



# Whitby Waste water Treatment Works

Environmental Permit Application

EPR/LB3308CC/A001 | 2

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Yorkshire Water

WwTW Permitting



## Whitby Waste water Treatment Works

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### Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
0	June 2021	Draft	KA/RS	KA	MKM	MKM
1	July 2022	Revision by Yorkshire Water to remove storage references	KJ	AB		
2	January 2023	Yorkshire Water updates in response to request for further information	KJ	AB		

**Contents**

1. **Non-Technical Summary** ..... 1

2. **Process Description** ..... 2

3. **Supporting Information** ..... 3

Form B2 Additional Information ..... 3

Geology and Aquifers ..... 6

Surface Water ..... 6

The Surrounding Area..... 6

Site History ..... 7

Flooding ..... 7

Climate change risk screening..... 9

3.1 Form B4 Additional Information..... 12

**Appendix A. Current Waste Pre-acceptance and Acceptance Procedures**

**Appendix B. Site Condition Report**

## 1. Non-Technical Summary

Yorkshire Water Ltd are applying for a bespoke waste Environmental Permit at Whitby Wastewater Treatment Works (WwTW) which relates to the acceptance of liquid waste and discharge of effluent into the main works.

Liquid wastes are delivered to the site by road tanker from a number of sources for treatment within the WwTW. These effluents are discharged directly into the 'head of the works'. Effluents are discharged to the 'head of the works' they are mixed within the incoming sewer delivered urban wastewater directive (UWWTD) main flow. Once the liquid effluent enters the main works system it is classified as urban wastewater and is therefore, no longer considered waste under the Waste Framework Directive 2008/98/EC. This permit is limited to the acceptance of waste.

It is proposed that the maximum quantity of the above mentioned tankered waste accepted at Whitby WwTW is an annual allowance of 500,000 tonnes. Due to the nature of the site, the works is operational 24-7. However, the majority of imports will be received between 0600-1900.

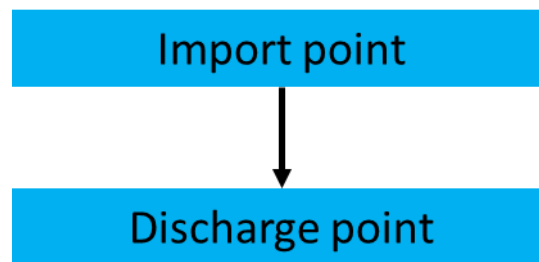


Figure 1 - Whitby WwTW Tankered Imports Process Flow Diagram

## 2. Process Description

YW are applying for a bespoke waste Environmental Permit for Whitby WwTW which relates to the acceptance of tankered waste prior to discharge into the main WwTW. The scope of this application covers the delivery to site and offloading of effluents by road tanker for treatment at the WwTW in a mixture with UWWTD materials.

Liquid wastes are transported to Whitby WwTW by road in sealed tankers. On delivery, effluents are discharged from the tanker, using sealed coupling hoses via a dedicated tanker offloading point, directly into the 'head of the works' for full treatment. Effluents discharged to the 'head of the works' are mixed within the incoming sewer delivered urban wastewater directive (UWWTD) main flow, prior to full treatment. The offloading process takes 15 minutes to complete. There is rapid mixing (0-2 minutes) with the incoming flow at the inlet.

The tanker import point is located on an impermeable surface to minimise the impact of any spillages on the wider environment. Any spillages will be washed into the nearest site drain which joins the inlet flow.

The tanker offloading point is fixed and equipped with an appropriate tanker coupling hose to reduce the risk of poor tanker connection. The tanker offloading points are also equipped with key fob-controlled data loggers, which measure the volume discharged, as well as the origin of the waste. Offloading is only possible once the data logger has been activated.

All loads are subject to robust pre-acceptance checks to determine their suitability for the processes on site, including an assessment of their variability over time. All loads are pre-booked into the works, to ensure that there is sufficient capacity within the works, and if necessary, loads are diverted to other appropriately permitted facilities. Once a load has been assessed and determined to be acceptable for treatment at the site, the producer is issued an appropriate key fob to access the data logger and offloading point at the works. The data logger is interlocked with the offloading point to ensure that only authorised loads are accepted. The offloading point is covered by CCTV camera and prior to offloading, the control centre for the works must approve the offloading. Loads are subject to random sampling and inspection prior to offloading. Copies of the current versions of these documents are appended as Appendix A.

Pre-acceptance and acceptance method statements for the works have been prepared and approved as part of the YW management system. These are corporate level documents applicable across all potential imports to any of YW wastewater treatment works, however, individual works may have specific restrictions or limitations on chemical and biological components within potential imports, based on site specific factors.

Due to the nature of the site, the works is operational 24-7, however, it may not be fully staffed during all operational hours. However, the majority of imports will be received between 0600-1900. There is continuous monitoring of the site from the regional YW control centre.

This activity is currently operational under a trade effluent agreement, on advice from the Environment Agency, YW wish to continue this activity under a bespoke waste permit.

There are no channelled emissions to air from the permitted operations.

There are no generators or similar plant used within the permitted area at the site, which means it falls outside of the scope of the Medium Combustion Plant Directive.

An odour management plan (OMP) has been produced for this activity.

## 3. Supporting Information

### Form B2 Additional Information

#### 3d Management systems (all)

**Does your management system meet the conditions set out in our guidance? What management system will you provide for your regulated facility? Please make sure you send us a summary of your management system with your application**

Yorkshire Water (YW) has an established Environmental Management System (EMS), which is certified to the ISO14001 standard. The EMS forms part of a wider corporate Integrated Management System (IMS) which also incorporates quality management, health and safety management, asset management, organisational resilience, and business continuity requirements. The management system follows an asset life cycle approach, from design through to decommissioning.

