Wessex Water Services Ltd

Trowbridge Bioresources Centre

H1 Environmental Risk Assessment

June 2021

Revision	Date	Description	Author	Checked by	Reviewed by
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CONTENTS

Appendices

1 INTRODUCTION

This Environmental Risk Assessment (ERA) has been completed for Wessex Water Services Limited (WW) for the site at Trowbridge Bioresources Centre (BC), Bradford Road, Trowbridge, Wiltshire, BA14 9BJ (the Site). This ERA has been completed in accordance with prevailing Environment Agency (EA) technical guidance (Environment Agency, 2020). It is noted that this guidance replaces previous EA H1 Guidance (Environment Agency, 2011), however, the H1 methodology is considered to remain appropriate.

Environmental Risk Assessments have been completed for:

- Emissions / discharges to water (surface water, groundwater and site drainage); [Table 3.1]
- Environmental accidents and incidents; [Table 3.2]
- Odour; [Table 3.3]
- Noise and vibration; [Table 3.4]
- Fugitive emissions (including dust, mud, litter, pests and pollutants) [Table 3.5)].

Environmental Risk Assessments are focused on the proposed biological treatment activities, as illustrated in Figure 1. The activities to which this Environmental Risk Assessment and the Environmental Permit application relate, are included in purple. Environmental risk is estimated using the 'risk matrix' provided in Section 2.

EA guidance for Bioaerosol monitoring at regulated facilities (Environment Agency, 2018) requires that bioaerosols are monitored if a biological waste treatment facility is located within 250 m of a sensitive receptor (a place where people live or work) for more than 6 hours at a time. Residential dwellings within the residential town of Trowbridge are located approximately 160 m east of the Site. Monitoring will therefore be carried out on the Site to ensure that bioaerosol emissions are at an acceptable level. At this stage, a qualitative bioaerosol risk assessment has been completed for the site and is provided as Appendix 1.

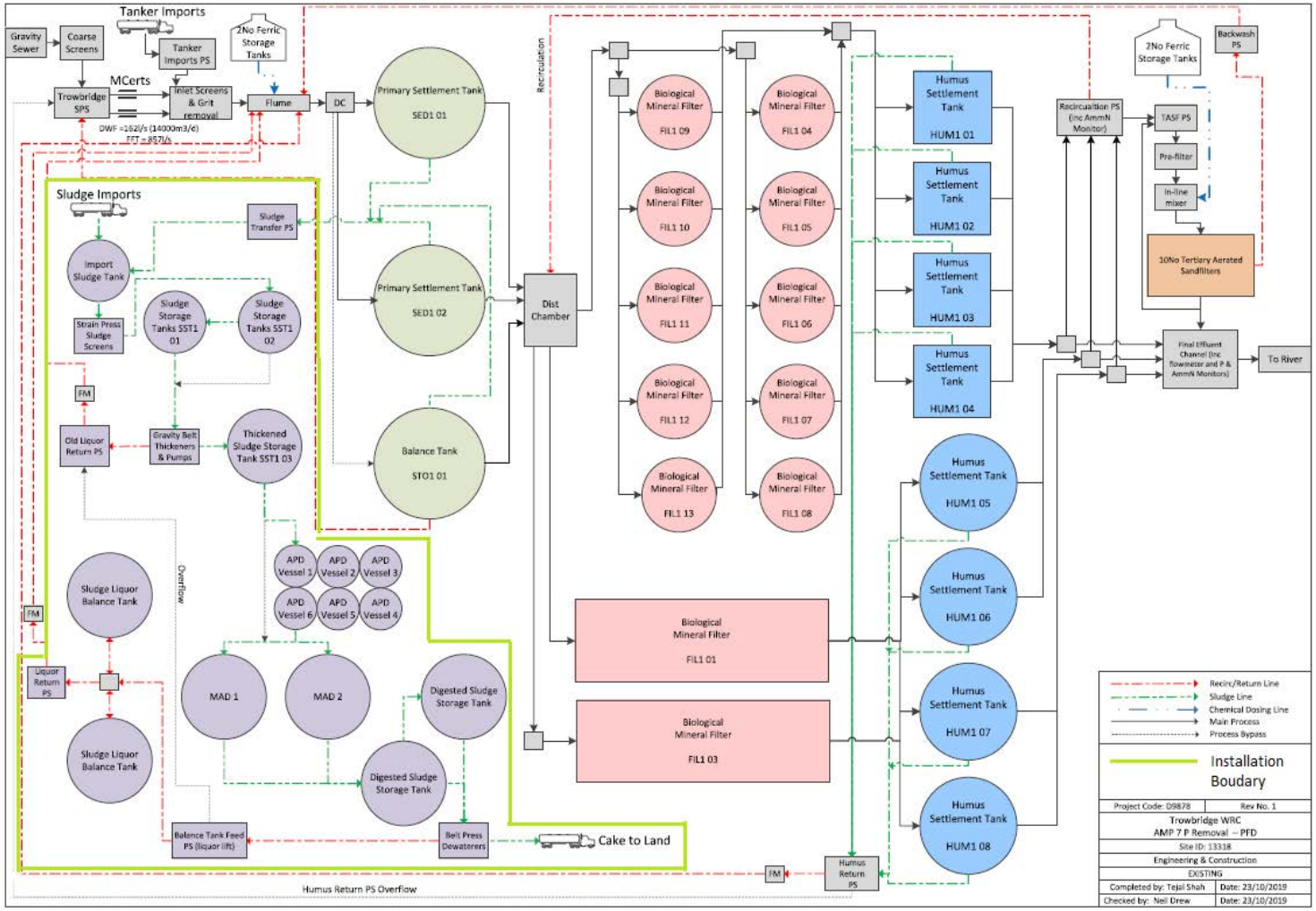
This ERA does not include specific reference to the training of staff, as this aspect of mitigation stretches across all aspects of risk management for the Site. WW staff are provided with training which is specific to their role and only suitably trained staff are involved in the biological treatment activities. WW have a training matrix which provides a record of staff training and prompts for refresher training, as required. WW have a Technically Competent Manager who will oversee the biological treatment activities.

