, one standby) (enclosed in building)
- 2 No. Screened sludge storage tanks (1,000m^3 each) (covered)
- 1 No. Thickened sludge storage tank (90m^3) (covered)
- 2 No. Post digestion storage tanks (287m^3 each) (1 No. is covered but free vents, 1 No. is open)
- 3 No. Liquor buffer tanks (340m^3 each) (covered)
- 2 No. Centrifuge liquor buffer tanks (115m^3 each) (covered)
- 1 No. Gas holder (400m^3)
- 2 No. Drum thickeners (one duty, one standby) (enclosed in building)
- 2 No Polymer storge and make up tanks (1 No. for centrifuges and 1 No. for drum thickeners) (2m^3 each) (covered)

- 3 No. Digesters (950m^3 each) (covered)
- 2 No. Boilers (dual fuel) powered by biogas and diesel (backup for when CHP is offline) (0.78MWth and 0.46MWth).
- 1 No. CHP unit (1.23MWth – Tranche B specified generator) powered by biogas
- 1 No. Biogas burner (flare)
- 2 No. Odour control units (OCU) (biofilters utilising seashell media) – 1 No. for sludge treatment area (sludge wells, drum thickeners and centrifuges) and 1 No. for the sludge storage tanks (both currently not in operation).

There is also:

- 2 No. tankered waste reception areas (for cess, chemical toilet and tankered trade waste)

The following are the outputs from the process:

- Screenings and grit – deposited into skips before being removed off-site.
- Biogas – stored in an existing gas holder, then either:
  - Combusted in the CHP or back-up boilers to generate electricity for use on Site
  - Flared in the waste biogas burner
- Cake – stored in bays prior to being shipped off site for recycling to farmland (soil conditioner).

A schematic for the process flow can be found in document reference 790101_MSD_Schematic_FUL January 2025.

1.3 Summary of key technical standards

Table 1.2 lists the technical guidance notes (TGNs) used to inform the techniques and measures proposed to prevent and reduce waste arising and emissions of substances, including during periods of start-up and shut down, momentary stoppage and malfunction, and leaks.

Table 1.2: Part C3, Question 3a, Table 3a: Technical standards

Installation name	**Fullerton STC**	
C3 – Installation		
Description of the schedule 1 activity or directly associated activity	**Best available technique (BATC, BREF or TGN reference)**	**Document reference**
Section 5.4 non-hazardous waste installation - anaerobic digestion installation regulated under the Industrial Emissions Directive, utilisation biogas for energy	• Biological waste treatment: appropriate measures for permitted facilities • Non-hazardous and inert waste: appropriate measures for permitted facilities	• https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply • https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities
B4 – Waste activities		
Description of the waste operation	**Appropriate measure (TGN reference)**	**Document reference**
Acceptance of digested cake, grit and screenings and other solid waste from sewer cleaning (e.g. vactor) for temporary storage. Acceptance of waste to the HoW (existing activity)	• Non-hazardous and inert waste: appropriate measures for permitted facilities • Biological waste treatment: appropriate measures for permitted facilities	• https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities • https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply
General		

Installation name	Fullerton STC	
All activities	**Guidance**	**Document reference**
	• Monitoring stack emissions: technical guidance for selecting a monitoring approach • M1 sampling requirements for stack emission monitoring • Environment Agency environmental permitting guidance, including: • Risk assessments for your environmental permit • Energy efficiency (Energy efficiency for combustion and energy from waste power plants) • Noise assessment and control • H4 Odour management • H5 Site condition report • Control and monitor emissions for your environmental permit	• https://www.gov.uk/guidance/monitoring-stack-emissions-technical-guidance-for-selecting-a-monitoring-approach • https://www.gov.uk/government/publications/m1-sampling-requirements-for-stack-emission-monitoring • https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit • https://www.gov.uk/guidance/energy-efficiency-standards-for-industrial-plants-to-get-environmental-permits • https://www.gov.uk/government/publications/noise-and-vibration-management-environmental-permits • https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management • https://www.gov.uk/government/publications/environmental-permitting-h5-site-condition-report • https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

1.4 Revisions since 2022 application submission

The application was first submitted in 2022. This Main Supporting Document includes details that have been updated following feedback received over the past three years in relation to IED permit applications for the anaerobic digestion of sewage sludge. Table 1.3 provides a summary of the stand-alone documents included as part of this application, and the amendments where applicable. Where a document has not been amended, due to it being applicable, the original reference number remains unchanged. Where a document has been updated this document will supersede any previous versions.

Table 1.3: Summary of revisions

Document name	Latest document reference	Summary of amendments
Main supporting document	790101_MSD_Main_FUL January 2025	Resubmitted – updated to include wider feedback from the Environment Agency and response to Request for Information January 2025.
Environmental Risk Assessment	790101_ERA_FUL January 2025	Resubmitted – updated to include wider feedback from the Environment Agency and response to Request for Information January 2025.
Environmental Constraints Maps	790101_ERA_Maps_FUL February 2024	Resubmitted. Human receptor map screening distance increased to 2km
Bio-aerosol Risk Assessment	790101_ERA_BioaRA_FUL February 2024	Resubmitted – updated to include bio-aerosol monitoring proposals and new windrose.
Odour Management Plan	790101_ERA_OdourMP_FUL January 2025	Resubmitted – updated to include wider feedback from the Environment Agency and response to Request for Information January 2025.
Climate Change Risk Assessment	790101_ERA_CCRA_FUL	No change. To be included as part of the management system for the site.

Document name	Latest document reference	Summary of amendments
Site Condition Report	790101_MSD_SCR_FUL January 2025	Site scope defined and screening distances clarified in relation to STC permit boundary. Updated in response to Request for Information January 2025.
BAT analysis	790101_MSD_BAT_FUL January 2025	Resubmitted – updated to include changes by Southern Water and wider feedback from the Environment Agency and response to Request for Information December 2024.
Site Layout and Location Plan	790101_MSD_SiteLayoutPlan_FUL January 2025	Resubmitted – updated to reflect existing permit boundary, proposed secondary containment, liquor transfer point, liquor sampling point and changes to point source emissions in response to Request for Information January 2025.
Drainage Plan	790101_MSD_DrainagePlan_FUL	No change
Schematics	790101_MSD_Schematics_FUL January 2025	Resubmitted – updated to include separation of AD and waste activities in response to Request for Information January 2025
Environmental Management System Certificate	790101_MSD_EMS December 2023	Resubmitted. Certificate has been renewed. No change for January 2025
Relevant Offences	790101_MSD_RelevantOffences February 2024	Updated to December 2023.
Details of Directors	790101_MSD_Directors February 2024	Updated to time of resubmission in February 2024.
Competency assessment certificates	790101_MSD_CompetencyAssessmentCertificates_FUL	Retracted, and replaced with Competency Management System.
Competency Management System	790101_MSD_CMS December 2023	Substitutes CoTC assessment certificates
Material Safety Data Sheets	790101_MSD_MSDS_FUL February 2024	Updated to time of resubmission
Leak Detection and Repair Plan	790101_MSD_LDAR_FUL February 2024	Additional document
Duty of Care	790101_MSD_DutyofCare_FUL February 2024	Additional document in February 2024, but superseded by the Waste Acceptance document listed below.
CIRIA assessment and modelling	790101-MMD-IED-FUL-CA-C-001-IED ADBA tool P03 January 2025	Additional document. updated as part of response to Request for Information January 2025 Supersedes 790101-MMD-IED-FUL-SIM-M-101 Do-nothing(Rainfall included) 790101-MMD-IED-FUL-SIM-M-102 Do-nothing(Tank Failure Only) 790101-MMD-IED-FUL-SIM-M-103 Option 1 (Rainfall included) 790101-MMD-IED-FUL-SIM-M-106 Option1A(Tank Failure Only) 790101-MMD-IED-FUL-SIM-M-107 Option2(Rainfall Included) 790101-MMD-IED-FUL-SIM-M-108 Option2(Tank Failure Only)
Residue Management Plan	790101_MSD_ResidueMP_FUL January 2025	Updated to include wider feedback from the Environment Agency and responses to Request for Information from other sites.
Accident Management Plan	790101_MSD_AMP_FUL February 2024	Additional document.

Document name	Latest document reference	Summary of amendments
Revised containment plan (ABDA Tool)	790101_790101-MMD-IED-FUL-CA-C-001 - P03 IED Fullerton ADBA Tool (Jan 25)	Updated as per CIRIA assessment and modelling above
Implementation Plan	790101_MSD_ImplementationPlan December 2023	Additional document
Form Part A	790101_App_PartA_FUL	No change
Form Part C2	790101_App_PartC2_FUL	No change
Form Part C3	790101_App_PartC3_FUL	No change
Form Part B4	790101_App_PartB4_FUL January 2025	Additional document to include the acceptance of digested cake, grit and screenings and other solid waste from sewer cleaning for temporary storage
Form Part B6	790101_App_PartB6_FUL	Additional document (not previously required)
Form Part F1	790101_App_PartF1_FUL	No change
Envirocheck Report	790101_MSD_SCR_FUL_AppB_Envirocheck	Additional document, updated as part of response to Request for Information January 2025
Waste transfer notes	790101_WasteTransferNotes_FUL January 2025	Additional document, updated as part of response to Request for Information January 2025
Sampling proposal	790101_Sampling proposal_FUL January 2025	Additional document, updated as part of response to Request for Information January 2025
Appropriate Measures Assessment	790101_Appropriate Measures_FUL January 2025	Additional document, included as part of response to Request for Information January 2025

2 Introduction

2.1 Overview

This document has been prepared to support the application to vary and consolidate the existing bespoke waste activity permits into a bespoke installation Environmental Permit (hereafter referred to as 'the Permit'), EPR/SP3492HL and EPR/PP3303PQ for Fullerton Wastewater Treatment Works (WTW) and Sludge Treatment Centre (STC) ('the Site') on behalf of Southern Water Services Limited ('Southern Water' or 'the Operator').

Following the joint Environment Agency and DEFRA decisions that AD treatment facilities at WTWs and STCs are covered by the Industrial Emissions Directive (IED) the intent of the application is to ensure the Site is permitted in line with the IED and the EPR 2016, as amended.

This document contains a description of the Site, the proposed permitted activities and Directly Associated Activities (DAAs), an assessment of the possible effects of these activities and responses to questions in Parts A, B4, C2, C3, B6 and F1 of the application documentation (plus supporting information where required). Completed forms Part A, B4, C2, C3, B6 and F1 are included as separate documents.

2.2 Document content and structure

The following application forms have been complete to support the application and have been submitted as stand-alone documents:

- Part A: About You (Document reference 790101_App_PartA_FUL)
- Part B4: New bespoke waste operation (Document reference 790101_App_PartB4_FUL January 2025
- Part C2: Varying a bespoke permit (Document reference 790101_App_PartC2_FUL)
- Part C3: Variation to bespoke installation permit (Document reference 790101_App_PartC3_FUL)
- Part B6: New bespoke water discharge activity or groundwater activity (point source discharge) or point source emission to water from an installation (Document reference 790101_App_PartB6_FUL)
- Part F1: Charges and declarations (Document reference 790101_App_PartF1_FUL)

The main body of the Permit application document ('the Main Supporting Document') includes all the supplementary information required in response to relevant questions within the Part A, Part B4, Part C2, Part C3, Part B6 and Part F1 application forms for which there was insufficient space on the forms to answer the questions in full.

The Environmental Permit variation application document ('the Main Supporting Document') consists of two main parts:

- Chapter 5 provides the general information required to inform Part C2 relating to the variation of bespoke permit; and
- Chapter 6 provides the more detailed information required to inform Part B4 and Part C3 relating to the variation of a bespoke installation permit.
- Chapter 7 provided the more detailed information required to inform Part B6.