The YW EMS has been certified to ISO14001 since 2004. The certified EMS scope covers: "The management and operation of clean and wastewater assets and associated services". YW's top level commitment to environmental and quality performance can be found in the Quality & Environmental Policy. YW has a central team responsible for the implementation of the overall IMS. YW personnel have role statements which provide details of the responsibilities and accountability of individual roles. YW has established appropriate forums and mechanisms for the identification and management of risk, including senior leadership teams and governance groups. Actions are cascaded throughout the organisation as appropriate.

In relation to environmental issues, climate change risk assessments are carried out as well as consideration of extreme weather and climate resilience work. Environmental aspects and impacts have been identified and are recorded using the company's software platform for recording risks (currently the '4Risk' system). YW is committed to comply with all relevant legislation, regulations and any other requirements to which the organisation subscribes. Legislation is analysed so that its relevance to the activities, aspects, products and services of YW are understood, communicated and applied. Registers of relevant legislation and other requirements are maintained and managed via the Evaluation of Compliance (EoC) process held on SharePoint. Management requirements that arise from risk assessments and evaluation of compliance processes are taken into account in planning operational control and emergency preparedness procedures.

Operational facilities are managed in accordance with procedures laid down within the EMS. This includes procedures to identify and control environmental issues arising from YW's activities, including specific environmental permit requirements. Procedures specify environmental best practice requirements, including for example storage of chemicals and oils within a bund (with 110% capacity) which must be maintained in good condition, located inside a building wherever possible, on hardstanding and away from watercourses and site drains. Waste must be segregated appropriately, and waste containers must be located on impermeable hardstanding. YW has developed a biodiversity policy, underpinned by specific processes and procedures, to deliver programmes of work that aim towards a biodiversity net gain. This policy is applicable to contractors delivering work on behalf of YW.

A planned maintenance system is in operation covering all electrical and mechanical equipment and calibration of instrumentation and control system. A list of all plant items is stored on the Asset Inventory System (AI2) and the frequency, scope and records of planned maintenance and calibration are stored on SAP. Job cards for planned maintenance are produced through the SAP system giving the necessary work instruction. Planned maintenance requirements are initially based on recommendations provided in Operations and Maintenance (O&M manuals).

Total Care Plans (TCPs) are produced for all sites and are reviewed at set intervals. TCP reviews set future planned maintenance frequency, the work to be carried out during the planned maintenance and identifies critical and life expired plant items. This is based on the review of the plant item's history and on condition monitoring results.

An inspection and testing programme for above and below ground vessels, pipes and valves is in place. This programme of work to detect any deterioration or weakness of assets typically incorporates a combination of visual examinations and non-destructive testing (e.g. ultrasonic thickness measurements). The frequency of inspection is in accordance with risk based requirements, which also varies according to the condition of the asset. A clear process to address any identified defects, with assigned responsibilities, is in place.

In addition to planned maintenance activities described above, a programme of daily, weekly and monthly visual inspections and checks are undertaken. This includes, for instance, visual inspections of general site condition and housekeeping including spills and leaks, checks for abnormal heat, noise, and vibration, checking the operation of pumps and monitoring instrumentation, checking calibrations are in date etc. Any abnormal observations are recorded in the site logbook.

Further to the above, the waste import facilities are supported by a third party provider to specifically support the planned and preventative maintenance of the import logger and associated CCTV systems. The loggers are fitted with pH probes to prevent out of Spec discharges and the CCTV are in place to remote monitor the loads prior to approving the imports.

The designated Technically Competent Manager (TCM) also undertakes monthly inspections of the site to identify any potential issues and arrange resolution as necessary. These inspections are recorded, and the information is retained by YW. Processes on site operate continuously, 24-hours per day, 7-days per week, apart from maintenance periods. The plant is designed to operate unattended with process parameters being monitored continuously. Operating logs are stored electronically.

Plant breakdowns are responded to on the basis of a risk assessment matrix (RAM) and prioritised according to consequence of failure and likely time to failure occurring. Amongst other attributes, the RAM takes into account impact to environment, health and safety, cost and flooding. Site operational staff are responsible for requesting breakdown maintenance and repairs. Any reactive work that achieves a high priority on the RAM is called through to the Engineering Service Desk for progression. These jobs are treated as schedule busters and are progressed accordingly. Records of all maintenance (planned and reactive) and calibration are retained on the SAP work management system. YW has developed processes to identify, respond to and control emergency situations that may cause adverse environmental consequences. Spill kits are readily accessible at locations where there is a risk of spillage (e.g. delivery, storage, and areas of use). Spill control toolbox talks are provided to staff. This includes information about how to prevent and control pollution incidents from accidental spills of oils, fuels, sludge, and chemicals.

Contingency plans help minimise potential environmental impacts; this includes emergencies arising from breakdowns, enforced shutdowns, abnormal circumstances such as flooding as well as major fire and spill/loss of containment events. The YW Business Continuity Plan is in place to define and prioritise critical business functions, details the immediate response requirements for a critical incident and details strategies and actions to be taken to ensure business continuity. All Bioresources sites have the capability of remote monitoring and remote operation of key functions.

Process monitoring is undertaken for all key processes on site. This includes monitoring of operational parameters of plant and equipment to ensure it is operating effectively and efficiently. YW maintains processes to ensure that all those working for or on behalf of YW are suitably trained to fulfil their roles efficiently.

Assessment of competence and identification of individual training needs is carried out through mutual discussion between the individual and their manager as part of the company performance management process, a fundamental part of which is the competency framework and progression plans which are available for every role in the organisation. All YW employees receive IMS awareness training, delivered online at induction and periodically thereafter. This includes awareness of the environmental policy and understanding key environmental hazards and risks and the need to comply with IMS requirements. Toolbox talks are used to provide information and training to site staff, including information about environmental requirements/activities and legislative and compliance requirements. Training records for programmes and courses managed centrally are held on the company Learning Management System. Records for specific training managed locally at site is held by individual managers and/or on the Learning Management System.