This ERA does not include reference to risks associated with flooding. This is due to the Site not being located within a Flood Zone[1].

Given the planned changes associated with this EP application for a substantial variation to the existing EP (EPR/BB3934AG), this ERA concludes that, accounting for the implementation of the mitigation measures, it is not considered that the proposed activities will have a significant impact on the environment.

[1] Site not located within a Flood Zone, reference Flood Map for Planning, 2021 (https://flood-map-for-planning.service.gov.uk)

Figure 1 Waste Activities – Process Flow Diagram



Note – The Process Flow Diagram shows activities carried out within the installation boundary (green line) and activities within the wider site. Biogas assets and activities are excluded.

2 METHOD OF RISK ESTIMATION

Table 2.1 below has been used to demonstrate an estimation of risk from activities to be carried out within the proposed installation boundary. The estimation of risk is based on the magnitude of consequences from hazards associated with the activities carried out at the Site and the probabilities of these hazards occurring.

Table 2.1 Estimation of Risk

Risk →	*Consequences*			
	Severe	**Moderate**	**Mild**	**Negligible**
Probability				
High	High	High	Medium/low	Near Zero
Medium	High	Medium	Low	Near Zero
Low	High/medium	Medium/low	Low	Near Zero
Negligible	High/medium/low	Medium/low	Low	Near Zero

Although the above table is a simplification that cannot represent the true complexity of assessing risk on the Site, it has been used as a guide in preparing the Environmental Risk Assessment included in the subsequent sections of this report.