Part F1 covers the required financial information required for payment of the application fee.

Additional information included as part of this submission and not as stand-alone documents, are found in the following appendix:

- Appendix A – European Waste Catalogue (EWC) Codes

3 Process Description of wastewater treatment and sludge treatment

3.1 Wastewater Treatment Works

This subsection has been provided for context only.

The Fullerton catchment services an equivalent population of 67,804. The catchment covers Andover and surrounding villages over a large area. The sewerage systems are mainly gravity dotted with 35 wastewater pumping stations. Most of the pumping stations pump the sewage to Anton Lane Andover WPS, which serves as the main terminal pumping station of the catchment with a 900 mm diameter, 4,225m long rising main. A small number of pumping stations pump to Church Lane Goodworth Clatford WPS which serves as another terminal pumping station of the catchment with a 150 mm diameter, 1,010 m long rising main. Other significant wastewater pumping stations include Quarley WPS and Grateley Village WPS, which serve remote villages to the west with 2,477 m and 2,068 m long rising mains.

The bulk of the sewage is pumped to the treatment works from Anton Lane Andover WPS via a 900 mm rising main. A small part of the sewage is pumped to the treatment works from Church Lane Goodworth Clatford WPS via a 180 mm rising main. In addition, 14% of the population equivalent is cess brought in by road tankers.

All flows to the treatment works are screened through two 19 mm, mechanical bar screens and de-gritted in a detritor. After the detritor, flows more than the permitted flow to full treatment (FFT) value, 453 l/s, overflow the storm weir to four storm tanks. Settled storm sewage is returned by the storm pumping station to treatment just after the storm weir and before flow measurement. When the storm tanks are full during storm events, excess storm sewage overflows the storm tanks via four 6mm 2D storm screens, each rated at 141 l/s, which keep the rag in the storm tanks and with storm sewage discharged to River Test. Storm screens could be blocked and cause overflow of the storm tanks.

Flows up to the permitted flow to full treatment (FFT) value pass to the primary tank distribution chamber from where it is combined with works returns from the works return pumping station and are distributed to four primary settlement tanks which are auto-desludged by actuated valves timed in sequence with the scraper bridges. Ferric is dosed into the sewage for phosphorus removal before primary settlement.

Settled sewage is then split in two streams. 75% is pumped to two plastic media filters and 25% gravitates to four mineral media filters. There is no Copasacs to protect the filters from rags, though serious rag issues are not experienced. The plastic media filters have an internal recirculation loop via a pumping station which returns filter effluent to the head of the filters again. The mineral filters have no filter wetting recirculation. Filter effluent from both the plastic and mineral filters converge in the intermediate humus tank flow distribution chamber and is split to four intermediate humus tanks which are auto-desludged by an airlift system.

Humus effluent from the intermediate humus tanks gravitates to four secondary rectangular percolating filters equipped with mechanically driven flow distribution arms, but no recirculation. The filter effluent gravitates to six final humus tanks which are automatically desludging by two airlift systems.

Humus effluent gravitates to the Sand Filter Feed Pumping Stations where it is pumped to six Deep Bed Sand Filters. Sand filter effluent flows via the final effluent sampling chamber to be discharged to River Test.

3.2 Sludge Treatment Centre

Fullerton serves as a sludge treatment centre (STC), which accepts both indigenous and imported liquid sludge. The Site receives around 680m^3 of liquid sludge imports by tankers weekly.

The site is in rural area neighbouring the village of Goodworth Clatford.

The indigenous and imported sludge is stored in 2 No. sludge reception tanks (260m^3 each) before being pumped through 2 No. strain presses. Screened sludge is stored in 2 No. screened sludge storage tanks (1,000m^3 each) from where it is fed to 2 No. drum thickeners.

Thickened sludge is stored in 1 No. thickened sludge storage tank (90m^3) from where it is fed to 3 No. anaerobic digesters (950m^3 each) at 7% dry solids (DS), operating between 33ºC and 38ºC. Temperature is automatically maintained by heat exchangers. Polyelectrolytes are added to aid the thickening process.

Digested sludge is stored in 2 No. post digestion storage tanks (PDST) (287m^3 each) from where it is fed to 2 No. centrifuges for dewatering.

Digested sludge cake is stored in 6 No. indigenous cake bays (~2,000m^3 in total) before being recycled to farmland. 1 No. cake bay is used for centrifuge reception and moved to one of the other 5 No. bays for storage. The cake bays take 5-6 weeks to fill.

Digested sludge cake is imported from Millbrook STC and occasionally from other sites in emergencies (including Budds Farm and Ford). The imported cake is stored in 8 No. imported cake bays (~4,000m^3 in total). Cake from different sites are kept separate. for further maturation. 1 No. cake bay is designated for use for the storage and bulking up imported grit and screenings and other solid wastes from sewer cleaning (e.g. vactor) prior to being sent off site for treatment or disposal elsewhere. The cake bays are thoroughly washdown after emptying to prevent cross contamination and are clearly identified using appropriate signage.

Biogas produced by the digestion process is stored in a double skinned gas bag holder (400m^3). Biogas is combusted in a CHP plant in order to generate electricity to power the Site's electrical equipment and processes, and heat to maintain temperature within the digestion process,

The 1 No. CHP unit has been in operation since March 2017, it is powered by biogas and has a thermal rated input of 1.23MWth, Therefore, the Site falls within the scope of the Medium Combustion Plant Directive (MCPD) since the thermal rated input is greater than 1MWth. The existing CHP unit is currently permitted, under permit EPS/PP3303PQ, as a Tranche B specified generator. It will not be required to meet MCPD requirements as a Medium Combustion Plant until 2030 because it is an existing medium combustion plant (MCP). There are 2 No. dual fuel (biogas and diesel) boilers (1 No. 0.78MWth and 1 No. 0.46MWth), which are used then the CHP engine is offline. The specifications of the combustion plant are presented in Table 1.1.

Liquors from drum thickeners, are pumped to 3 No. liquor buffer tanks (340m^3 each) and centrifuge liquors are pumped to the 2 No. centrifuge liquor buffer tanks (115m^3 each), before being pumped to the primary tank distribution chamber by the works return pumping station downstream of storm separation.

The Site has 2 No odour control biofilter systems (utilising seashell media) installed in 1998. 1 No. for sludge treatment area (sludge wells, drum thickeners and centrifuges) and 1 No. for the sludge storage tanks. However, both OCU's are currently not in operation.

Temporary storage of imported digested cake, grit and screenings and other solid waste from sewer cleaning (e.g. vactor).

Digested cake is imported for temporary to allow for extended maturation where capacity is not available elsewhere. Cake is imported from Millbrook, Budds Farm and Ford predominantly and are stored in separate bays. The bays are cleaned out after use prior to refilling.

Grit and screenings are imported to 1 No. designated cake bay for drying out and bulking up, prior to treatment or disposal elsewhere. This bay is divided in two halves. One half is used for grit and screenings and the other half is used for vactor waste.

Acceptance of waste to the head of the works

Southern Water wishes to remain able to accept waste to the head of the works. This is currently carried out under permit EPR/SP3492HL. The tankered liquid waste (including cess and trade waste) is discharged to the dedicated reception facilities, before joining the incoming, indigenous flows, from the sewer network, into the head of works to be treated through the WtW. The total annual tonnage to be accepted will remain at 415,300 wet tonnes.

4 Part A – About you

4.1 Question 5c: details of directors

The details of directors at Southern Water Services Limited (Company number: 02366670) are provided in stand-alone document 790101_MSD_Directors February 2024.

4.2 Question 7: Contact details

Whereby the contact disclosed in 7a (Anita Manns, Mott MacDonald) is not available the Environment Agency should contact one of the secondary contacts:

Name: Claire Cowdrey

Address: Mott Macdonald, Mountbatten House, Grosvenor Square, Southampton, S015 2JU

Phone number: 023 8062 8523

Email: claire.cowdrey@mottmac.com

5 Part C2 – General – Varying a new bespoke permit

5.1 Question 2 – Table 1: Changes to existing activities

The consolidation application is for permits EPR/SP3492HL and EPS/PP3303PQ and add the scheduled activity for the Anaerobic Digestion of sewage sludge and incorporate T21 exemption to the same permit.

The variation application is to vary permit EPR/SP3492HL. The variation application is to:

- add the scheduled activity S5.4 for anaerobic digestion.
- consolidate EPS/PP3303PQ.
- apply for the waste operation activity for the acceptance of digested liquid sludge (digestate) for dewatering.
- apply for the waste operation activity for the acceptance of cake for temporary storage
- apply for the waste operation activity for the acceptance of grit and screenings for temporary storage.
- update the EWC codes.

5.2 Question 3a: Relevant offences

Details of the relevant convictions are provided in the document reference 790101_MSD_RelevantOffences February 2024 (produced by Southern Water).

5.3 Question 3b: Technical ability

Operational management is provided by qualified individuals and considered to be technically competent. All staff on-site are trained to manage and operate activities without causing pollution.

The Site has two Certificates of Technical Competence (CoTC) holders, [redacted] and [redacted].

Future competency, in terms of the requirements of the environmental permit, will be ensured through the appropriate training of all staff, covering:

- Awareness of the regulatory implications of the Permit for the permitted activity and their own work activities
- Awareness of all potential environmental effects from operation under normal and abnormal circumstances
- Awareness of the need to report any deviation from the Permit
- Prevention of accidental emissions, and action to be taken when accidental emissions occur

All staff are aware of the implications of activities undertaken including the operation of the Site. Skills and competencies necessary to work on-site are documented and records of training needs and training received for these posts are maintained.

Southern Water is currently working on an accredited Competency Management System under the Competent Operator Scheme based on the Anglian Water Services-developed technical competency course to demonstrate that personnel have the appropriate technical skills and knowledge to manage the activities undertaken. This will be independently certificated and audited, through a third-party certification body to ensure it meets the requirements of the

Competence Management System Standard, developed by Energy & Utility Skills[1]. The Competence Management System (CMS) enables Operators to demonstrate technically competent management on the basis of corporate competence and employees' individual competence. Individual competence remains a key component with each employee having the relevant technical competences required to carry out their role.

An e-learning course is being developed and certification is due to be undertaken by LRQA (see document reference 790101_MSD_CMS December 2023). The CMS is to be certified within the first 12 months from issue of a permit for the STC.

5.4 Question 3c: Finances

No relevant persons within Southern Water have current or past bankruptcy or insolvency proceedings against them.

5.5 Question 3d: Management System

The Site operates under the company-wide Environmental Management System (EMS 684981), which is certified to ISO 14001:2015 and is applicable to water supply and wastewater treatment assets at operational sites (wastewater treatment works, water supply works and water booster stations). The EMS is effective for three years from July 2023, until July 2026. The EMS is accredited by the British Standards Institution (BSI).

Demonstrable procedures are outlined in the Site Process Activity Manual (SPAM) and Operating Plan. Any monitoring of emissions to air, land and water is undertaken according to Monitoring Certification Scheme (MCERTS) Standards where the permit requires it, where suitable and available.

As a part of the EMS the Operator has an internal audit programme that takes places every 12 months. During this annual programme operational sites are selected as a subsample and audited. Suppliers and business areas area also audited. An annual report is produced as part of the management review, and this is signed off by Senior Management. In addition, the EMS is subject to audit by the inspection and certification company BSI (for accreditation purposes) each year, and a full certification audit is conducted every three years.