Communication plans are in place to communicate business performance based on the company's 'Big Goals', company objectives and performance commitments, aligned to the quality, safety, environmental and asset management requirements. The company intranet, called the Hive, provides regular news updates for YW personnel and holds a wide range of information that employees can access. Other key communication channels include regular corporate newsletters, business unit-specific newsletters, and update sessions and events held by senior business leaders. 'Safeguard' communications are used to issue notifications such as Safety Alerts, Toolbox Talks and Lessons Learned from incident investigations to personnel across the business.

YW has specific procedures in place for the management of contractors regarding health, safety and environmental requirements. This includes procedures to ensure contractors have the required skills and environmental competencies to carry out works at this site. Initially, contractors are assessed by the procurement department for inclusion on the approved supplier list, which includes health and safety and environmental criteria for example, waste documentation such as waste carrier's licence/training certificates. Even when the contractors are on the approved supplier list, they are still further assessed for each specific contracted activity. The contractor is required to submit a risk assessment method statement (RAMS) prior to any commencement of work, identifying how work is to be undertaken and the associated risks. The RAMS must be approved by the Site Manager or an assessor who is competent at reviewing a RAMS, who will also identify any site hazards and issue an Authorisation to Work/Enter the site, following a site induction. When on-site, the contractor must carry this Authorisation to Work at all times.

Yorkshire Water's IMS objectives are documented with the 'Big Goals' and 'Performance Commitments' which are available and communicated via the company intranet. Planning to achieve IMS objectives is monitored and reported internally (via Performance Zone) and externally (via the Annual Report).

The EMS is subject to a Senior Management Review twice a year to consider environmental performance, objectives and targets and continual improvement. The Innovations Team at YW undertakes regular monitoring and review of new and innovative technologies and equipment to ensure the business continually improves its operations and activities. This includes consideration of cleaner technologies and improved environmental performance. Sectoral and cross-section benchmarking also takes place as required.

Processes have been developed by YW to identify, respond to and control situations that may cause actual or potential non-conformities. Non-conformities may be identified through internal audits/inspections or may be detected through other means. Incidents are managed in accordance with the Incident Management policy and procedures and Emergency Planning manual. In the event of a significant incident a root cause analysis is conducted. Actions are identified, reported, recorded, and communicated to prevent reoccurrence.

Complaints are typically received by YW central Customer Services team, where all complaints are logged on the ICE system. Complaints relevant to site are passed on to the Site Manager for further investigation. The Site Manager is responsible for ensuring that any complaint is investigated and, if found to be justified, that work is undertaken to resolve the issue, including liaising with the relevant regulatory bodies where appropriate. The Customer Service Team ensure an appropriate response to the complainant in a timely manner including, if and as appropriate, detailing the reason behind the issue and the actions taken to resolve the matter. All complaints information is recorded on the ICE system in order that this can be monitored, reviewed, and analysed.

- YW operates an internal audit programme delivered by trained internal auditors or suitably qualified external consultants or contractors. This includes the following:
- IMS auditing/inspections undertaken by the IMS Team.
- Regular combined quality, health and safety and environmental inspections performed at all operational sites.
- Assurance and improvement programme to ensure the health, safety, environmental and technical compliance of contractors delivering capital schemes.
- Audits of contractors delivering repair and maintenance activities.

YW is also subject to regular audits by external auditors to ensure continuing adherence to ISO14001 requirements. A formal Management Review of YW's IMS is undertaken and recorded at least once a year. The purpose of these meetings is to ensure the IMS' continuing suitability, adequacy and effectiveness as well as to



assess opportunities for improvement and the need for changes to the management system, including the policy and objectives.

## 6 Environmental risk assessment

### Geology and Aquifers

The bedrock geology is that of the Cloughton Formation, comprising sandstone, siltstone and mudstone. Except for the north west side of the site, the superficial deposits are Devensian Till.

The bedrock aquifer is a secondary A aquifer. The superficial aquifer is secondary (undifferentiated). There are no groundwater source protection zones within 1km of the site.

### Surface Water

The site is adjacent to the Stainsacre Beck, which flows towards the north west to join the River Esk, approximately 1.3km to the west.

### The Surrounding Area

There are no Sites of Special Scientific Interests (SSSI) within 2 km of the site – the closest is the Whitby-Saltwick SSSI approximately 2.2km north of the site. There is an area of ancient woodland 75m south of the site, known by various names including Larpool Wood and Cock Mill Wood. The nearest SAC and SPA, also designated as a SSSI, is the North Yorks Moors, approximately 2.9km south west of the site at its closest point. The site does not lie within any Source Protection Zones or areas designated for nature conservation.

Whitby WwTW is located on the south eastern fringes of Whitby. The site is surrounded by the Stainsacre Beck to the south, the A171 to the north, farmland to the north and west and residential properties and a caravan park to the east. To the south of the Beck is a wooded area and long distance path. The closest residential and commercial properties are approximately 60m east, Stainsacre approximately 600m south east, and the Whitby industrial estate 500m north east.