3 ENVIRONMENTAL RISK ASSESSMENT

Table 3.1 Emissions to Water (Surface Water, Groundwater and Sewage)

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Contaminants from the biological treatment operations reaching surface water features	Surface water features (closest being River Biss located approximately 100m east of the Site, Kennet & Avon Canal and River Avon both located approximately 600m north of the Site, local flora and fauna.	Infiltration and surface water run-off	WW have an Environmental Management Plan, which has been prepared in accordance with prevailing EA Guidance (how to develop a management system: environmental permits). A copy of the Environmental Accident Management Plan is provided as part of this Environmental Permit application and prevalent points included below. A robust risk assessment process (EQRA) is provided as Appendix 6 of this application. The EQRA is based on the source-pathway-receptor model as prescribed by CIRIA C736, and in accordance with sector guidance. The EQRA allows for a determination of BAT or BAT equivalent measures for the containment of fugitive emissions to ground/groundwater. The nearest surface water feature is the River Biss, which is located approximately 100 m east of the Site. The Site is not located within a Groundwater Protection Zone; the nearest is over 2 km to the north east of the Site. The surfacing on the Site is impermeable surfacing with sealed drainage. The site is laid to falls, with water draining towards gullies/inlets. Kerbing and containment infrastructure are present to prevent infiltration and surface water run-off. Water from the biological treatment operations that enters drains is directed to the head of works at the	Negligible	Mild	Low
Contaminants from the biological treatment operations reaching groundwater	Surface water features (ultimately reaching groundwater) and groundwater.			Negligible	Mild	Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
			Water Recycling Centre (WRC). In this way, the drainage infrastructure acts as a 'closed loop' system.			
Uncontrolled emissions to sewer from biological treatment operations	Sewer	Drainage of final effluent to discharge point and foul sewer	Discharges (2 No.) are controlled by conditions of the existing wastewater discharge EP No. 102153. Discharges are monitored in accordance with this EP. As above, surface water management infrastructure is a 'closed loop' system.	Negligible	Medium/Low	Low

Table 3.2 Environmental Accidents and Incidents

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Leaks and spills from plant/equipment, hazardous liquid containment facilities (e.g. polymer and fuel), tanks and pipework	Nearby land uses, surface water features (closest being River Biss located approximately 100m east of the Site), local flora and fauna.	Surface water run-off, infiltration.	As above, surface water management infrastructure is a 'closed loop' system. Any leaks and spills would ultimately reach the head of works at the WRC. All plant and equipment on the Site are fitted with process monitoring equipment, which will continuously monitor the process to detect any faults which could lead to an incident. This system will raise an alarm if a fault has, or is likely to, occur. As an example, an alarm will activate if levels within a tank exceed a trigger limit in order to minimise the risk of overfilling. Alarms notify key staff who will act to resolve the issue. All plant and equipment on the Site are checked and maintained as part of a maintenance regime. Checking for leaks is a specific item within the operational regime. This will act to reduce the likelihood of any loss of containment or leaks, alongside various control measures. Hazardous liquids e.g. polymer and fuel are stored appropriately in bunded tanks/containers. Provision of spill kits and incident response equipment to clean up leaks / spills. Supervision of all fuel deliveries. Fuel delivery will take place in a designated area.	Low	Negligible	Near Zero

