Environmental Management Plan

Site Name	Whitlingham WRC
Site Address	Anglian Water, Whitlingham WRC, Kirby Bedon Road, Trowse, Norwich, Norfolk. NR14 8TZ
Short Code / Ref No.	WHITST
Catchment	NSSN

This is a controlled template and should not be altered unless authorised.

The content of this document should be reviewed and signed off by the relevant managers on an annual basis and audited on a biennial basis by the business unit auditors. [C] [A]

Name	Signature	Position	Created / Reviewed	Date
Andrew Pope		Treatment Manager	Created new version/updated contact details	23/02/2017
Andrew Pope		Treatment Manager	Updated contacts and site maps	14/02/18
Andrew Pope		Treatment Manager	Reviewed	13/02/2019
Sarah Spencer		Treatment Manager	Reviewed	03/03/2020
S Spencer		STC Manager	Reviewed	03/03/21
S Spencer		STC Manager	Updated	16/03/2021

Contents

Introduction

This document has been designed to cover the Plan, Do, Check, Act methodology used in all Management Systems.

PDCA is the founding principle of this document and therefore the references throughout are in relation to these definitions:

P – Plan – what is the situation, what do we need to achieve and how are we to achieve it?
D – Do – what are the controls in place to ensure that we do our everyday actions without impacting the environment in this area?
C – Check – how do we check that these controls are working and how do we report when they are not?
A – Act – what is the escalation process/review process when things are checked and seen to be not performing?

The key focus of this document is to identify existing processes and controls that cover environmental risk and identifying and addressing those areas that are not adequately covered. Therefore all processes and controls referred to in this document should be adhered to and this document's controls regarded in the same vein for site specific controls.

1 Site Information

1.1 Site Description [P]

Whitlingham sits in 87 Acres to the East of the City of Norwich. We have some close neighbours' just 500 meters away.
Site consists of:

- 3 administration buildings with office based staff
- An M+E team
- A local collection team
- RTS lorry base.

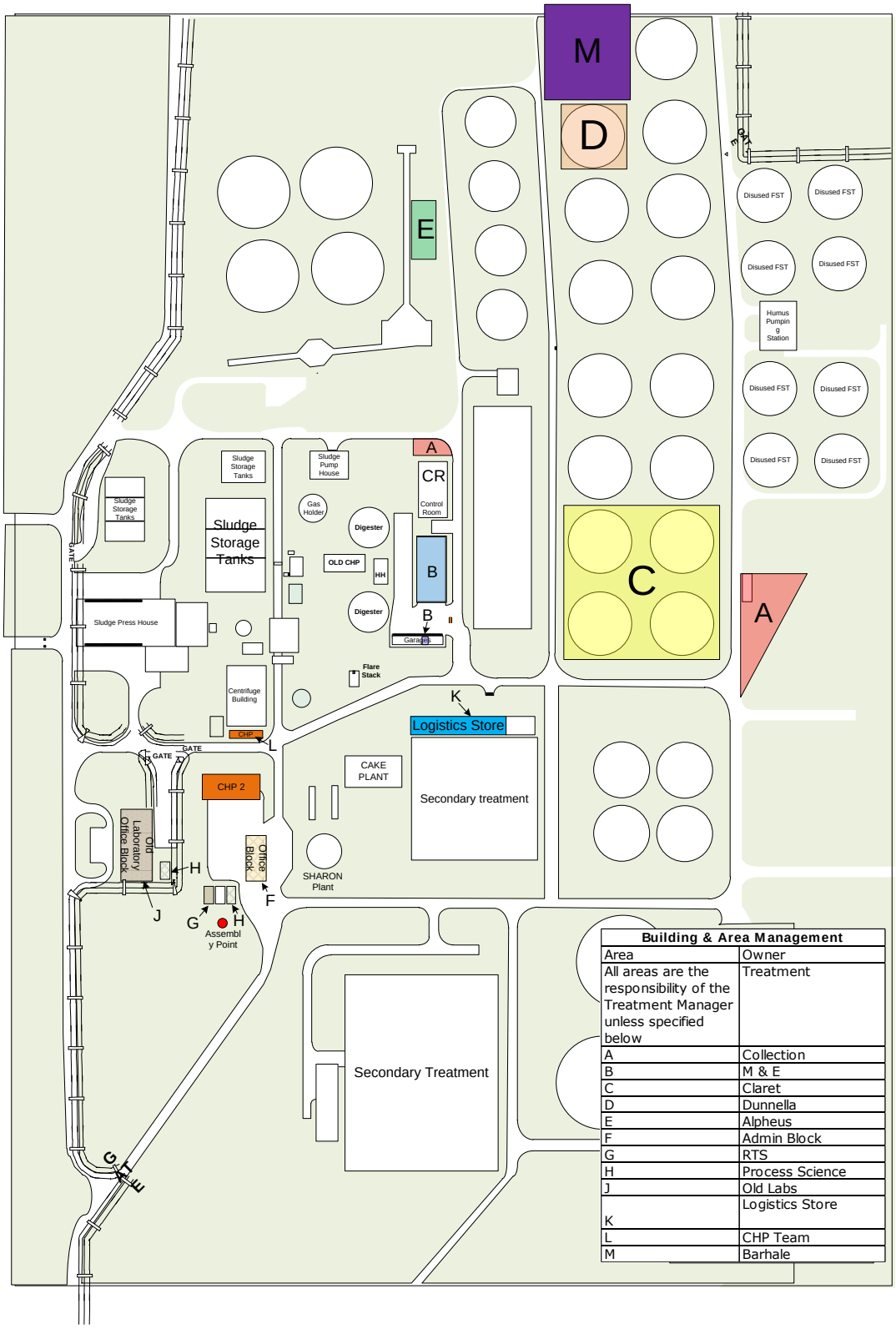
To the east of the main site we have 5 large lagoons and a concrete storage pad for compliant and non compliant cake.
To the West of the main site is a marsh area which is managed on behalf of AW by The Broads Authority.