**Table 3-1.** Potential receptors, distance and direction from Whitby Sewage Treatment Works

Site Name	Direction from site	Distance from site (approx.)
Principal (secondary A) Bedrock Aquifer	N/A	N/A
Secondary (Undifferentiated) Superficial Aquifer	N/A	N/A
River Esk	North West	1.3 km
Stainsacre Beck	South	50 m
North Yorks Moors (SAC/SPA/SSSI)	South west (closest point)	2.9 km
Larpool Wood / Cock Mill Wood (Ancient Woodland and Deciduous Woodland)	South	75 m
Protected Species (Code 3)	Surrounds and includes site	

Site Name	Direction from site	Distance from site (approx.)
Residential Receptors including caravan park	East	60 m
Residential area (Stainsacre)	South East	600 m
Commercial receptor Whitby Industrial Estate	North east	500 m

Data taken from MAGIC.gov.uk website, accessed June 2021. For habitat sites, the relevant distance for consideration are: International designations (SAC, MPA, SPA and Ramsar - 10km); National designations (SSSI - 2km); Local nature reserves (LNR) and ancient woodlands (AW) (2km)

### Site History

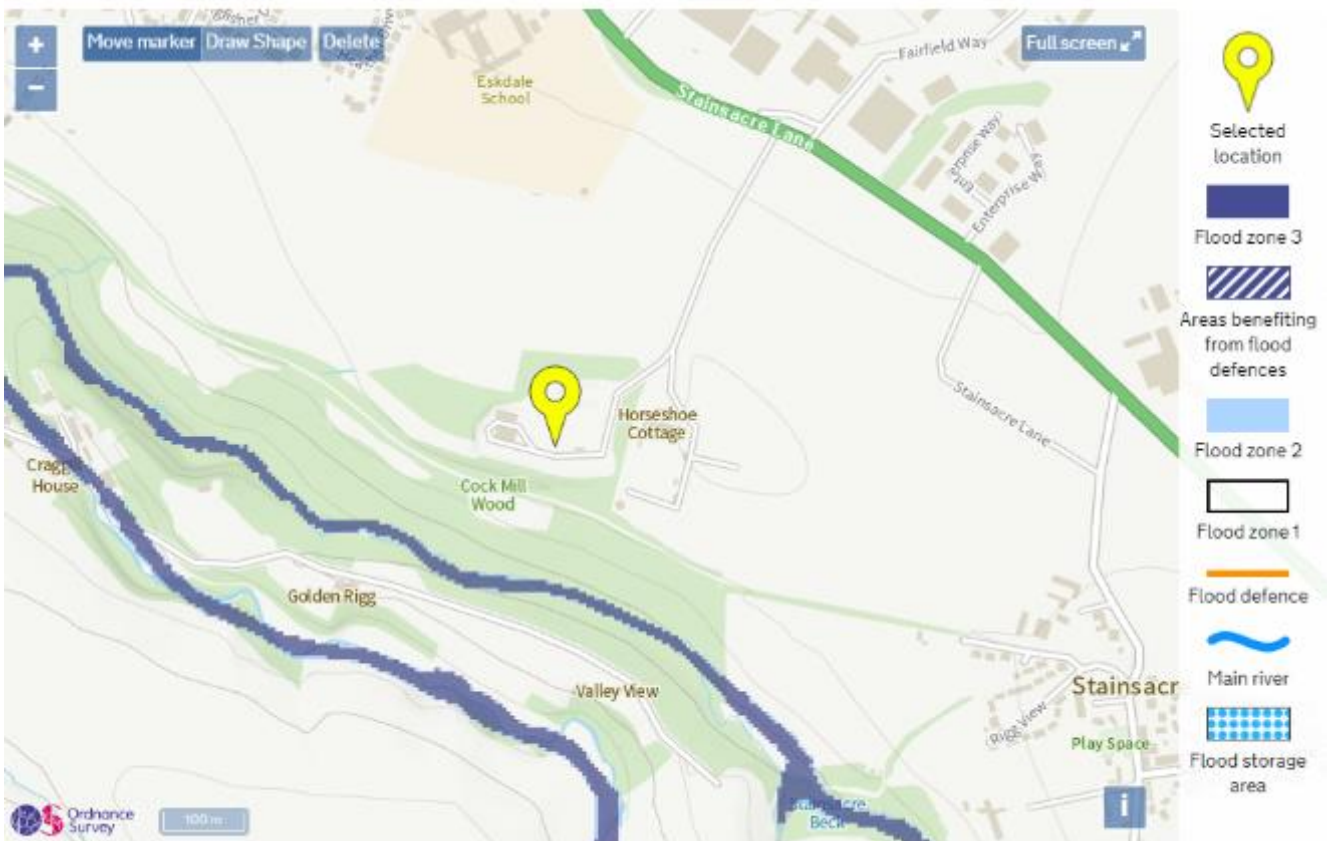
In 1851, the site was nothing more than farmland with the Scarborough to Whitby railway running along the south of the site. The Broomfields farm is present at this time. The site remains unbuilt and farmland until the 1980's.

Data taken from oldmapsonline.org, accessed May 2021.

### Flooding

The whole site lies within Flood Zone 1 with a low probability of flooding from rivers (<1:1000 annual probability of flooding). Surface water flooding for the site is very low.

Figure 3.1. Flood risk map



Flood risk map taken from Gov.uk Flood Map for Planning, accessed 17<sup>th</sup> May 2021.

An environmental risk assessment of the site changes has been carried out in line with the requirements of the Horizontal Guidance Note H1 and Guidance given on gov.uk. This guidance specifies the following approach to carrying out an environmental risk assessment for a proposed activity:

- Identify potential risks that your activity may present to the environment;
- Screen out those that are insignificant and don't need detailed assessment;
- Assess potentially significant risks in more detail if needed;
- Choose the right control measures, if needed; and
- Report your assessment.

Please see document reference 'Whitby WwTW – Environmental Risk Assessment'

**Climate change risk screening**

Category	Screening Questions	Score
Timescales	Permit required until 2060 or beyond	5
Flooding	High risk of flooding from rivers or seas	0
Water Use	Water not required	0
<b>Total Screening Score</b>		<b>5</b>

**Humber river basin district: climate change risk assessment worksheet**

Name: Yorkshire Water

Our permit reference number (if you have one): Whitby WwTW

Your document reference number: Application support document

**Risk assessment worksheet for the 2050s**

Humber river basin district

You must carry out a climate change risk assessment for any new bespoke waste and installations permit applications if you expect to operate for more than 5 years. Use the [user guide](#) to complete the table. You can add in extra pages if necessary.