The EMS addresses the following to ensure staff understand their roles and responsibilities to comply with environmental legislation and protect the environment and human health:

- Resources, roles, responsibility and authority
- Legal and other requirements in protecting the environment and human health
- Competence, training and awareness requirements
- Explanation of the Non-conformance, Corrective and Preventative Action Procedures
- Details of the significance of Environmental Aspects and Impacts
- EMS Review and auditing procedure and requirements
- Monitoring and measurement requirements
- Record keeping procedures

To accompany the Permit the Site will have its own Management System in line with the Environment Agency guidance. This identifies all the applicable procedures under the accredited EMS but includes additional site-specific information and procedures.

[1] Energy and Utility Skills (2021) Competence Management System. Available online at: https://www.euskills.co.uk/about/our-industries/waste-management/competence-management-system/

One of the key tasks for Southern Water during the permit determination process is the development of the management system arrangements to cover additional requirements in relation to the permitted operations. This may include the Climate Change Risk Assessment (CCRA) document reference 790101_ERA_CCRA_FUL to address measures to adapt to predicted additional pressure from changes in external operational conditions (such as weather and flooding), if required. Climate change and climate resilience will be included in the ongoing future updates to the EMS.

In addition to the environmental elements of the management system, Southern Water also has a health and safety management system which includes relevant procedures to follow with regards to accidents and the reporting of incidents and near misses. The health and safety manual is designed to comply with the Health and Safety Executive's (HSE) Managing for health and safety guide (HSG65)[2].

The EMS certification can be found in Document reference 790101_MSD_EMS December 2023.

5.5.1 Accident Management Plan

The Site operates under an Incident Management Plan (IMP) which is incorporated into Southern Water's Environmental Management System to prevent and manage environmental related accidents. (For the benefit of the application the IMP will be referred to as the Accident Management Plan (AMP)).

The AMP includes an inventory of substances stored at the site, details on storage facilities, inventory of pollution prevention equipment (spill kits and fire extinguishers), inventory of waste and storage capacities, contact details of internal contacts (Site manager, Environmental Governance Manager and key HSE staff), national and regional (where appropriate) contact details of emergency services and environmental regulators. The AMP is distributed to key staff, to supervise the implementation of the Plan, and shared with external contacts (emergency services and the Environment Agency). The AMP is accompanied by a site plan that identifies the locations of designated storage areas (and their maximum storage capacity), location of spill kits and fire extinguisher and storage locations and hazards posed by chemical substances.

The AMP references procedures to comply with environmental legislation and protect the environment and human health in regard to potential accidents:

- Spill prevention and management, and operation of safety valves
- Procedure for recovering spilled product
- Procedures for the prevention of overfilling vessels, management of plant and equipment failures
- Fire prevention and responses to fires, including fire water containment procedures
- Security measures to prevent unauthorised access, arson and vandalism
- Competence, training and awareness requirements
- Monitoring and measurement requirements
- Record keeping procedures for the recording of incidents, accidents and near misses
- Emergency procedures to notify relevant authorities, emergency services and neighbours

There are several different document types referenced in the AMP. These have been listed below:

[2] Health and Safety Executive (2013), Managing for health and safety (HSG65). Available online at: https://www.hse.gov.uk/pubns/books/hsg65.htm.

- EMS – Environmental Management System
- FEC – Field Event Co-ordinator's Manual
- IMP – Incident Management Plan
- BCP – Business Continuity Plan
- CCM – Control Centre Manual
- SIB – Safety Instruction Book
- CAT – Catastrophe Plans

Table 5.1 below provides a list along with a brief description of each of the procedures which form part of the AMP.

Table 5.1: Incident/Accident Management Plan procedures

SUPPORTING EMERGENCY PROCEDURES – IMP	
Procedure Reference	**Brief summary**
EMS 234 Chemical and Oil Storage	Specifies the standard for storage of chemicals and oils. Outlines the amounts of substances that can be stored on site without consent from the Local Authority, and details how these substances should be safely stored. Also includes Information on the auditing, training requirements and any associated documents.
EMS 260 Pollution Prevention (standard)	Specifies the standard for managing and reducing the risk of land contamination. Outlines the tasks a manager should complete i.e., ensuring spill kits are available, and who to contact in the event of an incident. The document also lists the measures that Southern Water should take to prevent pollution incidents. Also includes Information on the auditing, training requirements and any associated documents.
EMS 265 Discharges (Standard)	Sets the minimum standard of operation in managing effluent and potable water process discharges. Details definitions which relate to the procedure and outlines the standard. Also includes Information on the auditing, training requirements and any associated documents.
EMS 360 Pollution Prevention Procedure	Outlines the responsibilities of staff in relation to the procedure. The Procedure includes details on items such as site drainage, working on or near watercourses and excavations. As well as addressing different spill types; chemical, oil and sludge/sewage. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 361 Chemical Risk Assessment (Procedure)	Defines the procedure for assessing the environmental risk from bulk chemicals. Outlines the procedure for undertaking a risk assessment, and where required which EMS procedures need to be followed. Also addresses risk mitigation and employee awareness as well as the auditing, training requirements, reporting forms and any associated documents.
EMS 362 Environmental Fire Risk Assessment Procedure	Specifies the procedure for minimising the environmental consequence of a fire. Outlines the responsibilities of staff in relation to the procedure and provides a procedure for an Environmental Fire Risk Assessment. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 363 Procedure for Managing oil spills on sites	Outlines the responsibilities of staff in relation to the procedure. The procedure details how to determine the severity of the spill for different scenarios; land, inland waters and coastal waters/beaches, and how to prevent, control and remediate the environmental damage caused by spillages from the site. Information on the auditing, training requirements, reporting forms and any associated documents.

SUPPORTING EMERGENCY PROCEDURES – IMP

EMS 364 Lime Spill Management Procedure	Outlines the procedure for managing lime chemical spills at STCs. Defines the responsibilities of staff, and the procedure for managing the spill including the spill assessment and notification and escalation. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 365 Discharges Procedure	Defines the procedure that must be adopted when managing intermittent discharges. Outlines the responsibilities of staff in relation to the procedure and outlines the procedure where an emergency discharge is foreseeable for both emergency and stormwater and potable water. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 381 Operational Waste Procedures	Specifies the procedure for managing wastes. The procedure addresses the definitions of different waste types and outlines a general procedure for managing waste. Identifies where further procedures should also be followed for specific waste types e.g., asbestos, WEEE and waste oils. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 382 Hazardous Waste Procedures	Specifies the procedure for moving hazardous waste between different sites. The procedure addresses identifying hazardous waste, storage of hazardous waste, consignment notes and record keeping. Information on the auditing, training requirements, reporting forms and any associated documents.
EMS 461 Chemical Risk Assessment (Form)	A template for a chemical risk assessment including the following: • Site details • Chemical details • Chemical classification • Risk activity • Risks for health, fire/dsear and environment • Handling, usage and storage requirements • Management of spills • Disposal • Safety data sheet.
EMS 480 Waste Descriptions	Provides written descriptions of different waste types covering the following: • Process giving rise to the waste, • Waste characteristics, • Handling advice, • Containment • Disposal. • Name of waste • Waste classification • Producer and registered office details • EWC • Controlled Waste Regulations 2012 description • Waste type • Form • Temperature; and • SIC code. Information on the auditing, training requirements, reporting forms and any associated documents.

SUPPORTING EMERGENCY PROCEDURES – IMP

FEC 307 Reporting of Unauthorised Access, Including Loss, Theft and Vandalism	Outlines the responsibilities of staff in relations to the reporting these incidents, and the procedure to be followed. Also includes Information on the auditing, training requirements and any associated documents.
FEC 320 Process Related Incidents	Specifies the procedures to follow in responding to process-related pollution incidents. Responsibilities of staff are outlined in the procedure, as well as contacting the FEC, FEC actions and reporting procedures. Information on the auditing, training requirements, reporting forms and any associated documents.
FEC 322 – Spillage Procedure	Outlines the responsibilities of staff in relation to the procedure. The procedure outlines the process for handling spillages on site including: • Spillage assessment • Notifications and Escalation • Containment • Awareness and Training Information on the auditing, training requirements, reporting forms and any associated documents.
IMPO_101 – Overview of the Incident Management Plan	This document sets out the overall structure of the Incident Management Plans and provides a short overview of each of the main plans.
IMP 217 and IMP 218 Team Roles – Objectives and Responsibilities	Sets out the Objectives and Responsibilities for roles within the Incident Management Team and provides guidance for the ELT Representative. IMP 217 identifies when Southern Water should contact the Environment Agency, and IMP 218 identifies the process for contacting other authorities.
BCP 415 Guidance on Reporting Potential Media Interest	Sets out the types of incidents to be reported back by Field Operations Staff & Contract staff working on behalf of Southern Water that will potentially attract media interest, including contact numbers.
CCM 302 Procedure Following the Receipt of a Fire Alarm	Provides a consistent regional approach to dealing with any formal notification of a fire alarm within the Company. Outlines the responsibilities of staff, the procedure for when a fire alarm notification is received, inspections/audits, training and any associated documents.
SIB 603 Risk Assessment and Safety Instructions for Fire Awareness	Covers the following: • Training needs of staff and fire wardens • What Managers must provide (i.e. fire safety meetings, plans) • Inspections • Safety instructions for occupied sites, unoccupied sites, and company vehicles • Firefighting procedure • Records to be completed
CAT 303 Actions Following Severe Weather or Flood Warnings	Outlines the plan of actions that should be undertaken following severe weather or floor warnings and the responsibilities of the staff under these circumstances. The procedure details checklists for the following scenarios: impending severe weather, flood watch, flood warning, severe flood warning, and an all clear checklist. Also includes Information on the auditing, training requirements and any associated documents.
Environmental Emergencies Poster (EMS)	A poster which should be displayed on all sites. The poster lists the type of emergency (fires, spills etc) and both the action which should be undertaken the contact phone number which should be called. The poster also highlights a list of things which should be checked prior

SUPPORTING EMERGENCY PROCEDURES – IMP	
	to work starting such as the H&S notice boards, environmental notice boards and continuity plans.
Pollution 30 Minute Plan	Outlines a five-step plan for responding to a pollution incident in 30 minutes and outlines what should be done at each of the five stages.
Site Chemical Risk Register	Southern Water electronic database containing an inventory of hazardous substances used and stored by Southern Water and those relevant to individual sites, helping Southern Water to control substance use and comply with the COSHH regulations.
Alternative Response Coordinators Booklet	These documents provide flowcharts and a step-by-step guide for completing the Alternative Response tasks. Section 5: Resilience Guidance identifies criteria on when to contact local authorities and other first responders.

The EMS certification can be found in Document reference 790101_MSD_EMS December 2023.

The Accident Management Plan can be found in document reference 790101_MSD_AMP_FUL February 2024

5.6 Question 5a: Site layout plan and process diagram

Plans provided, to satisfy question 5a, can be found in the following stand-alone documents:

- Site Layout and Location Plan – Document reference 790101_MSD_SiteLayoutPlan_FUL January 2025
- Drainage Plan – Document reference 790101_MSD_DrainagePlan_FUL
- Schematics – Document reference 790101_MSD_Schematics_FUL January 2025

5.7 Question 5b: Site condition report

In accordance with Environment Agency requirements, a Site Condition Report (SCR) has been produced to demonstrate the condition of the land and groundwater at the Site on issue of the proposed permit. The SCR included the following details (section 1 to 4 of the Environment Agency template[3].

- Site details
- Condition of the land at permit issue
- Permitted activities
- Changes to the activity

A copy of the SCR can be found as document reference 790101_MSD_SCR_FUL January 2025.