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Failure of plant / equipment e.g. from blockages, pressure, faulty pipework, valves, pumps etc. which could cause accidents / incidents e.g. injury, fire etc.	Staff on site (direct harm) and nearby solar farm located approximately 50 m north west of the Site, commercial uses (closest being 3pm model maker located approximately 500m north east of the Site) and the residential town of Trowbridge, with the closest dwelling being located approximately 185 m south east of the Site.	Direct – harm/injury, spread of fire. Air (air quality impact)	WW have an Environmental Management Plan, which has been prepared in accordance with prevailing EA Guidance (how to develop a management system: environmental permits). A copy of the Environmental Accident Management Plan is provided as part of this Environmental Permit application and prevalent points included below. All plant and equipment on the Site are fitted with process monitoring equipment, which will continuously monitor the process to detect any faults. This system will raise an alarm if a fault has, or is likely to, occur. As an example, an alarm will activate if pressure is low or the temperature of the pump exceed a pre-set limit. Alarms notify key staff who will act to resolve the issue. All plant and equipment on the site are checked and maintained as part of a maintenance regime. Alarms will trigger as part of a continuous monitoring system for all plant, which will ensure prompt response to faults. Actions will be taken to fix plant / equipment in the event of a failure / breakdown to address the incident as quick as possible. In some instances, a failure could have severe consequences i.e. a failure involving infrastructure managing biogas. An automated stop on assets will be initiated in the event that excess heat, low pressure or electricity anomalies are identified. Management may also make the decision to stop operations by utilising manual stops on	Low	Moderate	Medium/Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
			assets. This decision will be largely based on if the plant is integral to the operation and likely to pose a wider concern to the Site and/or the environment.			
Fire e.g. from a fault in plant / equipment or from arson	Staff on site (direct harm) and nearby solar farm located approximately 50 m north west of the Site, commercial uses (closest being 3pm model maker located approximately 500m north east of the Site) and the residential town of Trowbridge, with the closest dwelling being located approximately 185 m south east of the Site. Local amenity and flora/fauna e.g. agricultural land, River Biss and Wildbrook Wood.	Direct – spread of fire. Air (air quality impact)	WW have an Environmental Management Plan, which has been prepared in accordance with prevailing EA Guidance (how to develop a management system: environmental permits). A copy of the Environmental Accident Management Plan is provided as part of this Environmental Permit application and prevalent points included below. Waste accepted and treated on the Site is sludge and the resulting 'cake' and solids e.g. 'rags', which are not combustible in nature (as defined by EA Guidance for Fire Prevention). The majority of waste will have a high liquid content exceeding 95% by weight. Wessex Water have an 'Environmental Guidance - Fire Emergencies (Ref. ENVG008)' document which outlines their approach to dealing with fires on the site, which includes actions to be taken in the event of a fire and directions for managing contaminated fire water. A copy of the 'Environmental Guidance - Fire Emergencies' document is included as Appendix 2. Water is immediately available on the site for use by the emergency services to tackle a fire.	Low	Moderate	Medium/Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
			Biological treatment activities produce biogas which is flammable and if not properly managed could cause a fire or explosion. This biogas is managed by both WWSL and WWEL, as the proposed EP will be a multi-operator EP. Equipment involved in the management of biogas is checked and maintained as part of a maintenance regime.			
Flooding from blocked drains, burst pipes, and handling fire water (water used during firefighting)	Nearby land uses, surface water features (closest being River Biss located approximately 100m east of the Site), agricultural land and residential town of Trowbridge (closest dwelling located approximately 185 m south east of the Site)	Overwhelmed drainage system and resulting surface water-runoff.	WW have an Environmental Management Plan, which has been prepared in accordance with prevailing EA Guidance (how to develop a management system: environmental permits). A copy of the Environmental Accident Management Plan is provided as part of this Environmental Permit application and prevalent points included below. Drainage system unlikely to be overwhelmed, as it is directly linked to the WRC. Drains and drainage infrastructure are visually inspected on a daily basis to ensure they are operational e.g. no blockages. Kerbing and containment infrastructure is present on the site to prevent surface water run-off.	Negligible	Moderate	Medium/Low
Failure of services e.g. water, gas, electricity which could result in the failure of plant e.g. from overheating, which in turn could cause a fire	Staff on site (direct harm) and nearby solar farm located approximately 50 m north west of the Site, commercial uses (closest being 3pm model maker	Direct – spread of fire. Air (air quality impact)	WW have an Environmental Management Plan, which has been prepared in accordance with prevailing EA Guidance (how to develop a management system: environmental permits). A copy of the Environmental Accident Management Plan is provided as part of this Environmental Permit application and prevalent points included below.	Negligible	Moderate	Medium/Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
	located approximately 500m north east of the Site) and the residential town of Trowbridge, with the closest dwelling being located approximately 185 m south east of the Site. Local amenity and flora/fauna e.g. agricultural land, River Biss and Wildbrook Wood.		Risk management identified in above rows, specifically in relation to 'failure of plant' and 'fire'. Backup generators (on site and mobile) are available to ensure operations can carry on in the event of a failure in electricity. The telemetry system will inform WW staff in the event of a failure. Little water is used in the operations, with water being circulated on the site. It is therefore not anticipated that a temporary failure in water would have a significant impact. Nonetheless, if water was not available then activities would stop if necessary. Plant and equipment are fitted with process monitoring equipment. An alarm would be activated, and staff notified if plant/equipment failed e.g. pumps were overheating. Furthermore, the current of incoming water is monitored, which is regularly checked by members of the WW Water Team. Water levels are monitored and managed on a continuous basis. Boilers located on the Site will use biogas and can use natural gas if required. The boilers are not solely reliant on natural gas and would likely continue operation in the event of a gas failure. A diesel generator is available in the event of a power failure.			
Unauthorised entry and damage to plant and equipment e.g. from vandalism	Staff on site (direct harm) and nearby solar farm located approximately 50 m	Direct – harm/injury, spread of fire. Air (air quality impact)	WW have an Environmental Management Plan, which has been prepared in accordance with prevailing EA Guidance (how to develop a management system: environmental permits).	Low	Moderate	Medium/Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
	north west of the Site, commercial uses (closest being 3pm model maker located approximately 500m north east of the Site) and the residential town of Trowbridge, with the closest dwelling being located approximately 185 m south east of the Site. Local amenity and flora/fauna e.g. agricultural land, River Biss and Wildbrook Wood.		A copy of the Environmental Accident Management Plan is provided as part of this Environmental Permit application and prevalent points included below. Unauthorised entry could result in arson, see entry for 'fire' above. Unauthorised entry could result in tampering / vandalism of plant and equipment, see 'failure of plant' above. In addition, WW have a number of site security measures. Perimeter fence surrounds the Site, which is inspected on a weekly basis. There is a card entry barrier at the main entrance. CCTV is available near the tankered waste drop off point and is remotely viewable, with the Site Manager and other operational staff being able to view. The Regional Operations Centre (ROC) can also monitor remotely outside of working hours.			