Consider how your operations will be affected by the changes in weather and climate described in the table. Consider any changes to average climate conditions that may impact on your operations, for example extreme rainfall.

Also consider:

- critical thresholds - where a 'tipping point' is reached, for example a specific temperature where site processes cannot operate safely
- changes to averages - for example an entire summer of higher than expected rainfall causing waterlogging
- where hazards may combine to cause more impacts

You can add in other climate variables if you wish.

If you have stated on your application form that you do not expect to be operational in 2050, you must still consider climate change risks for the time you do intend to operate. Whilst the variables are for the 2050s, this is an estimated date and you may experience these conditions before then.

This worksheet will sit in your management system. It must appear on the management system summary you submit with your application, even if you do not need to submit the whole risk assessment with your application.

If your pre-mitigation risk score (column D) is 5 or higher, you must complete columns E to H.

Potential changing climate variable	A Impact	B Likelihood	C Severity	D Risk (B x C)	E Mitigation (what will you do to mitigate this risk)	F Likelihood (after mitigation)	G Severity (after mitigation)	H Residual risk (F x G)
1. Summer daily maximum temperature may be around 6°C higher compared to average summer temperatures now.	6	4	4	16	Risk of increased odour from sewage processes. OCU's utilised as appropriate. May need to remove rag and screening skips more often	2	2	4
2. Winter daily maximum temperature could be 4°C more than the current average, with the potential for more extreme temperatures, both warmer and colder than present.	2	2	4	8	Risk of increased odour from sewage processes. OCU's utilised as appropriate. Extreme cold may reduce biological processes efficiency	2	2	4
3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity)*.	2	2	2	4	Works design basis may be exceeded. However, this would apply to UWWTD operations at the site rather than permitted activities.	1	1	1
4. Average winter rainfall may increase by 29% on today's averages.	2	4	4	16	Rainfall would increase strain on site drainage and increase flows at the inlet. However, volume could be handled by the UWWTD works with potential increased storm flow retention so no impact.	2	4	8

Potential changing climate variable	A Impact	B Likelihood	C Severity	D Risk (B x C)	E Mitigation (what will you do to mitigate this risk)	F Likelihood (after mitigation)	G Severity (after mitigation)	H Residual risk (F x G)
5. Sea level could be as much as 0.6m higher compared to today's level *.	1	1	1	1	The site sits within flood zone 1	1	1	1
6. Drier summers, potentially up to 34% less rain than now.	1	1	1	1	May reduce total flow through the UWWTD, but should not impact on permitted activities.	1	1	1
7. At its peak, the flow in watercourses could be 30% more than now, and at its lowest it could be 65% less than now.	1	1	1	1	No impact on permitted activities.	1	1	1

\*Indicates data has come from climate change allowances as part of the spatial planning process. Evidence from your planning submission is acceptable evidence for this worksheet.

### 3.1 Form B4 Additional Information

#### 2 Point source emissions to air, water and land

Not Applicable as there are no point source emissions to air, surface or ground water or land from the permitted activity.

#### 3 Operating techniques

##### 3a Technical standards

Table 3a – Technical standards		
Description...	Appropriate measure	Document reference (if applicable)
Non-hazardous and inert waste: appropriate measures for permitted facilities	When appropriate measures apply	
	General management appropriate measures	All parts complied with, see section on EMS in application.
	Waste pre-acceptance, acceptance and tracking	Parts 1 and 2 are met using the method statements in Appendix A of the application.  Part 3 is not met as non-conforming wastes are not offloaded and returned to sender  Part 4 is not met as wastes discharged into main urban waste water flow on offloading
	Waste storage	N / A – No storage of waste on site
	Waste treatment	General principles met through operators EMS  Sections 1 – 3 are not applicable to the processes on site.
	Emissions control	Only section 4 applicable to processes on site and are met using the sites waste pre-acceptance and acceptance method statement. Final outputs assessed as part of the sites water discharge environmental permit (separate to this permit)
	Emissions monitoring and limits	Only section 3 is applicable and covered by a separate environmental permit

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	Process efficiency appropriate measures	Not applicable to non-installations
	Waste minimisation, recovery and disposal	Covered by compliance with sites EMS



**3b General requirements**

Table 3-2 Odour Risk Assessment

What harm can be caused and who can be harmed			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains?
Tanker off-loading points	Residential and commercial properties, hospitals, schools, amenities such as parkland and footpaths	Air dispersion	Where odorous material is received at the site it is either discharged in the head of works directly into the main works or placed within the holding tanks and diluted. Pre-acceptance procedure for screening out highly odorous effluent.	Fairly probable	Nuisance issue to local populace and users of amenities	Moderate
Head of the works	Residential and commercial properties, hospitals, schools, amenities such as parkland and footpaths	Air dispersion	Pre-acceptance procedure for screening out highly odorous effluent.	Fairly probable	Nuisance issue to local populace and users of amenities	Moderate
Waste storage areas	Residential and commercial properties, hospitals, schools, amenities such as parkland and footpaths	Air dispersion	There is no waste storage on this site.	Unlikely	Nuisance issue to local populace and users of amenities	Very Low