5.8 Question 6: Environmental risk assessment

As part of the application for an environmental permit, operators must assess the risk to the environment and human health from the activities that they propose to undertake. This uses the methodology outlined in the Environment Agency's 'Risk assessments for your environmental permit[4]'.

[3] Environment Agency (2013). Environmental permitting: H5 Site condition report. Available online at: https://www.gov.uk/government/publications/environmental-permitting-h5-site-condition-report

[4] Environment Agency (2023) Risk assessments for your environmental permit. Available online at: https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit

The Environmental Risk Assessment (ERA) sets the requirements for the management of the permitted area, emission control measures etc. It assesses the risks to the environment, amenity and human health. All control measures within the rules must be adhered to in order to obtain the permit.

The ERA assesses the impacts from the following environmental concerns:

- Point source and fugitive emissions to air
- Point source and fugitive emissions to water and land
- Noise and vibration
- Odour
- Litter, mud and debris
- Vermin and insects (pests)
- Human health and environment safety (i.e. visual impacts, site security, flood risk)
- Natural habitats and ecology

Where emissions result in insignificant effects these have been screened out and where further detailed assessments of potential environmental impacts are required this is noted.

A copy of the ERA can be found as document reference 790101_ERA_FUL January 2025.

The Accident Management Plan can be found in document reference 790101_MSD_AMP_FUL February 2024.

6 Part C3 – Variation to a bespoke installation permit

6.1 Question 1: Table 1a: Activities applied for

Table 6.1: Question 1, Table 1a: Activities applied for

Installation name	Schedule 1 or other references	Description of the Activity	Activity capacity	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity	Non-hazardous waste treatment capacity
Fullerton STC	S5.4, Part A (1), (b) and (i)	Anaerobic digestion	Annual: 206,794 wet tonnes Daily: 566 wet tonnes	Recovery or a mix of recovery and disposal of non-hazardous waste with a biological treatment capacity exceeding 100 tonnes per day if the only waste treatment is anaerobic digestions. R3 – Recycling/ reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes) R13 – Storage of waste pending any of the operations numbered R1 to R12.	0	Annual: 206,794 wet tonnes Daily: 566 wet tonnes
	Schedule 25B – Specified generator	Biogas CHP engine	1.23MWth	R1		
Waste operations which do not form part of an installation						
		Tankered waste imports	Annual: 415,300 wet tonnes	R3 D9	0	Annual: 415,300 wet tonnes
Directly associated activities						
	Physical treatment of waste	Recycling/ reclamation of organic substances which are not used as solvents		R3		
	Waste reception	Import of liquid sludge and cake		R3 D9		
	Use of biogas	Use principally as a fuel or other means to generate energy		R1		
	Use of auxiliary standby flares	Incineration on land		D10		

Installation name	Schedule 1 or other references	Description of the Activity	Activity capacity	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity	Non-hazardous waste treatment capacity
	Standby boiler	Used for emergency only		D10		
	Diesel Generator	Used for emergency to serve the STC.		R1		
	Use of pressure release values	Used for emergency only, do not export electricity to the grid.				
	Storage	Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).		R13		
	Raw material storage	Storage of raw materials including chemicals, lubrication oil, antifreeze, diesel, activated carbon		R05		
	Discharge of condensate	Condensate from the CHP exhaust, flare gas pipelines, gas storage bag from collection to the point of discharge at the adjacent WTW.				
For installations that take waste	Total storage capacity	12034m^3				
	Annual throughput	87,642 wet tonnes into site 57,560 wet tonnes for indigenous 30,082 wet tonnes for imports 119,151 wet tonnes additional capacity 74,291 wet tonnes digester capacity				

Table 6.2: B4 Table 1a: Activities applied for (waste operation activity)

Name of waste operation	Description of the waste operation	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity	Non-hazardous waste treatment capacity
Acceptance of imported, digested cake for temporary storage	Physical treatment of waste. Recycling/ reclamation of organic substances which are not used as solvents.	R3	N/A	At any one time – 3,000m^3
Acceptance of imported grit and screenings and other wastes from sewer cleaning (e.g. vactor) for temporary storage	Physical treatment of waste. Recycling/ reclamation of organic substances which are not used as solvents.			At any one time – 1,000m^3
For all waste operations	Total storage capacity	Acceptance of imported, digested cake for temporary storage – 3,000m^3. (across 7/8 bays) Acceptance of imported grit and screenings and other wastes from sewer cleaning (e.g. vactor) for temporary storage – 1,000m^3 (across 1/8 bays)		
	Annual throughput (tonnes each year)	Acceptance of imported, digested cake for temporary storage – 60,000 tonnes Acceptance of imported grit and screenings and other wastes from sewer cleaning (e.g. vactor) for temporary storage – 2,000 tonnes		

6.1.1 Question 1: Table 1b: Types of waste accepted

Southern Water requires the permit for the Fullerton STC to be authorised to accept sludge waste to undergo anaerobic digestion to comply with the Industrial Emissions Directive. It is requested that the annual quantity of indigenous and imported sludge and cake imports to be accepted is unchanged at 415,300 wet tonnes (currently permitted under EPR/SP3492HL) and 206,794m^3 for anaerobic digestion. The types of waste accepted are shown in Appendix A.

6.2 Question 2: Point of source emissions to air, water and land

6.2.1 Emissions to air

Table 6.3: Part C3, Question 2, Table 2: Point source emissions to air

Installation name	Fullerton STC			
Point source emissions to air				
Emission point reference and location	Source	Parameter	Quantity	Unit
CHP stack 1 (A01) SU 36850 41350	CHP engine exhaust stack burning biogas As per EPR/PP3303PQ	Oxides of Nitrogen (as NO_2)	190	mg/m^3
		Sulphur Dioxide	10	mg/m^3
Standby boilers x 2 – sharing same stack (A02) SU 36915 41409	Standby boiler exhaust stack – operating on Biogas or Natural	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	250	Mg/m^3

Installation name	Fullerton STC			
Flare stack 2 (A03) SU 36820 41327	Waste gas burner (flare stack)	Operational hours	No limit set	
Gas holder (A04) SU 36840 41340	2 No. gasholder pressure relief valves	Biogas release and operational events	No limit set	
Anaerobic digester 1 (A05) SU 36854 41401	2 No. anaerobic digester pressure relief valves	Biogas release and operational events	No limit set	
Anaerobic digester 2 (A06) SU 36872 41412	2 No. anaerobic digester pressure relief valves	Biogas release and operational events	No limit set	
Anaerobic digester 3 (A07) SU 436881 41394	2 No. anaerobic digester pressure relief valves	Biogas release and operational events	No limit set	
Odour Control Unit 2 (A08) SU 36859 41503	Channelled emissions to air as identified on Site plan. Including tank vents biofilter.	Ammonia	20	Mg/m^3
		H_2S	No limit specified	
		Odour concentration	1000	Que/Nm^3
Odour Control Unit 3 (A09) SU 36878 41381	Channelled emissions to air as identified on Site plan. Including tank vents biofilter.	Ammonia	20	Mg/m^3
		H_2S	No limit specified	
		Odour concentration	1000	Que/Nm^3

The emission points are shown in drawing reference 790101_MSD_SiteLayoutPlan_FUL January 2025.

6.2.2 Emissions to water (other than sewer)

The drainage network sends water to the head of the works for treatment.

There will be no point source emissions from the Site and no direct discharge of wastewater to controlled waters from STC.

There are no direct potentially contaminated discharges to groundwaters.

Accidental releases of materials to the environment are controlled through adequate containment measures and working procedures in accordance with the EMS. Spill procedures are in place under EMS363 and 364 as well as pollution prevention procedure EMS360. All spillages are recorded in the site diary including actions taken.

6.2.3 Emissions to sewers, effluent treatment plants or other transfers off-site

The release of liquors from the sludge treatment process is considered to be either point source emissions or direct discharges to controlled waters or public sewers, as part of the permit operation. The site layout plan, drawing reference 790101_MSD_SiteLayoutPlan_FUL January 2025, identifies the point at which liquors leave the site to enter the WTW at the inlet. A sampling location has also been identified on the site layout plan, although sampling will be undertaken as part of a wider implementation plan under BAT and IED. An implementation plan is shown in document reference 790101_MSD_ImplementationPlan December 2023. It is therefore, considered that this will be added as Improvement Conditions to the permit.

Any liquid waste will either be reused or discharged to the drainage system of the adjacent Fullerton WTW and will undergo treatment through the works before being discharged under the existing water discharge permit.

On-site WTW effluent will meet the requirements of the existing discharge consent. The water used at the Site will be contained in a closed circuit; all wastewater streams will either be recycled within the process of captured and rerouted to the adjacent WTW.

Discharges will be minimal, typically arising from periodic maintenance/cleaning operations. As such, there are no direct potentially contaminated discharges to controlled surface waters and no significant impacts. All drainage (surface water or foul water) will be captured by the on-site drainage system and returned to the head of the WTW. A drainage plan of the Site is presented in document reference 790101_MSD_DrainagePlan_FUL.

The stormwater drainage of potentially contaminated areas from within the Site boundary will be routed into the sewage treatment process with no discharge outside of the Site. There will, therefore, be no risk of polluted runoff affecting off-site features due to the creation of a new hardstanding area.

Due to the anticipated very low levels of contamination of the water and the volumes involved, no monitoring of its composition is proposed prior to discharge to the WTW.

Any areas of the Site, where there is a risk of contamination of surface water, groundwater or discharge of process waters are located on impermeable concrete surface. All surface water from these areas drain to the WTW internal drainage system and are returned to the head of the works for treatment prior to discharge as final effluent.

A list of the point source emissions to sewers, effluent treatment plants and other transfers off-site is included as Table 6.4.

Table 6.4: Part C3, Question 2, Table 2: Point source emissions to sewers, effluent treatment plants or other transfers off-site

Emission point reference and location	Source	Characteristics	Monitoring/mitigation measures prior to final discharge and emission point discharge
Return to inlet works of Fullerton WTW (W1) SU 37006 41562	Combined liquors including condensate from the gas pipelines, thickener and centrifuge liquors	Condensate with slightly elevated levels of H2S dissolved from the biogas, resulting in a low level of acidity Process liquors	Rerouted to adjacent WTW (W1 – Inlet works SU 37006 41562
B4 – Waste activity – acceptance to head of the works			
Imported tankered waste 1 (S8) SU 36757 41422	Tankered trade and domestic waste to HoW	Variable, from catchment	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562 Monitoring point for sampling as M8 on site layout plan (SU 36760 41423)
Imported tankered waste 2 (S6) SU 70905 05503	Tankered trade and domestic waste to HoW	Variable, from catchment	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562 Monitoring point for sampling as M5 on site layout plan (SU 36988 41563)
Digested cake and grit, screening and sewer cleaning wastes (S3)	Site drainage returns	Variable, from catchment	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562 Monitoring point for sampling as M3 on site layout plan (SU 36684 41376)
C3- Schedule activity (anaerobic digestion)			

Return to inlet works of Fullerton WTW (W1) SU 37006 41562	Combined liquors including condensate from the gas pipelines, thickener and centrifuge liquors	Condensate with slightly elevated levels of H2S dissolved from the biogas, resulting in a low level of acidity Process liquors	Rerouted to adjacent WTW (W1 – Inlet works SU 37006 41562
Combined liquors (S1) SU 36820 41389	Other process liquors	Variable, from processes	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562. Monitoring point for sampling as M1 on site layout plan (SU 36821 41389)
Sludge reception (S2) SU 36876 41493	Waste acceptance from sludge imports	Variable, from catchment	Discharged to adjacent sludge reception point. Monitoring point for sampling as S2 on site layout plan (SU 36879 41493)
Gas condensate (S4) SU 36846 41345	Condensate from the gas pipelines and gas storage bag	Condensate with slightly elevated levels of H2S dissolved from the biogas, resulting in a low level of acidity	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562. Monitoring point for sampling as M4 on site layout plan (SU 36848 41345).
Drum thickener liquors (S7) SU 6833 41365	Process liquors from drum thickeners	Variable, from processes	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562. Monitoring point for sampling as M7 on site layout plan (SU 36837 41365).
Centrifuge liquors (S6) SU 6776 41360	Process liquors from dewatering by centrifuges	Variable, from processes	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562. Monitoring point for sampling as M6 on site layout plan (SU 36833 41365).
Boiler Maintenance	Boiler blow down to minimise damage from high mineral content water.	High purity water with traces of chemicals (used for boiler dosing).	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562.
Drain down of plant	Occurs during maintenance when it is necessary to drain down the feed water, hot well or boiler shell.	High purity water with traces of chemicals (used for boiler dosing).	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562.
Rainwater	Uncontaminated roof water from buildings.	Clean rainwater from building roofs only.	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562. Via site drainage returns (S3) (36682 41378). Monitoring point for sampling as M3 on site layout plan (SU 36684 41376)
Rainwater	Run off from impervious surfaces.	Clean rainwater from runoff	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562. Via site drainage returns (S3) (36682 41378). Monitoring point for sampling as M3 on site layout plan (SU 36684 41376)
Washwater	From the washing down of mechanical equipment during maintenance activities.	Variable – dependant on equipment/infrastructure being washdown	Discharged to adjacent WTW (W1 – Inlet works SU 37006 41562.