Whitlingham receives imported liquid sludge and cake from other sewage treatment works. The planned sludge import volume to Whitlingham is 4200m^3/week, cake imports 350m^3/week highlighted in the 2019-20 Area sludge budget – the max import volume is split out as 650m^3 per day 7 days per week.

Sludge is imported and treated under tight controls covered by other plans. Gas produced during this process will then be used in the Combined Heating Power plant on site. This plan will look at the environmental impacts of these activities.

In February 2016 a new cake reception plant was brought online receiving cake from other works, requiring less vehicle movements cutting the amount of sludge imports to site.
The Cake reception can take up to 630 tonne of cake per week at circa 25% dry solids, resulting in planned sludge imports reduction to 700 tonne per week.
This will result in a significant reduction in vehicle movements on local roads to site.
The cake reception plant consists of an enclosed building with odour extraction treatment with a secondary odour suppressant spray system along with a trailer wash facility with associated telemetry alarms and HMI control system.

1.2 Site location [P]



The site is set in a predominantly rural location with the surrounding area being the location of a Country Park, the Norfolk Broads, the River Yare,

the City of Norwich, the village of Trowse with school and Broadland Business Park.

The Country Park is noted as having the following designations*:
- LNR (Local Nature Reserve) named "Whitlingham Marsh"
- Green Flag Country Park named "Whitlingham Country Park"

The park also has a couple of Priority Biodiversity Action plans.

** details taken from Nature on the Map website*

1.3 Permits / Permissions / Licences [D]

This table highlights the permits, exemptions and licences that relate to the sites operation and its impact on the environment:

Ref No.	Description	Regulation	Location held
EPR/LP3499SY 100310	Sludge Treatment permit	EPR – Waste	HAWK central folders and hard copy in site office
EPR/RP3435GB	Combined Heating Power permit	EPR – Waste	HAWK and hard copy in site office
AW4TF1789F	Discharge permit	EPR – Water	HAWK
MWRP RPS 007	Cess and Septic	EPR – Waste	Hawk – RTS
ORZ 777	Hazardous Waste	EPR - Waste	26/10/2013

The conditions relating to these permits are held within the permits and summarised in section 3.3

2 Contact information

2.1 Operational Contacts [P] [D]

Head of Sludge Treatment	Peter Joyce	07841958572
Biosolids Delivery Manager	Stephen Boulton	07885 135281
Treatment Manager	Sarah Spencer	07702 340949
Assistant Manager	Stuart Chatten	07753786323
CHP	OMC	08450 703446
OMC	Duty Manager	08450 703446
Alpheus	Darryn Fowler	01603 631395

2.2 Emergency Contacts [P] [D]

OMC	Duty Manager	08450 703446
CHP	OMC	08450 703446
EA NIRS		08450 8503518
Alpheus		01234 686100

2.3 Third Party Contacts [P] [D]

Alpheus	Darryn Fowler	01603 631395
Claret	Toby Millar	07786 396549
Barhale		01733 421600
EA Eastern Area Office		0370 8506506

Third party management

All third parties operating on AW sites will follow AW environmental controls or their own in house controls should they be more stringent.

All environmental incidents will be notified to the senior AW representative on site at the time of the incident or called through to the OMC should the site be unmanned.

AW site personnel are responsible for ensuring that adequate environmental controls are in place, for instance that third parties adhere to the clauses in the O&M standard contracts about environmental

controls. (i.e. Contractors like Veolia). This will be reviewed at each appropriate contract review meeting.