Table 3-3 Environmental Accident Assessment and Accident Management Plan

What harm can be caused and who can be harmed			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains?
Major fire / explosion	Local population. Ecological receptors	Windblown dispersion.	Fire alarm systems installed and maintained. Electric temperature sensor, flame arrestors, etc. Follow site Incident Response Plan and inform relevant authorities	Very unlikely	Severe	Acceptable
Minor fire / explosion	Local population. Ecological receptors	Windblown dispersion.	See above for major fire	Unlikely	Significant	Acceptable
Failure to contain firewater	Local water courses. Ground and groundwater	Surface water drainage system. Diffusion into ground.	Fire prevention measures as above. Drainage of wider wastewater treatment works contained and directed to the head of the works. Follow site Incident Response Plan and inform relevant authorities	Unlikely	Significant	Acceptable
Vandalism	Local population. Ecological receptors. Local water courses. Ground and groundwater	Windblown dispersion. Surface water drainage system. Diffusion into ground.	Site security measures are in place including perimeter fence with controlled access gates. Regular inspection of perimeter fences. Address any specific equipment damage. Reinstate and review security measures.	Somewhat unlikely	Noticeable	Acceptable
Deposit of unsuitable effluent	Ecological receptors and local water courses	Impact on wider WwTW and final effluent quality	All effluents subject to robust pre-acceptance and acceptance checks Pre-acceptance checks increased on more variable effluents Interlocking between key logger issued to authorised contractors and offloading point to prevent unauthorised deposits Deposits subject to random acceptance checks	Unlikely	Significant	Acceptable

What harm can be caused and who can be harmed			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains?
Misconnection of tanker offloading hoses	Local population. Ecological receptors. Local water courses. Ground and groundwater	Overtopping of tanks	Dedicated hoses on off-loading points. Pre-acceptance and acceptance testing of all third-party waste imports	Somewhat unlikely	Significant	Acceptable
Flooding from rivers / stream / canal / groundwater etc	Local water courses. Ground and groundwater	Surface water drainage system. Diffusion into ground.	The site is located in a flood zone 1 Follow site Incident Response Plan and inform relevant authorities. Take appropriate corrective and preventative actions to minimise environmental impact	Very unlikely	Significant	Insignificant
Flooding due to drain blockages and/or excessive rainfall causing localised on site surface water flooding	Local water courses. Ground and groundwater	Surface water drainage system. Diffusion into ground.	Regular infrastructure and housekeeping inspections including visual inspection of drains and hard standing. Follow site Incident Response Plan and inform relevant authorities. Take appropriate corrective and preventative actions to minimise environmental impact	Somewhat unlikely	Noticeable	Acceptable
Generalised or localised power failure leading failure of pumps / control systems and possible leaks and escape of sludge	Local water courses. Ground and groundwater	Surface water drainage system. Diffusion into ground.	Back-up power / contingencies plans are in place to provide power to critical operations in the event of an electrical outage	Fairly probably	Minor	Insignificant

What harm can be caused and who can be harmed			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains?
Fuel / oil spills during tanker refilling / handling operations	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	Invoke spill containment procedures. Clean up according to COSHH data sheets and appropriate disposal arrangements. Isolate affected pipework \ sources Drainage of wider sewage treatment works contained and directed to the head of the works. Follow site Incident Response Plan and inform relevant authorities	Somewhat unlikely	Noticeable	Acceptable
Failure of fuel / oil containment	Local water courses. Ground and groundwater.	Surface water drainage system. Diffusion into ground.	Regular inspection of containment. Clean up spillage and transfer waste into appropriate containment for recovery or disposal. Provision of containment via bunded storage tanks. Drainage of wider sewage treatment works contained and directed to the head of the works. Follow site Incident Response Plan and inform relevant authorities	Unlikely	Significant	Acceptable
Pump / bearing failure leading to excessive noise	Local population	Air	Planned preventive maintenance system in place. Complaints handling and response system in place	Somewhat unlikely	Noticeable	Acceptable
Failure (cracks, splitting) of underground pipework (e.g. fuel, chemicals, sludge, site drains)	Ground and groundwater	Infiltration / percolation through ground	Planned maintenance systems in place In-line flow monitoring in key locations and tank level monitoring would identify losses	Somewhat unlikely	Significant	Acceptable

Table 3-4 Ranking Matrix for Risk Assessment

"S" Severity of environmental impact		"L" Likelihood of event	
1. Minor	Nuisance onsite only (no off-site effects) No outside complaint	1. Extremely unlikely	Incident occurs less than once in a million years
2. Noticeable	Noticeable nuisance offsite, e.g. discernible odours Minor breach of Permitted emissions, but environmental harm One or two complaints from the public	2. Very unlikely	Incident occurs between once per million and once every 10,000 years
3. Significant	Severe and sustained nuisance, e.g. strong offensive odour or noise disturbance Major breach of Permitted emissions with possibility of prosecution Numerous public complaints	3. Unlikely	Incident occurs between once per 10,000 years and once every 100 years
4. Severe	Hospital treatment required Public warning & off-site emergency plan invoked Hazardous substance releases into water course with ½-mile effect.	4. Somewhat unlikely	Incident occurs between once per hundred and once every 10 years
5. Major	Evacuation of local populace Temporary disabling and hospitalisation Serious toxic effect on beneficial or protected species Widespread but not persistent damage to land Significant fish kill over 5 mile range	5. Fairly probable	Incident occurs between once per 10 years and once per year
6. Catastrophic	Major airborne release with serious offsite effects Site shutdown Serious contamination of groundwater or watercourse with extensive loss of aquatic life	6. Probable	Incident occurs at least once per year

Table 3-5 Overall Assessment of Risk

Likelihood of Event		Severity of Environmental Impact					
		Minor	Noticeable	Significant	Severe	Major	Catastrophic
		1	2	3	4	5	6
Extremely Unlikely	1	1	2	3	4	5	6
Very Unlikely	2	2	4	6	8	10	12
Unlikely	3	3	6	9	12	15	18
Somewhat Unlikely	4	4	8	12	16	20	24
Fairly Probably	5	5	10	15	20	25	30
Probable	6	6	12	18	24	30	36