Please refer to the ERA (document reference 790101_ERA_FUL January 2024) on the environmental risk the water emissions pose and how these are mitigated, where relevant.

6.2.3.1 Incidents of storming

If incoming flow is greater than the permitted WtW full flow to treatment (FFT) it overflows the storm weir to 4 No. storm tanks (5,200m^3) for holding. Settled storm sewage is returned by the storm pumping station for treatment just after the storm weir and before flow measurement.

Returns from the STC enter the WtW process downstream of storm separation and enter the primary settlement tanks (PSTs) distribution chamber and continue through the WtW process.

Therefore, it is not possible for return liquors to directly discharge into the environment from the installation, without it receiving full treatment in the WtW.

Tankered trade and domestic waste, including cess and chemical toilet waste, is inhibited to not discharge to the works during storm.

Southern Water will provide a wastewater and digestate buffer storage plan (listed in regard to BAT 4 in the Implementation Plan, document reference 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 wastewater 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.

6.2.4 Emissions to land

There will be no point source emissions to land as part of the activities carried out on site.

Indigenous sewer grit and screenings are collected in separate skips and removed off site by road vehicle and transported to a suitably Permitted facility.

Grit and screenings generated from the tankered waste reception points and collected in separate skips and removed off-site by road vehicle and transported to a suitably permitted facility.

Please refer to the ERA (document reference 790101_ERA_FUL January 2025) on the environmental risk any the emissions to land pose and how these are mitigated, where relevant.

6.3 Question 3a: Operating techniques

This section provides a technical overview of the components, the proposed techniques and measures to prevent and reduce waste arising and emissions of substances and heat, including during periods of start-up or shut-down, momentary stoppage and malfunction, and leaks. Specifically, consideration is made of:

- The technology to be used
- The process, in terms of how it will be operated and controlled
- In-process controls and Best Available Techniques (BAT) Assessment
- Measures implemented to control emissions to air, water, sewers and land

Table 6.4 lists the technical guidance notes (TGNs) used to inform the techniques and measures proposed to prevent and reduce waste arising and emissions of substances, including during periods of start-up and shut down, momentary stoppage and malfunction, and leaks.

The technical guidance and BAT requirements will also be addressed within Southern Water's Fullerton Working Plan, as part of the EMS, to be made available to staff to ensure compliance with a permit, which covers the following:

- Management of activities, including security and staffing
- Emissions and monitoring, including:
  - Point sources to air, water and land
  - Fugitive emissions
  - Site drainage
  - Storage of waste
  - Odour, noise and vibration
- Site record keeping

Table 6.5: Part C3, Question 3a, Table 3a: Technical standards

Installation name	**Fullerton STC**	
C3 – Installation		
Description of the schedule 1 activity or directly associated activity	**Best available technique (BATC, BREF or TGN reference)**	**Document reference**
Section 5.4 non-hazardous waste installation - anaerobic digestion installation regulated under the Industrial Emissions Directive, utilisation biogas for energy Section 5.4 non-hazardous waste installation – liquor treatment.	• Biological waste treatment: appropriate measures for permitted facilities • Non-hazardous and inert waste: appropriate measures for permitted facilities	• https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply • https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities
B4 – Waste activities		
Description of the waste operation	**Appropriate measure (TGN reference)**	**Document reference**
Acceptance of digested cake, grit and screenings and other solid wastes from sewer cleaning for temporary storage. Acceptance of waste to the HoW (existing activity)	• Non-hazardous and inert waste: appropriate measures for permitted facilities • Biological waste treatment: appropriate measures for permitted facilities	• https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities • https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply
General		

Installation name	Fullerton STC	
All activities	**Guidance**	**Document reference**
	• Monitoring stack emissions: technical guidance for selecting a monitoring approach • M1 sampling requirements for stack emission monitoring • Environment Agency environmental permitting guidance, including: • Risk assessments for your environmental permit • Energy efficiency (Energy efficiency for combustion and energy from waste power plants) • Noise assessment and control • H4 Odour management • H5 Site condition report • Control and monitor emissions for your environmental permit	• https://www.gov.uk/guidance/monitoring-stack-emissions-technical-guidance-for-selecting-a-monitoring-approach • https://www.gov.uk/government/publications/m1-sampling-requirements-for-stack-emission-monitoring • https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit • https://www.gov.uk/guidance/energy-efficiency-standards-for-industrial-plants-to-get-environmental-permits • https://www.gov.uk/government/publications/noise-and-vibration-management-environmental-permits • https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management • https://www.gov.uk/government/publications/environmental-permitting-h5-site-condition-report • https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

A copy of the schematics describing the operation and process can be found in document reference 790101_MSD_Schematics_FUL January 2025.

6.3.1 BAT Assessment

An assessment against the BAT Conclusions set out in the 2014/738/EU: Commission Implementing Decision of 9 October 2014 establishing best available techniques (BAT) conclusions, under the Industrial Emissions Directive 2010/75/EU has been undertaken for all the 16 sites, as a whole, and the outcome of these conclusions can be found in document reference 790101_MSD_BAT_FUL January 2025. This document reflects the existing arrangement at site and any commitments Southern Water has already made during the ongoing application process. It is acknowledged that it does not fully meet BAT in some instances. Changes to site will be undertaken and completed to meet BAT, where applicable. The changes required will be submitted to the Environment Agency, in plans to be submitted as part of Improvement Conditions within the permit, for their agreement and Southern Water's subsequent implementation. An implementation plan has shown in document reference 790101_MSD_ImplementationPlan December 2023.

Included in the Implementation Plan is the wastewater inventory monitoring to be undertaken as per BAT 2, and further information is addressed in Section 6.2.3 On-going monitoring is proposed to be in line with BAT AELs and monitoring frequencies are applicable to treatment of water-based liquid waste and biological treatment of waste, these are outlined in Table 6.1 and Table 6.2 of the BAT assessment.

The Odour Management Plan (document reference 790101_ERA_OdourMP_FUL January 2025) has also been prepared in accordance with the following BAT conclusions, in addition to the H4 guidance:

Supplementary documents for the BAT assessment are provided:

- BAT 1, 21 and 38: Accident Management Plan (AMP) is provided in 790101_MSD_AMP_FUL February 2024. Catastrophic failures, of tanks for example, will be

included in the AMP once final designs are agreed based on the findings in CIRA/ABDA assessment.

- BAT 1, 11, 22 and 35: Residues Management Plan (RMP) is provided in 790101_MSD_ResidueMP_FUL January 2025.
- BAT 1, 8, 10, 12, 13, 14, 33, 34 and 52: Odour Management Plan (OMP) is provided in 790101_ERA_OdourMP_FUL January 2025.
- BAT 1: Environmental Management System is provided in 790101_EMS Certificate December 2023.
- BAT 2 and 52: Description of the waste acceptance and pre-acceptance procedures provided in 790101_WasteAcceptance_FUL January 2025.
- BAT 3, 6, 7 and 20: Sampling commitment and proposal for characterisation is provided in 790101_Sampling proposal_FUL January 2025.
- BAT 14: Leak Detection and Repair Plans (LDAR) are provided in 790101_MSD_LDAR_FUL February 2024.
- BAT 14: Bio-aerosols Risk Assessment (BRA) is provided in 790101_ERA_BioRA_FUL February 2024.
- BAT 17: Environmental Risk Assessment (ERA) is provided in 790101_ERA_FUL January 2025
- BAT 19 and 38: ABDA Tool and proposed containment solution is provided in 790101-MMD-IED-FUL-CA-C-001 - ADBA P03 and the site layout plan 790101_MSD_SitelayoutPlan_FUL January 2025.
- BAT 19: Covering of tanks is provided in the Implementation Plan, 790101_MSD_Implementation Plan December 2023.
- BAT 19: Drainage is provided in 790101_ERA_Drainage Plan_FUL.
- BAT 23: Energy Efficiency is provided in 790101_MSD_Main_FUL January 2025
- BAT 34: Reducing channelled emissions, addressed in the Odour Management Plan (OMP), provided in 790101_ERA_OdourMP_FUL January 2025.
- BAT 53: Reducing emission of hydrochloric acid (HCl), ammonia (NH_3) and organic compounds to air addressed in the Odour Management Plan (OMP), provided in 790101_ERA_OdourMP_FUL January 2025.

6.3.2 Appropriate measures assessment

In addition to the Bref and associated BATc, the appropriate measures will form part of the technical standards the Site operates:

- Non-hazardous and inert waste: appropriate measures for permitted facilities
- Biological waste treatment: appropriate measures for permitted facilities

As the Site is existing some aspects of the Appropriate Measures do not apply, as the Site was built and operated prior to the issue of the guidance. Southern Water are committed to develop the application of the key principles from the guidance into Site operation and associated management plans as soon as practicable, to ensure the following:

- Reducing or preventing contamination
- Preventing cross contamination by segregation
- Maintaining appropriate primary and secondary containment
- Ensure the Site does not exceed site capacity (design and permitting constraints)
- General management:

  - Operate with a Management System
  - Operate with applicable specific management plans (odour, accident and residue plans)
  - Inspection, maintenance and monitoring regimes
  - Maintaining and reviewing staff competency requirements
  - Maintaining appropriate security measures across the Site
  - Record keeping procedures
  - Contingency plans
- Maintaining appropriate waste storage and suitable segregation, to prevent environmental impacts. Includes tank inspection and maintenance regimes
- Operate and calibrate process monitoring systems
- Record keeping of process outputs, and appropriate handling of residues
- Emissions controls, including prepare an emissions inventory
- Apply process efficiency measures for energy, raw materials, water use and waste minimisation.

As per document reference 790101_Sampling proposal_FUL January 2025, sampling and analysis in relation to permitted waste operations, other than those related to Scheduled Activities, will be undertaken in line with 'Non-hazardous and inert waste: appropriate measures for permitted facilities' guidance text, using an MCERTS accredited, or equivalent, laboratory, where available. This commitment is related to the acceptance of imported wastes to the post digestion at the Site.

Temporary storage of imported digested cake and grit and screenings.