Table 3.3 Odour

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Odour from Biological Treatment activities	Staff on site (direct harm), commercial uses (closest being 3pm model maker located approximately 500m north east of the Site). Residential town of Trowbridge, with the closest dwelling being located approximately 185 m south east of the Site. Residential area of Trowle Common located approximately 350m south west of the Site. Local amenity and flora/fauna e.g. agricultural land, River Biss and Wildbrook Wood.	Air (Atmospheric Migration)	An Odour Management Plan (OMP) is available for the Site, which includes mitigation measures adopted by WW to minimise odour. This OMP requires that all plant on Site limits the risk of causing an odour nuisance. All new plant installed on the site is designed and operated to minimise the risk of causing odour nuisance. The OMP includes key contacts and responsible parties in relation to odour control. The Odour MP is regularly reviewed to ensure mitigation measures remain appropriate and that actions are taken as a result of any complaints are considered to improve mitigation measures. Odour complaints received for the Site to date have been relating to the liming operations. These operations have not taken place for a number of years. Therefore, no odour complaints have been received for other operations which are currently taking place on the Site. Biological treatment operations e.g. sludge screen, reception tanks, strain presses, digestors, thickeners and dewatering assets, are carried out within a building and/or containers/covered tanks. Any potential odour from belt presses (and skips), sludge thickening and dewatering activities is extracted and vented to atmosphere. All plant and equipment are fitted with process	Low	Moderate May present more risk of nuisance in the summer months.	Medium/Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
			monitoring equipment. This equipment monitors the performance of assets and will continuously monitor these performance metrics. An alarm is activated in the event that any plant / equipment is not functioning as expected. Actions will be taken to rectify the issue. This will act to reduce the likelihood of odour generation. A maintenance regime is followed for plant and equipment present on the site. Plant will be checked regularly to ensure they are in good working order. This will act to reduce the likelihood of breakdown, which could result in odour emissions. The WW website contains an area where the public can lodge a complaint and a site sign is present on site with contact details. Odour complaints will be recorded, and actions taken to resolve these complaints. Management will review these actions and amend the OMP and company procedures as appropriate to reduce the risk of future odour emissions.			
Odour from general site activities associated with the biological treatment activities.			Good housekeeping is enforced on the Site to minimise the likelihood of odour emissions leaving the Site boundary. Housekeeping will include keeping doors to buildings closed, sealing covers, cleaning Site surfacing and dealing with spillages.			