Table 3-6 Overall Assessment of Scores and Interpretation

Risk Score	Magnitude of Risk	Consideration
6 or less	Insignificant	Low or negligible levels of risk, low or negligible impacts. Adherence to good operational practices will adequately control these risks
8 – 12	Acceptable	Lower level of possible impact, but major severity or high likelihood would require consideration of actions to reduce risk
15 – 20	Unacceptable	Combination of high likelihood or major impact would require further assessment and possible actions to reduce risk
24 or more	Severe	Immediate resolution required

## Appendix A. Current Waste Pre-acceptance and Acceptance Procedures

### Waste Pre-acceptance checks

#### **Aim**

This document aims to detail a methodology for the assessment of waste enquiries for delivery to YW sites for treatment through the full works flow. It classifies enquiries as either low risk or higher risk, based on their composition, origin and other factors, and puts in place a framework for their assessment, including the required level of sign off.

#### **Audience**

This document is aimed at members of the commercial and operations teams who receive waste enquiries and the tanker trade waste team responsible for agreeing imports.

#### **Scope**

As an operator of waste water treatment works, Yorkshire Water are approached by a range of organisations with liquid and / or easily pumpable sludges, who wish to transport these wastes to a suitable permitted waste water works by tanker, for them to be treated within the main flow.

#### **Exclusions**

This procedure does not apply to inter or intra company transfers from other waste water treatment works.

Yorkshire Water does not accept hazardous wastes. Any such enquiries should be rejected.

This procedure does not apply to enquiries relating to the delivery of wastes directly for anaerobic digestion. At present, Yorkshire Water does not hold suitable permits for such imports.

#### **Definitions**

This document refers to two types of waste which may be enquired about:

Low risk wastes are those which are well understood and although individual loads may be variable, the framework of typical value is understood. This classification will apply to sewage and sewage derived wastes (e.g. cess pit, chemical toilet, septic tank wastes); landfill leachates from landfills classified as either inert or non-hazardous, where there is a range of data available on leachate composition; liquids from the food and drink industry relating to off-spec inputs or process washings.

Higher risk wastes are those where the waste is less understood or has the potential to be more variable. Generally, it will apply to all wastes not classified as low risk. Some producers or carriers may be classified as higher risk due to compliance or commercial concerns.

#### **Procedure**

All waste pre-acceptance enquiries will require the enquirer to complete the waste pre-acceptance form, and for non-sewage derived wastes, provide a representative sample of the proposed waste stream.

Upon receipt of an enquiry, it should be logged and assigned to a member of the tanker trade waste team for assessment, including determination of the completeness of the application.

All enquiries are deemed to have sufficient information to assess, if they include the following:

- Producer name (originating site, not haulier name)
- Waste description
- Process giving rise to waste
- SIC code giving rise to waste
- EWC code
- Nature of producers business
- Haulier (if appropriate)
- Preferred delivery sites
- Tanker volume, frequency and variability
- Key chemical parameters

Assessment may continue prior to receipt of all information, but no acceptance can be granted until all relevant information is provided. If data is missing, including the provision of a suitable sample, the customer should be contacted within 2 working days. If data has not arrived within 10 working days, the case should be closed.

Initial screening should be undertaken to ensure that the proposed EWC code is correct based on the provided data and the description and that the code is on the list of permitted wastes. The proposed site should be screened to ensure it is permitted.

Analysis of the waste stream sample should be undertaken. This sample may either be provided by the producer, or from a Yorkshire Water sampling visit.

The sample should be subject to appropriate testing prior to acceptance:

All samples should be sampled for COD; ammonia; metals; pH; suspended solids and BOD.

For higher risk wastes, additional testing should be carried out dependent upon the provided data and the nature of the process giving rise to the waste. Specification of the testing should be agreed with the technical team, but may include biological inhibition testing as well as additional chemical parameters.

Where the customer provides analytical data, which must be from an accredited laboratory, for the assessment of their waste stream, a sample must be scheduled from the first delivered load.

The customer's preferred site should be checked for any site specific input restrictions with regard to COD and ammonia, along with any proposed alternative sites.

Where the waste stream is a lower risk waste stream, a decision can be made by the commercial team manager as to the acceptance of the waste, subject to agreement from the commercial team.

Where a higher risk waste stream is requested, this will require approval from the technical team, and potentially the technical manager depending on the nature of the waste stream.

Any queries or clarifications raised with regard to a waste enquiry must be recorded and retained.

Once an enquiry has been agreed, a sampling regime should be set for the waste stream, based around operational experience, variability of the waste stream and frequency of delivery. Higher risk waste streams should be sampled more often. The regime should be relayed to both operations staff at the site and the technical team. The commercial team should be informed of a new customer or waste stream.

The customer should be informed of the outcome. Where the waste stream is to be accepted, the customer should be issued with a written agreement of their movement, including site procedures for delivery and a keyfob / code for the logger. A site induction should be arranged for the customer and their driver prior to the first delivery.

## **Validity**



All waste streams should be subject to reassessment every 3 years, or 6 months from the last delivery, whichever is sooner. If the waste stream is low risk, then renewal should be automatic unless there are concerns raised by the commercial team or operations.

Where waste streams are higher risk, sampling data from the previous deliveries should be assessed to determine variability from the original assessment. The technical team may need to recheck permission in the event that sampling shows the waste is more variable than expected. Prior to reauthorisation, confirmation should be sought from operations and the commercial team that there are no outstanding issues.

### **Timescales**

Low risk enquiries should be determined within 2 working days of the receipt of the minimum information required.

Higher risk waste enquiries should be determined within 20 working days of the receipt of the minimum information required.