A high-level assessment against the appropriate measures for inert and non-hazardous waste has been undertaken and is presented in document reference 790101_Appropriate Measures_FUL January 2025.

6.4 Question 3b: General requirements

6.4.1 Overview

This section provides an overview of the measures in place at the Site for controlling fugitive emissions, noise and odour. An ERA has been completed and is provided with the application (document reference 790101_ERA_FUL January 2025). The response to this question relates to Table 4 in the Part 3 form.

6.4.2 Control of fugitive emissions to air

There are no significant fugitive emissions to air of gases, vapours or particulates as part of normal Site operations.

Details of the procedures Southern Water follows with regards to the control of mud and debris and potentially polluting leaks and spillages are addressed in the EMS.

As combustion activities are not being changed on site as a result of permitting the AD plant and associated processes, it is not anticipated that Air Dispersion Modelling (ADM) will be required for this permit application. This is because the point sources to air were screened in 2019 as part of the application for first issue of EPR/PP3303PQ, and in accordance with the Environment Agency's guidance on air quality modelling at the time of the permit was granted[5]. The Site screened out from requiring an ADM report because the nearest non-roadside and

[5] Environment Agency (2018). Emissions from specified generators: Guidance on dispersion modelling for oxides of nitrogen assessment from specified generators. Version 1

roadside human receptors are located 600m and 500m from the Site respectively. The boilers and back-up generator were not considered in the assessment because the model was at worst-case with the CHP running 24/7. The boilers will be used in emergency use only and back-up generator is permitted up to 50 hours a year for testing purposes, and therefore not considered necessary to further assess as the 2019 conclusion remains unchanged.

The existing approaches and relevant procedures presented in the EMS and operational procedures are considered to adequately address the emissions that may present a risk, and, therefore, an Emission Management Plan is not considered be required.

6.4.2.1 CHP and flare

The site is considered to have a correctly sized CHP unit for the gas generated.

However, at the time of writing, a combination of equipment issues on site have impacted the gas quality and the measured flare hours shows the site has experienced around 20% flaring (of time, pro-rated to annual from Sept 2024-Jan 2025). Work to address the site issues is in progress.

The CHP is planned to be retained as it is considered correctly sized for a stable operation of the site assets.

The flare is planned to be replaced in AMP8 (based on emission testing results of similar flares), this is scheduled to be in operation by 29/05/2026 in line with the planned works schedule provided to KS (EA) on 17/01/25.

This includes related equipment replacements to ensure all required signals for data collation and reporting are provided, along with additional considerations regarding monitoring and access for testing.

Air Quality Risk Assessment (AQRA) will be updated for the new flare once the appropriate design has been completed.

6.4.2.2 Odour

Fullerton STC is located 500m southeast of the village of Goodworth Clatford, approximately 4km south of the town of Andover, Hampshire. The site is mostly surrounded by agricultural land, with 2 residential buildings (former staff accommodation) adjacent to the east of the site, approx. 15m from the nearest potential emission source (the inlet works).

Most sources of odour identified at the Site have been either covered or are enclosed within buildings except for the cake bays and post digestion storage tanks (although plans are in place to meet BAT). Southern Water plan to cover these tanks as part of the IED improvement scope. Ongoing residual biogas testing and LDAR activities (OGI camera) will help determine the most appropriate abatement solution for this tank, which will inform the connections required for the new roof.

Two odour control biofilter systems (OCU 2 and OCU 3) (utilising seashell media) are installed in 1998 for the STC operations covering the sludge treatment area and sludge storage tanks. OCU 2 has the capacity to treat 606m^3/hr and OCU 3 has the capacity to treat 5,714m^3/hr, when in operation. The OCU's are currently not in operation, however, surveys and investigations, to return to service and make improvements to meet BAT, are ongoing and will form part of the improvement plans. There is no mobile OCU available for use on site.

During the last five years the site has received one odour complaint, in 2021. However, the complaint has been confirmed as not substantiated nor related to the STC.

The Site has an Odour Management Plan (OMP), updated in January 2025, which identifies potential odour emissions from site operations and procedures to manage, control and minimise odour impacts. It sets out the procedures for engaging with neighbours and how the Operator will manage complaints, and the actions to be taken in the case of pollution events. The OMP also describes the monitoring and maintenance procedures to maintain the control measures.

Management of the odour risks at the Site are also addressed in the Fullerton Odour Management Risk Assessment. The risk assessment provides mitigation measures to be followed by all staff to ensure normal operation does not result in odours leaving the STC boundary. The Odour Management Plan can be found in document reference 790101_ERA_OdourMP_FUL January 2025.

The OMP was written in accordance with the Environment Agency's H4 Odour Management guidance (2011).

The level of odour risk from the Site is considered to be low, as shown in Appendix B of the ERA (document reference 790101_ERA_FUL January 2025) and the OMP provides sufficient mitigation.

6.4.2.3 Noise

Initial screening has been carried out for the Site. Since the Site is not undergoing changes to equipment and vehicle movements prior to application submission, a Noise Impact Assessment (NIA) is not considered to be required. Appropriate mitigation for noise and vibration impacts are provided by the ERA.

A Noise and Vibration Management Plan would be required whereby the NIA concludes that noise and vibration requires management, such as monitoring and maintaining abatement measures. Since noise and vibration impacts are considered to be appropriately mitigated in the ERA, a Noise and Vibration Management Plan is also not considered to be required.

There have not been any noise complaints recorded at the Site in the past five years.

6.4.2.4 Dust and particulates

There are not considered to be any significant dust or particulate sources from the Site as identified in the ERA document reference 790101_ERA_FUL January 2025.

6.4.2.5 Bio-aerosols

A bioaerosols risk assessment has been undertaken for the Site and considers there not to be any significant risks concluding that the overall magnitude of the risk associated with bioaerosols emissions from the Site is considered to be 'low' to 'medium'. The Bio-aerosol Risk Assessment can be found in 790101_ERA_BioRA_FUL February 2024.

6.4.3 Control of fugitive emissions to surface water, sewer and groundwater

There are not considered to be any fugitive emissions to surface water, sewers or groundwater. According to the Operator's pollution incident register, in the past five years (2019-2023), one category 3 incident (minor incident) and one category 2 incident to water have been recorded. However, both pollution incidents have been confirmed as not substantiated or related to the STC.

There are no groundwater source protection zones (SPZ), but one groundwater abstraction point within 250m of the Site, located 194m southwest of the site operated by Liddell Enterprises Ltd.

All drainage water, including surface or foul water, is captured by the drainage network which returns all water to the head of the works for treatment.

There will be no direct discharge of wastewater to controlled waters from the STC.

There are no direct potentially contaminated discharges to groundwaters. Condensate from the flare, CHP and the biogas is captured in 4 No. condensate pots and is discharged to drainage and directed to the inlet works. The condensate is clean, uncontaminated and discharges are small in volume.

There is appropriate containment for the control of liquid raw materials and wastes put in place to minimise any potential releases, as identified in the EMS .The exception being with the secondary containment for sludge tanks, which will form part of the improvement plans for the Site.

Accidental releases of materials to the environment are controlled through adequate containment measures and working procedures.

The existing approaches and relevant procedures presented in the EMS and operational procedures are considered to adequately address the emissions that may present a risk, and therefore, an EMP is not considered to be required.

6.4.4 Control of fugitive emissions to land

Details of waste generated at the site is demonstrated in document reference 790101_MSD_ResidueMP_FUL January 2025.

6.5 Site security

Activities are managed and operated in accordance with the management system. Access to the site and waste is restricted by manually operated gates which are open during operating hours. The Site perimeter comprises three quarters 10ft chainlink fencing with barbed wire and one quarter 3 wired barbed wire fencing with trees. The site is manned during opening hours (7am – 5pm on weekdays, 7am – 1pm on Saturdays and 7am – 11am on Sundays), and staff are on call from Millbrook and Slowhill. The site only has CCTV monitoring the cess plant.

Regular inspections of the boundary fencing and buildings are undertaken to ensure that these have not been compromised and continue to prevent easy access to Site. Repairs are undertaken in accordance with the EMS requirements.

Other risks relating to human health and the environment are presented in Appendix B of the ERA in document reference 790101_ERA_FUL January 2025.

6.6 Complaints procedure

All complaints received relating to any aspect of the Site and its activities will be recorded and acted upon. Complaints, and actions taken, will be either recorded in the Site Diary or on a complaints record form. If a Site receives a complaint, this form should be completed and shown to the Environment Agency when they next inspect the Site. The forms will be used as evidence that any complaints received have been taken seriously and that actions have been taken to rectify any problems identified.

Complaints will be investigated promptly and any appropriate remedial action taken. The complainant and anyone else likely to have been affected, should be informed about what has been found and actions taken in a timely manner. The details of the complaint and the actions taken will be recorded in the Site Diary or log.

The aim will be to undertake measures to prevent complaints from being raised. However, where this is not possible, proactive measures will be taken to prevent further complaints from being made. For example, if a complaint is made with respect to dust, the Site Manager will arrange for dust suppression equipment to be used. The Site Manager will assess whether further control measures will be required to ensure that the risk of recurrence is minimised. The details of the complaint will be recorded in the Site Diary and the complaints register. If a complaint is received Southern Water will be informed as soon as is practicable and the complaints procedure will be followed. Confirmation will be recorded in the Site Diary or inspection log. The Site Manager will inform the Environment Agency of the complaint, if appropriate.

Any drivers who regularly cause a dust or mud and debris nuisance as a result of mismanagement of their vehicles will be discussed and advice will be sought from the Site Manager, if relevant.

If a complaint is made with respect to insects the Site Manager will investigate whether any of the activities at the Site could be the source of the nuisance.

If a complaint is made with respect to litter the Site Manager will arrange for litter pickers to clear up as appropriate and will assess whether further control measures will be required to ensure that the risk of recurrence is minimised. The details of the complaint will be recorded in the Site Diary and the complaints register.

Any complaints relating to fugitive emissions and the actions taken will also be recorded in the Site Diary and copies of the incident reports (including those provided to the Environment Agency) retained on-Site.

If a complaint is made with respect to vermin or an infestation is suspected, where normal treatment activities appear to be unsuccessful, the Site Manager will discuss and agree any further measures required with the pest control firm. The complaint reporting procedure will be followed as described below.

If a complaint is made with respect to noise or vibration the Site Manager will assess the cause of the complaint and will report the findings. If the noise or vibration leading to the complaint has been caused by a continuing operation, additional noise or vibration surveys may be required to confirm the degree of impact upon the receptor. The Site Manager will make any recommendations for further noise or vibration control to the Management Team and shall inform the Environment Agency of the complaint as soon as it is practicable to do so.

If a complaint is made with respect to odour, the Site Manager will investigate the source of the odour and take steps to reduce its impact. If the source appears to come from the Site, then appropriate actions to reduce the odour will be taken.

6.6.1 Complaints investigation procedure

In the event of any complaint, this section deals with the complaint assessment procedures. The primary role of this assessment will be to ascertain whether the complaint is associated with any Site operations and what action should be taken to prevent or minimise the probability of a recurrence.

It is important that any person acting on behalf of Southern Water is appropriately trained and that all steps and decisions are documented.

Step 1 – Complaint received

The Site operator or Environment Agency receives a complaint regarding the STC. Details logged within the Customer Services Management System (CSMS).

Step 2 – How to respond

Complainant is contacted to inform them the complaint has been received and request further information, where required.

The primary reasons for investigation of complaints are to identify the likely cause and source for the complaint and it is important to gather as much information about the complaint as possible. At the outset of any investigation, the Site Manager is to determine the priority for responding to the complaint.