Table 3.4 Noise and Vibration

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Noise and vibrations from biological treatment operations, notably: • Imported sludge screen • Pumps • Gravity belt thickeners • Dewatering units (belt presses) • Digester Boiler • Generator Boilers / CHP	Staff on site (direct harm), commercial uses (closest being 3pm model maker located approximately 500m north east of the Site). Residential town of Trowbridge, with the closest dwelling being located approximately 185 m south east of the Site. Residential town of Trowle Common located approximately 350m south west of the Site. Local amenity and flora/fauna e.g. agricultural land, River Biss and Wildbrook Wood.	Air (Atmospheric Migration)	WW have a company-wide Noise Management Plan (NMP). The purpose of the NMP is to ensure that impacts associated with noise and vibration are dealt with appropriately during the design, construction, maintenance and operation of WW assets. The NMP requires that WW conduct a noise survey to assess the impact of any new assets, during installation and commissioning, to determine whether a proposed development is at risk from creating noise nuisance. A Noise & Vibration Risk Assessment has been prepared as part of this Environmental Permit application. Points below draw upon information from this assessment. All plant and equipment on the Site are fitted with process monitoring equipment, which will continuously monitor the process to detect any faults which could lead to excess noise. This system will raise an alarm if a fault has, or is likely to, occur. Plant which has the potential to generate significant noise (listed in 'hazards' column) are contained within acoustic enclosures and/or are located within buildings. The doors to buildings containing assets that produce significant noise will be closed when plant is operational and have appropriate signage. All plant and equipment on the Site are checked	Medium	Mild	Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
			and maintained as part of a maintenance regime. This will act to reduce the likelihood of any fault / malfunction. The integrity of Site infrastructure, including acoustic enclosures and doors to buildings are checked to ensure the risk of noise leaving the boundary of the Site is being sufficiently minimised. No recent noise complaints have been received for the Site.			
Noise and vibrations caused by vehicle movements within the Site			A Noise & Vibration Risk Assessment has been prepared as part of this Environmental Permit application. Points below draw upon information from this assessment. Deliveries would take place during the daytime hours only when background sound levels are higher. No recent noise complaints have been received for the Site.	Medium	Negligible	Near Zero

Table 3.5 Fugitive Emissions (including dust, mud, litter, pests and pollutants)

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Dust emissions from biological treatment activities leaving the Site boundary.	Staff on site (direct harm) and nearby solar farm located approximately 50 m north west of the Site, commercial uses (closest being 3pm model maker located approximately 500m north east of the Site). Residential town of Trowbridge, with the closest dwelling being located approximately 185 m south east of the Site. Residential town of Trowle Common located approximately 350m south west of the Site. Local amenity and flora/fauna e.g. agricultural land, River Biss and Wildbrook Wood.	Air (Atmospheric Migration)	Waste stored and treated on the Site is sludge waste and the resulting 'cake' and solids e.g. 'rags'. Due to its nature, this waste is not likely to generate significant dust emissions. Polymer used in the thickening and dewatering activities has the potential to generate dust. Polymer is used within a building and container, which will prevent dust emissions leaving the Site boundary. The Site is subject to regular visual inspections and a regular cleaning regime. This will ensure that mud/residues on the Site surfacing is managed.	Negligible	Mild	Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Mud / residues reaching the public highway	Nearby public highway and roads within the residential town of Trowle Common.	Tracking of mud on wheels / undercarriage of vehicles.	As above. Waste stored and treated on the Site is not likely to generate mud/residues. Waste storage and treatment activities are largely contained, either within a building and/or containment e.g. tanks and skips.	Negligible	Negligible	Near Zero
Litter leaving the Site boundary		Air (windblown)	Waste stored and treated on the Site is unlikely to contain significant quantities of litter. Any solids within the waste are unlikely to become windblown, which could cause litter on the Site. There are skips located around the Site which contain general waste and screenings from different parts of the WRC wastewater treatment process. There is a low risk of litter associated with these skips. Fencing around the perimeter of the Site will act to prevent windblown litter crossing the Site boundary.	Negligible	Mild	Low
Pests and vermin infestation causing an amenity impact and potential damage to plant / equipment and infrastructure on Site.	Amenity impact – staff on site and nearby residential dwellings within the residential towns of Trowbridge and Trowle Common. Nearest residential dwelling is located approximately 185 m south east of the Site in Trowbridge.	Air transport and over land	The Site has a Pest Management Plan which WW follow to ensure that pests and vermin are controlled and managed on the Site. WW will conduct regular visual inspections to monitor potential pest/vermin infestations and will employ specialist contractors to manage pest/vermin infestations.	Low	Mild	Low
Storage of liquids (hazardous or potential to	Surface water features (closest	Infiltration and surface water run-off	The closest surface water feature is the River Biss, which is located approximately 100 m east	Negligible	Mild	Low