### **Emergency Loads**

Where an enquiry is received relating to a request for emergency permission to deposit tanker wastes, these must be directed to the tanker trade waste manager or their nominated deputy for approval, where the emergency is genuine (e.g. flooding related; major spillage; road traffic accidents; failure of customer infrastructure).

### Waste Acceptance

All deliveries should be booked in for the day of delivery.

Prior to visiting site the driver must complete the YW online site induction and wear the correct YW compliant site PPE

Upon arrival at site, the customers driver will visit the waste import facility, couple up and log on.

The driver will call the YW controller and confirm booking and arrival on site. The controller should check that the delivery has been booked in for the appropriate day, and that the booking matches the waste transfer note or documentation presented by the driver. If the driver or load have not been booked in, the non-conforming load procedure should be followed.

The following detail should be checked for completeness prior to allowing any deposit. The operator should ensure that the following information is complete and accurate on the form and or booking.

- Delivery organisation and full name of driver
- Address of delivery organisation (if third party)
- Waste carriers registration number
- Originating location and contact there
- EWC code
- Waste description and SIC code
- Total volume
- Delivery address
- Date

If data is missing, it is the drivers responsibility to find the missing information

### **CCTV coverage**

All the offloading is to be supervised remotely, the booking should still be checked as being pre-booked load. The sample should be observed being taken by the driver, who should hold it up to the camera for a visual check. Provide the visual check is acceptable and the transfer note is appropriate, then the offloading may be allowed to proceed, by controller approval.

All samples will be left at the Import facilities sample storage point and collected and analysed in line with YW imported waste sampling policy. If approved for discharge the drivers log on to the system and begin discharge, All Loggers are fitted with PH probes and are restricted to PH 4- PH10

*If the pH of the discharge is outside of the accepted YWS parameters (4pH – 10pH), a local alarm will be triggered (siren and flashing beacon) and the WaSP Logger Screen display details of the pH alarm. If this occurs, then the driver must end the transaction immediately as the actuated valve will shut after 20 seconds of warning.*

*In the event of a pH alarm and the transaction ending, the driver should contact Yorkshire Water for assistance and advise on safe disposal of the load.*

*Any occurrence of pH alarm's & follow up response will be recorded by YWS.*



## **Appendix B. Site Condition Report**

# **SITE CONDITION REPORT WHITBY WwTW**

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

**COMPLETE SECTIONS 1-3 AND SUBMIT WITH APPLICATION**

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

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

<b>1.0 SITE DETAILS</b>	
Name of the applicant	Yorkshire Water Ltd
Activity address	Whitby Waste water Treatment Works Stainsacre Lane, Whitby, YO22 4NW
National grid reference	NZ 90616 08772

Document reference and dates for Site Condition Report at permit application and surrender	Permit application, June 2021.
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Document references for site plans (including location and boundaries)	Please see drawings within permit application supporting document
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**Note:**

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

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

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

<b>2.0 Condition of the land at permit issue</b>	
Environmental setting including: <ul style="list-style-type: none"> <li>• geology</li> <li>• hydrogeology</li> </ul>	<p>The permitted area sits within flood zone 1.</p> <p>The permitted activities are separated from the Stainsacre Beck to the south, by the wider</p>

<ul style="list-style-type: none"> <li>• surface waters</li> </ul>	<p>sewage treatment works, operated by the permit holder.</p> <p>The bedrock below the site is the Cloughton Formation, comprising sandstone, siltstone and mudstone. Except for the north west side of the site, the superficial deposits are Devensian Till..</p> <p>The bedrock aquifer is a secondary A aquifer. The superficial aquifer is secondary (undifferentiated).</p> <p>There are no groundwater source protection zones within 1km of the site.</p>
<p>Pollution history including:</p> <ul style="list-style-type: none"> <li>• pollution incidents that may have affected land</li> <li>• historical land-uses and associated contaminants</li> <li>• any visual/olfactory evidence of existing contamination</li> <li>• evidence of damage to pollution prevention measures</li> </ul>	<p>In 1851, the site was nothing more than farmland with the Scarborough to Whitby railway running along the south of the site.</p> <p>The Broomfields farm is present at this time.</p> <p>The site remains unbuilt and undeveloped farmland until the 1980's when the works was constructed.</p> <p>Data taken from oldmapsonline.org, accessed May 2021.</p>
<p>Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)</p>	<p>None</p>
<p>Baseline soil and groundwater reference data</p>	<p>None collected</p>
<p><b>Supporting information</b></p>	<p>No historic supporting information included, Yorkshire Water will use internal drawings to identify any issues. Area of land within the permit boundary is impermeable and no waste storage undertaken.</p>

<h3>3.0 Permitted activities</h3>	
<p>Permitted activities</p>	<p>Offloading of tanker trade waste into site inlet, for treatment within the main works flow. There is no storage of waste within the permit.</p>

Non-permitted activities undertaken	Operation of wider sewage treatment works
Document references for: <ul style="list-style-type: none"> <li>• plan showing activity layout; and</li> <li>• environmental risk assessment.</li> </ul>	See permit application supporting document, including revised environmental risk assessment

**Note:**

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

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

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

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

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

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

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



<b>7.0 Soil gas and water quality monitoring (where undertaken)</b>	
<p>Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.</p>	
<b>Checklist of supporting information</b>	<ul style="list-style-type: none"> <li>• Description of soil gas and/or water monitoring undertaken</li> <li>• Monitoring results (including graphs)</li> </ul>

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

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

<b>10.0 Statement of site condition</b>	
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Using the information from sections 3 to 7, give a statement about the condition of the land at the site. This should confirm that:

- the permitted activities have stopped
- decommissioning is complete, and the pollution risk has been removed
- the land is in a satisfactory condition.