If possible, someone from the Environment Agency will attend after a complaint has been made so that they can carry out an effective and subjective appraisal of the complaints and note any results into the CSMS.

Step 3 – Determine what to record and how

The complaint details and the investigation outcomes and actions taken are to be recorded in the CSMS. This information must be filled in on Site at the time of notification of the complaint.

Step 4 – Follow-up investigation

In order to resolve any problems successfully, it is essential to understand fully the source, reason and the operational conditions that led to the complaint. The first step in the investigation will be to select the most appropriate methodology for assessment. All the information collected should be filled in on the internal complaints form and a note made referencing this in the CSMS.

Step 5 – Communication with the complainant

The Site Manager or contractor tasked with addressing the complaint is responsible for collecting all the information and providing feedback to the complainant, or the Customer Contact Centre will contact the complainant. Wherever possible an explanation of the actions taken and the reasons for the decision should be made to the complainant.

If it is decided that there was no ground for the complaint this should be clearly explained to the complainant, along with information about what they should do if they are unhappy with the response.

Step 6 – Monthly complaints records

A full report of the complaints logged within the CSMS is produced to present to the relevant Technician to allow a review of potential trends.

6.7 Question 3c: Types and amounts of raw materials

Details of raw materials is demonstrated in document reference 790101_MSD_ResidueMP_FUL January 2025.

6.8 Question 4: Monitoring

This section provides a summary of the proposed monitoring at the Site.

6.8.1 Emissions to air

Stack emissions monitoring will be undertaken for each stack in accordance with M5 monitoring guidance, MCERTs BS EN 14792 and the requirements of the environmental permit issued for the Site, where suitable and available.

Periodic monitoring will be undertaken on an annual basis as part of the routine maintenance programme. No abatement technology is required, and continuous monitoring is not considered necessary. Sample monitoring will be carried out after each maintenance period on the CHP and boilers, in order to ensure compliance with ELVs as required in the Environmental Permit.

Once permitted monitoring will be undertaken in accordance with the relevant standards. It is anticipated the monitoring standards required are as follows:

Table 6.6: Monitoring of air emissions

Emission point type	Parameter	Reference period	Monitoring frequency	Monitoring standard or method
Stacks on engines Burning biogas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	periodic over minimum 1- hour period	Annual	In accordance with TGN M5 – Monitoring of stack emissions to air
	Carbon monoxide			
	Sulphur dioxide			
	Total volatile organic compounds including methane			
Boilers (dual fuel)	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	periodic over minimum 1- hour period	Annual	In accordance with TGN M5 – Monitoring of stack emissions to air
Channelled emissions to air (biofilter and scrubbing system)	Ammonia	periodic over minimum 1- hour period	Once every 6 months, or more frequent if stated in the permit	Emissions of pollutants into the environment through any kind of duct, pipe, stack, etc
	H_2S			
	Odour concentration		Once every 6 months, or more frequent if stated in the permit	BS EN 13725
Auxiliary flare	Operational hours	Recorded duration and frequency.	Continuous	Operational record including date, time and duration of use shall be recorded
Pressure relief valves	Biogas release and operational events	Recorded duration and frequency.	Daily inspection	Operational record including date, time duration of pressure relief events and calculated annual mass release

6.8.1.1 Assessment of the sampling locations

Version 13 of the Application Form C3 was made available on 7 December 2021, which includes a new question 4b point source emissions to air, that requires details of the design of the sampling locations. The application to vary the permit has been prepared to meet the deadline set by the Environment Agency, however, the gathering of information to respond to C3 4b was not feasible. Southern Water will respond to the list of queries in C3 4b as soon as practicable following the submission.

Where suitable and available, any monitoring, sampling and analysis of emissions to air or water will be undertaken in accordance with MCERTS, or equivalent agreed standards, by relevant and appropriately accredited contractors. An assessment of sampling locations is not appropriate as this will be the responsibility of the sub-contractors.

6.8.1.2 Sampling locations and BS EN 15259

The requirements of BS EN 15259 have been met, however, Southern Water does not believe the BS EN 15259 applies at the Site due to the diameter of circular ducts. Under the Environment Agency's Method Implementation Document for EN 15259:2007 circular ducts with diameters <1.13m are not required to meet BS EN 15259.

Summary responses to the questions answered no for Question 4 of Part C3:

Question	Response
Is access adjacent to the ports large enough to provide sufficient working area, support and clearance for a sample team to work safely with their equipment throughout the duration of the test?	No - if the ports are used, then clearance of 1.75m is required. Temporary or permanent platform required if so. The turbo port is an alternative option for sampling location.
Are the sample location(s) at least 5 HD from the stack exit?	Recommendation for small vertical circular stacks (<3.6m diameter) with sampling platform. Stack should be minimum of probe length + 1.5m
If horizontal, is the duct square or rectangular (unless it is less than or equal to 0.35 m in diameter)?	Not applicable, as ducts are circular

6.8.2 Emissions to water (other than sewers)

There are no direct releases to controlled waters of emissions arising from the STC. As such, no monitoring or reporting is required.

6.8.3 Emissions to sewers, effluent treatment plants or other transfers off-site

The release of liquors from the sludge treatment process is considered to be a point source emissions or direct discharges to sewers, as part of the permit operation. The site layout plan, drawing reference 790101_MSD_SiteLayoutPlan_FUL January 2025, identifies the point at which liquors leave the site to enter the WTW at the inlet. A sampling location has also been identified on the site layout plan, although sampling will be undertaken as part of a wider implementation plan under BAT and IED.

Southern Water confirm that they will undertake a chemical analysis of their wastewater, from the STC entering the adjacent WTW, which tests all pollutants they expect to find in the discharge to fully characterise the emissions to water. They propose a minimum of 12 sampling runs over a 12-month period (1 full sampling spec per month) initially to establish a baseline, in accordance with the surface water pollution risk assessment guidance or other applicable guidance such as MCERTS or ISO standards, where appropriate. Southern Water will then take an informed viewpoint of the determinants the samples contain demonstrating those that are not in the sample. An H1 assessment to screen out any that are not applicable or relevant will be completed. Sampling and analysis will be undertaken using a UKAS accredited, or equivalent, laboratory. This commitment falls within the Implementation Plan for meeting BAT and IED compliance. An implementation plan is shown in document reference 790101_MSD_ImplementationPlan December 2023. It is therefore, considered that this will be added as Improvement Conditions to the permit.

Condensate from the CHP exhaust discharges into four condensate pots, which are discharged directly to the drainage system of the adjacent Fullerton WTW and will undergo treatment through the works before being discharged under an existing environmental permit for discharge to water. This condensate is clean, uncontaminated water and occurs in small volumes. As such, no monitoring or reporting is required. There are no direct releases to public sewer or other transfers off-site of emissions arising from the STC.

6.8.4 Emissions to land

There are no direct releases to land of emissions arising from the STC. As required by the Southern Water EMS various housekeeping and waste management practices are in place to monitor waste emissions. These include segregation of wastes according to their classification and nature, labelling waste and using designated storage containers.

In accordance with the Southern Water EMS Policy solid waste is disposed of in accordance with 'Duty of Care' Regulations. The composition of the waste, its hazard characteristics and any relevant precautions are clearly stated on the transfer notes provided to licensed waste contractors removing waste from Site for recycling and/or disposal. Records are maintained on-site and reported to the regulator as required by the Permit.

6.9 Environmental impact assessment

The proposal is not subject to an environmental impact assessment under Council Directive 85/337/EEC of 27 June 1985 [Environmental Impact Assessment] (EIA).

6.10 Question 6: Resource efficiency and climate change

6.10.1 Basic energy requirements

Southern Water aims to maximise the efficiency of the energy flows from its processes ensuring that, where possible, heat is recovered, and energy is not wasted.

There are a number of pieces of infrastructure and equipment that use electrical energy supply including:

- Fans, coolers and heating
- Motors and motor drivers and drive systems
- Aeration
- Pumps/boosters/conveyors
- Facilities – heating and lighting
- Sludge handling and management e.g. AD, dewatering and polymer dosing equipment
- Ventilation and odour control/abatement systems

Biogas is used to provide energy, produced by burning in a CHP engine, for the Site's processes.

6.10.2 Question 6a: Basic measures for improving energy efficiency

Biogas is a renewable gas, produced from organic waste and is reused on-site to power its energy requirements. A key objective of the Southern Water EMS is to reduce energy consumption from the grid. Southern Water has a specific Energy and Carbon Manual which contains objectives for the energy consumption. Southern Water recognises that target setting for, and measurement of, energy and carbon reduction is pivotal to reducing energy use and carbon emissions in new and existing installations. Southern Water is currently in the process of better understanding economic levels of energy efficiency, renewable energy generation and carbon reduction (embodied and operational), which will help the company develop and set company and project level reduction targets.

Southern Water is dealing with the measurement and reporting of operational carbon emissions in existing installations through:

- Monitoring of energy use from electricity meters

- Quarterly estimation and reporting of operational carbon emissions for internal reporting purposes
- Annual estimation and reporting of operational carbon emissions for regulatory reporting (Ofwat and CRC)

Energy efficiency measures implemented at the Site include (but not limited to) the following:

- The combustion temperature is maintained relatively constant for reduced NOx emissions and increased efficiency
- The engines are equipped with turbochargers, further increasing energy efficiency
- Ongoing monitoring of plant operating parameters is carried out to ensure process is operating optimally and to enable constant optimisation to increase the plant's efficiency
- Good housekeeping measures are employed, and regular preventative maintenance will ensure the operations, and therefore energy efficiency is optimised
- Low cost measures in place to avoid inefficiencies of excessive heating or cooling include:
  - Insulation of main hot water pipes
  - Insulation of heating equipment such as hot water heat exchanger, boiler feed water tank and boiler feed water pumps and pipework
- Utilising low energy equipment for lighting such as:
  - High frequency fluorescent lighting, high pressure sodium or LED
  - Allowing for local or modular switching, where appropriate
- Consideration of energy recovery and the deployment of renewable energy systems, including:
  - Micro-hydro applications
  - Advanced sludge digestion
  - CHP
  - Use of solar panels and wind generation

Heat generated from the CHP is used in the AD process. The energy created by burning of biogas in the CHP engine is used to supply the Site to reduce the need to import electricity from the grid.

The development of an energy efficiency plan will be considered once the Site is permitted; this will determine areas of improvement and will be developed under Southern Water's Environmental Policy and EMS.

Southern Water carries out planned maintenance as a means to ensure operations are energy efficient. Overall, the energy use is relatively low, and the purpose of the installation is to produce energy by supplying biogas. No further measures are identified at this stage to improve upon energy efficiency. Nevertheless, Southern Water will regularly review energy use and disclose potential opportunities to reduce energy consumption from the four-yearly (or more frequent) energy reviews as required by a varied permit. In addition, Southern Water implements optimisation measures across all its sites in a proactive approach to ensuring efficiency measures across all its site operations meet optimal and efficient operating requirements.

6.10.3 Question 6b: Changes to the energy the permitted activities use up and create

There will not be any changes to the energy that the permitted activities use or create.

6.10.4 Question 6c: Climate change levy agreement

Southern Water is not a participant to the Climate Change Levy (CCL) agreement.

6.10.5 Question 6d: Raw and other materials, other substances and water use

Details of raw materials is demonstrated in document reference 790101_MSD_ResidueMP_FUL January 2025.

6.10.6 Question 6e: Reducing production of waste

Details of waste generation and reduction measures are demonstrated in document reference 790101_MSD_ResidueMP_FUL January 2025.