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
cause pollution) e.g. polymer, fuel	being River Biss located approximately 100m east of the Site, Kennet & Avon Canal and River Avon both located approximately 600m north of the Site, local flora and fauna.		of the Site. The Site is not located within a Groundwater Protection Zone. The surfacing on the Site is impermeable surfacing with drainage. The site is laid to falls, with water draining towards gullies/inlets. Kerbing and containment infrastructure is present to prevent infiltration and surface water run-off. Water from the biological treatment operations that enters drains is directed to the head of works at the WRC. In this way, the drainage infrastructure acts as a 'closed loop'.			

4 REFERENCES

Environment Agency. (2011). *Horizontal Guidance Note H1: Overview Document. H1 Annex A - Amenity & accident risk from installations and waste activities*.

Environment Agency. (2020, December). *Risk assessments for your environmental permit*. Retrieved from https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit

Appendix 1

Bioaerosol Risk Assessment

Qualitative Bioaerosol Risk Assessment – Trowbridge Bioresources Centre

This Qualitative Bioaerosol Risk Assessment is in support of the Environmental Permit Application for a substantial variation at the Wessex Water Services Ltd (WW) Trowbridge BC.

The purpose of this Qualitative Bioaerosol Risk Assessment is to document potential bioaerosol emission sources and identify measures to minimise their release. The Trowbridge BC is within 250 metres of a sensitive receptor (a place where people live or work for more than 6 hours at a time) and therefore WW propose to meet the requirements the Environment Agency's Guidance: *M9 environmental monitoring of bioaerosols at regulated facilities* as required in a permit for the Trowbridge Bioresources Centre:

- monitor bioaerosols using M9: environmental monitoring of bioaerosols at regulated facilities
- do a site specific bioaerosol risk assessment

It is understood that permits issued after 1 April 2017 must meet these requirements from the date on the permit.

Table 1 provides a Qualitative Bioaerosol Risk Assessment for each sludge asset within Trowbridge BC.

Table 1 Qualitative Bioaerosol Risk Assessment

What do you do that can harm and what could be harmed			**Managing the risk**	**Assessing the risk**		
Asset	**Receptor within 250m of Trowbridge Bioresources Centre[1]**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Post Digested Tanks 1 & 2	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Open top/above ground	Medium	Inhalation risk - Low	Medium
Acid Phase Digesters 1 - 6	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	All roofed	Low	Inhalation risk - Low	Low
Mesophilic Digesters 1 & 2	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	All roofed	Low	Inhalation risk - Low	Low
Post Thickened Tank	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Roofed tank	Low	Inhalation risk - Low	Low
Strained Transfer Tank	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Roofed tank	Low	Inhalation risk - Low	Low
Pre-thickened Tank	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Roofed tank	Low	Inhalation risk - Low	Low
Gravity Belt Thickeners 1 & 2	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Covered assets	Medium	Inhalation risk - Medium	Medium