7 Part B6 – New bespoke water discharge activity or groundwater activity (point source discharge) or point source emission to water from an installation

The form responds to question listed in Table 1 of the B6 application form for the last listed option 'Effluent and/or contaminated surface water run‐off arising from the operation of an installation'.

Therefore, only the following questions have been responded to:

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Effluent and/or contaminated surface water run-off arising from the operation of an installation	No additional charge, as already included as part of the installation permit application charge	☑	a, b, d	c	b, c, d, f	--	a, b2	a, b, c	b, c, d, e, f, g	b, d, e, f	a, b, d, e, f, h, i	a, b, c

* Check the relevant question and our guidance notes on part B6 to see if you need to give an answer.

Note Question 6c is not within the application, despite being listed as being required by Table 1 of the application form.

7.1 Question 1 About the variation you are applying for

Effluent description: Return liquors from the STC process and condensate from the gas pipelines and gas storage bag.

Effluent name: STC return liquors.

7.2 Question 2 How long will you need to discharge for?

The discharge will not be time limited, will take place all year and continuously (e.g. for more than six days in any year)

7.3 Question 3 How much do you want to discharge?

Southern Water is not aware of the quantity of water sent to the inlet works from the STC because it is not currently monitored, therefore no details have been provided for Question 3. An implementation plan (document reference 790101_MSD_ImplementationPlan December 2023) has been developed as part of the accompanying IED permit application.

7.4 Question 5 Should your discharge be made to the foul sewer?

The discharge point (inlet works, W1 (document reference 790101_MSD_SiteLayoutPlan_FUL January 2025) is located within the operator's own wastewater treatment works, therefore, the distance to the nearest foul sewer is 0m and response to Question 5b2 is not applicable.

7.5 Question 6 How will the effluent be treated?

Effluent is not treated before reaching the inlet work because once leaving the inlet works the effluent will be treated through the Wastewater Treatment Works. The process description is

provided in Section 3. It is expected that Improvement Conditions in the IED permit will be provided and Southern Water will identify how it will monitor and characterise the liquors returning to the head of the adjacent Fullerton WTW.

7.6 Question 7 What will be in the effluent?

Southern Water is not aware of the composition of the effluent discharged to the inlet works from the STC (W1) because it is not currently monitored, therefore, no details have been provided for Question 7.

The temperature of effluent is not known but since the water is not direct from processes it is expected to be ambient.

An implementation plan has been developed as part of the accompanying IED permit application. It is expected that Improvement Conditions in the IED permit will be provided and Southern Water will identify how it will monitor and characterise the liquors returning to the head of the adjacent Fullerton WTW.

Where suitable and available, any monitoring, sampling and analysis of emissions to water is undertaken according to MCERTS, or equivalent standards, by MCERTs accredited contractors, as set out in Southern Water's commitment in Section 6.8.

7.7 Question 8 Environmental risk assessments and modelling

Discharges to freshwater (non - tidal) rivers

Southern Water is not aware of the composition of the effluent discharged to the inlet works from the STC (W1) because it is not currently monitored, therefore, screening cannot be undertaken at this time.

An implementation plan has been developed as part of the accompanying IED permit application. It is expected that Improvement Conditions in the IED permit will be provided and Southern Water will identify how it will monitor and characterise the liquors returning to the head of the adjacent Fullerton WTW.

Where suitable and available, any monitoring, sampling and analysis of emissions to water is undertaken according to MCERTS, or equivalent standards, by MCERTs accredited contractors, as set out in Southern Water's commitment in Section 6.8.

7.8 Question 9 Monitoring arrangements

Effluent monitoring will be in line with permit conditions. An implementation plan has been developed as part of the accompanying IED permit application. It is expected that Improvement Conditions in the IED permit will be provided and Southern Water will identify how, and the final locations of where, it will monitor and characterise the liquors returning to the head of the adjacent Fullerton WTW.

Where suitable and available, any monitoring, sampling and analysis of emissions to water is undertaken according to MCERTS, or equivalent standards, by MCERTs accredited contractors, as set out in Southern Water's commitment in Section 6.8.

7.9 Appendix 5 Discharges to non-tidal river, stream or canal

The final effluent discharge from the WTW is permitted under the permit reference A.804/H/07, from Outlet 1 within the River Test at National Grid Reference, SU 3816 3917. The permit authorises the discharge of secondary treated sewage effluent with nutrient removal and settled storm sewage.

Secondary treated sewage effluent with nutrient removal is monitored at point, SU 3666 4135.

8 Part F1 – Charges and declarations

8.1 Question 1: Working out charges

Table 1, Table 2 and Table 3 are completed on the Part F1 form.

8.2 Question 2: Payment

Payment will be made by BACS.

8.3 Question 4: Confidentiality and National Security

Southern Water do not wish to claim confidentiality with this application.

8.4 Question 6: Application checklist

Table 8.1 provides a list of section/document references included in the application.

Table 8.1: Part F, Question 6, Table 4: Application checklist

Question reference	Document title	Documents reference
Part A – Q5c Part A – Appendix 1 Part C2 – Appendix 2	Details of Directors	790101_MSD_Directors February 2024
Part C2 – Q3a Part C2 – Appendix 2	List of Relevant Offences	790101_MSD_RelevantOffences December 2023
Part C2 – Q3b	Competency Management System Agreement	790101_MSD_CMS December 2023
Part C2 – Q3d	Environmental Management System Certificate	790101_MSD_EMS December 2023
Part C2 – Q5a	Site Location Plan	790101_MSDS_SiteLayoutPlan_ FUL January 2025
	Site Layout Plan	
	Drainage Plan	790101_MSD_DrainagePlan_ FUL
Part C2 – Q5b	Site Condition Report	790101_MSD_SCR_ FUL January 2025
Part C2 – Q6	Environmental Risk Assessment	790101_MSD_ERA_ FUL January 2025 790101_MSD_Maps_ FUL February 2024
	Climate Change Risk Assessment	790101_ERA_CCRA_ FUL
Part B4 – Q1b Part C3 – Q1b Part C4 – Q1b	Waste Codes	Appendix A of 790101_MSD_Main_ FUL January 2025
	Annual throughput data	790101_AnnualThroughput_ FUL January 2025
	Waste Transfer Notes	790101_MSD_WasteTransferNotes_ FUL January 2025
Part C3 – Q3a Part C3 – Q3c Part C4 – Q3a	Schematics	790101_MSD_Schematics_ FUL January 2025
	BAT Analysis	790101_MSD_BAT_ FUL January 2025
	Implementation Plan	790101_MSD_Implementation Plan December 2023
	Leak detection and repair Plan	790101_MSD_LDAR_ FUL February 2024
	Residues Management Plan	790101_MSD_ResidueMP_ FUL January 2025
	Accident Management Plan	790101_MSD_AMP_ FUL February 2024
	Duty of care (waste acceptance)	790101_WasteAcceptance_ FUL January 2025
Part B4 – Q3b Part C3 – Q3b Part C4 – Q3b	Odour Management Plan	790101_ERA_OdourMP_ FUL January 2025
	Bioaerosol Risk Assessment	790101_ERA_BioRA_ FUL February 2024

Question reference	Document title	Documents reference
Part B4 – Q4a Part C4 – Q4a	Monitoring	790101_Sampling proposal_ FUL January 2025
Part C3 – Q3c, Table 5	Materials Safety Data Sheets	790101_MSD_MSDS_ FUL February 2024
Part B6	Main Supporting Document Implementation Plan Site Layout Plan	Section 7 – 790101_MSD_Main_ FUL January 2025 790101_PartB6_ FUL 790101_MSD_SiteLayoutPlan_ FUL January 2025 790101_MSD_ImplementationPlan December 2023
Part A – Q7 Paat B4 – Q1,2,3 Part C2 – Q2,3,5,6 Part C3 – Q1,2,3,4,6 Part C4 – Q1,2,3,4 Part F1 – Q1,2,6	Main Supporting Document	790101_MSD_Main_ FUL January 2025

A. Waste Codes

A.1 Wastes imported for Anaerobic Digestion

It is requested that the annual quantity of indigenous sludge and liquid sludge imports to be accepted is 206,794 wet tonnes.

EWC Code	Waste Description	Where accepted	Indigenous or imported	Justification for use
19 02	**wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**			
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)	AD pre-digestion	Raw cake-imported	
19 08	**wastes from waste water treatment plants not otherwise specified**			
19 08 05	sludges from treating urban waste water	AD pre-digestion	Indigenous/Imported	

A.2 Wastes received under the Controlled Waste Regulations 2012*

EWC Code	Description	Where accepted	Indigenous or imported	Justification for use
20 03	**Other municipal wastes**			
20 03 04	septic tank sludge	Head of works	Imported	
20 03 06	waste from sewage cleaning	Head of works	Imported	

*Southern Water acknowledge these waste codes will not be included in the permit

Wastes to import under a waste activity permit

It is requested that the annual quantity of digested cake imported for temporary storage is 60,000 tonnes.

It is requested that the annual quantity of grit and screenings and vactor waste imported for temporary storage is 2,000 tonnes.

EWC Code	Description	Where accepted	Indigenous or imported	Justification for use
16 10	**aqueous liquid wastes defined for off-site treatment**			
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01; sewage sludge liquor, cess and chemical toilet waste	Head of works	From adjacent STC processes	The waste for this code will be cess and chemical toilet waste, although already covered under permit EPR/SP3492HL

EWC Code	Description	Where accepted	Indigenous or imported	Justification for use
19 06	**wastes from anaerobic treatment of waste**			
19 06 06	digestate from anaerobic treatment of animal and vegetable waste - digested cake	Cake Bay post digestion	Indigenous/ Imported	Used for intersite transfers of post digested liquid sludge as per EMS480. Common example of this is if centrifuges are offline which necessitates exports of digested liquid. Definition is with reference to RPS231. https://www.gov.uk/government/publications/waste-codes-for-sewage-sludge-and-sludge-containing-other-materials-rps-231/waste-codes-for-sewage-sludge-and-sludge
19 08	**wastes from waste water treatment plants not otherwise specified**			
19 08 01	screenings	Grit and screenings	Indigenous/ Imported	19 08 01, 19 09 01 and 19 08 02 is included to allow for importing of grit and screenings and vactor wastes from sewer cleaning, it is received by skips or vacuum tanker on-site.
19 08 02	sewage waste (waste from desanding) only	Grit and screenings	Indigenous/ Imported	19 08 01, 19 09 01 and 19 08 02 is included to allow for importing of grit and screenings and vactor wastes from sewer cleaning, it is received by skips or vacuum tanker on-site. (Currently recorded under 19 08 01)
19 09	**wastes from the preparation of water intended for human consumption or water for industrial use**			
19 09 01	Solid waste from primary filtration and screenings	Grit and screenings	Indigenous/ Imported	19 08 01, 19 09 01 and 19 08 02 is included to allow for importing of grit and screenings and vactor wastes from sewer cleaning, it is received by skips or vacuum tanker on-site. (Currently recorded under 19 08 01)

A.3 Tankered waste imports under a waste activity permit

It is intended for there to continue to be 415,300 wet tonnes of tankered effluent waste imports as per permit EPR/SP3492HL. All waste codes below are imported, therefore none are indigenous.

EWC Code	Waste Description	Where accepted	Imported
16 10	**aqueous liquid wastes destined for off-site treatment**		
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01; Other sewage sludge; cess and chemical toilet waste and STC process liquors	Head of works	Imported
19 07	**landfill leachate**		
19 07 03	landfill leachate other than those mentioned in 19 07 02	Head of works	Imported
19 09	**wastes from the preparation of water intended for human consumption or water for industrial use**		
19 09 02	sludges from water clarification	Head of works	Imported

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