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Asset	**Receptor within 250m of Trowbridge Bioresources Centre[1]**	**Pathway**	**Risk Management**	**Probability of exposure**	**Consequence**	**What is the overall risk?**
Strain Presses 1&2	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Auger system – on platform; spill response and clean-up procedures.	Medium	Inhalation risk - Low	Medium
Sludge Reception Tank	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Roofed tank	Low	Inhalation risk - Low	Low
Dewatering Building (x2 Belt Presses) with 2 extraction stacks	Employees working inside building. N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Spill response and clean-up procedures. PPE.	Medium-high	Inhalation risk - Medium	Medium
Cake Skips	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Removal from site promptly. Low aerosol risk due to high dry solid content of approx. 25%.	Low	Inhalation risk - Low	Low
Return Liquor Balance Tanks 1 & 2	N - Solar farm E - Residential S - Agricultural W - Agricultural	air	Roofed tank	low	Inhalation risk - Low	Low

[1] N – North; S – South; E – East; W - West

Appendix 2

Fire Emergencies Guidance Note

Environmental Guidance – Fire Emergencies

Purpose

This guidance note indicates details of how to minimise environmental impacts associated with fire emergencies affecting Wessex Water assets.

Guidance

Sites storing combustible material may require a Fire Prevention Plan as part of the Environmental Permit Management System. Refer to site specific Fire Prevention Plans where available.

On discovery of a fire affecting a Wessex Water asset, members of staff should immediately contact the Fire and Rescue Service and evacuate the workplace – see HSA25, Fire Safety.

The Fire and Rescue Service will be responsible for all actions to contain and control the fire and take appropriate steps to prevent pollution (as outlined in the Environment Agency's National Memorandum of Understanding with the Fire and Rescue Service[1]).

Wessex Water staff should identify any particular areas of concern where pollution may affect treatment infrastructure, particularly where this may affect drinking water quality and make the Fire and Rescue Service aware.

In the event of contaminated fire water being present on site, whilst the Fire and Rescue Service are primarily responsible for dealing with such water during the emergency, it may be necessary (where safe to do so) to:

- Divert contaminated water to storm tanks or storm storage (if available).
- Divert contaminated water to the foul sewer. Before discharging to the foul sewer, the Control Room must be advised so that the relevant Sewerage and Treatment Managers can be contacted to assess the impact on the receiving sewer. Do not discharge to the foul sewer without consent from relevant Operations Sewerage and Treatment manager. Evacuation of staff from the affected site (especially contractors) is also important. Further information is available in TRTWG111, Wastewater operational guide unauthorised discharges affecting STWs and NTKWG004 Guidance on spillage or discharge into sewer.
- Divert contaminated water to spill containment tanks (if available).
- If possible, block access of contaminated water to surface water drainage systems to prevent loss of fire water from site or divert surface water drainage so that fire water does not enter the environment. This can be

[1] http://www.cfoa.org.uk/11488

done by using drain seals, temporary sandbags, soil or sand bunds or absorbent booms in spill kits.
- Consider whether diversion of water to hard standing areas such as car parks is possible (use sandbags, soil or sand to form temporary bunds). Avoid diverting fire water to bare ground to ensure it is not allowed to soak away.

Waste Management

Waste is likely to be generated at incidents where pollution control measures have been employed. Waste types could include:
- Polluted fire water
- soiled materials (including clothing)
- used absorbents
- damaged containers
- contaminated equipment

This waste may be classified as hazardous and should be stored appropriately to prevent further pollution (for example, in a covered skip or on hardstanding with controlled drainage). All waste must be properly classified to determine if it is considered hazardous and disposed of correctly. If unsure of how to dispose of this, contact either the Waste Advisor or environmental team (or see guidance on Source Intranet).

If soil has become contaminated with pollutants, testing will be required to determine the appropriate disposal route or alternative mitigation. Water contaminated by hydrocarbons could be treated using oil/water separators.

Sites with Environmental Permits may have specific Fire Prevention Plans for fire emergencies and fire water as part of an accident management plan.

Where buildings or structures are affected by fire, potential asbestos contamination should be considered. Check the site Asbestos Management Plan to determine whether/where asbestos is present – a hard copy will be on site or available through the Site Information File.

Revision history

Issue	Date	Description	Prepared by	Approved by
1	September 2010	First issue	D Jones	Adrian Stoodley
2	December 2017	Updated with Fire Prevention Plan requirements and minor amendments	Dave Jones	Adrian Stoodley