3 Risks and mitigations

3.1 Risk Identification [P]

An environmental Risk Assessment was completed as part of the generation of this plan and can be found appended to this document when printed and as an independent document on HAWK.

The site has also completed a "Sludge Treatment Centre Operational and Contingency Plan" which can be found on HAWK and is to be reviewed no less than 12 months

3.2 Risk Mitigation [P] [D]

The following section address some of the risks identified in the risk assessment process.

3.2.1 Spill control

Reference WWS – PRO – 8.13

- All Fuel/chemical tanks on site are double skinned and bunded apart from the underground tank beside workshops which are to be assessed.
- Spill control equipment includes absorbent pads absorbent granules and booms which are located in the CAMBI centrifuge building/STC and wooden shed in collection compound.

3.2.2 Reporting an incident

Reference Policy WWS – PA - 008

- On HAWK
- All identified odours on site through operational activity will be recorded on the odour complaint investigation form and reported to the local EA officer and OMC, who will then report to the EA NIRS database. This will then be recorded in the on site odour diary.
- Any external odour complaints will be dealt with immediately by site personnel (standby personnel out off hours) who will complete the odour complaint investigation form with feed back to the OMC and EA and logged in the on site odour diary.
- Any failure of the CHP will be monitored by the OMC and standby personnel called out. Depending on the fault/failure will be reported via the OMC to the EA NIRS database.
- Any site consent failures are reported to the OMC who then report to the EA NIRS

3.2.3 Odour event

Reference
WWS – POL – 010
WWS – STD – 010
WWS – PRO – 10.01

- On HAWK
- All identified odours on site through operational activity will be recorded on the 'Whitlingham site odour complaint investigation form' and reported to the OMC who will then report to the EA NIRS database. This will then be recorded in the on site odour diary.
- Any external odour complaints will be dealt with immediately by site personnel (Standby out off hours) recorded on 'Whitlingham site odour complaint investigation form' with feed back to the OMC and EA and logged in the on site odour diary.

3.2.4 Damage to a habitat

- No reason to be off road on site.
- A site specific management plan will be produced by the Biodiversity Team.
- Standard Rule - No tree or hedge works during the bird breeding season from 1st March to 31st July: Consideration should be given to birds, such as wood pigeon that will nest outside of this period. It is an offence to destroy the nest of any wild bird under the Wildlife and Countryside Act 1981 (Amended).

3.2.5 Other risks identified

- If the site is effected by cold weather and causes failure of the plant
- Extensive cold weather protection has been installed during 2011 and no stoppages occurred over winter due to freezing, defrosting equipment along with portable heating and insulation material are stored in the CAMBI building along with salt supplies for roadways leading to site, a road gritting contract is in place with 'Ground Control' who attend site during cold weather.
- If fuel deliveries are interrupted due to extreme cold weather, the CHP can be turned off and the main boiler run on methane to produce the process steam requirements.
- We have a 4 x 4 vehicle which can be used by standby personnel to access site in extensive cold weather and can also be used to collect other personnel and bring to site.

3.3 Permit conditions

The permits in place require a number of things to be completed and limits to be met.

Reports to the Environment Agency required by the permits are:

Type	Responsible	Detail	Frequency
Waste Returns	S Spencer/S. Chatten	Tonnage waste	Quarterly
CHP report	S Spencer/S. Chatten	Units	Annual
CHP Emissions	S Spencer/S. Chatten	Units	Annual

Other conditions include the limits set by the regulator. These include import and emissions limited as detailed below:

- 250000 tonnes annual import threshold (waste streams permitted listed later in the plan)
- Emissions sampling
    - 500mg/m^3 NO_x
    - 1400mg/m^3 CO
    - Monitor VOCs
- Improvement conditions
    - See the CHP permit for details

3.4 Specific Plans

Each site has a comprehensive library of documents that support the efficient and successful operation of the site. This plan is not going to detail those plans but direct the reader to the locations of the plans.

3.4.1 Odour

An odour plan for the site can be found on HAWK and should be reviewed at a period of no less than 12 months.
This has been formally approved by the Environment Agency

3.4.2 Gas

A Toxic gas plan for the site can be found on HAWK and should be reviewed at a period of no less than 12 months

3.4.3 Contingency

A Sludge Treatment Centre Operational and Contingency Plan can be found on HAWK and should be reviewed at no less than 12 months intervals.

3.4.4 Site Closure

A site closure plan can be found on HAWK and should be reviewed at intervals of no less than 12 months.

3.4.5 Accident

An environmental Accident plan for the CHP plant can be found on HAWK and should be reviewed at intervals of no less than 12 months.

4 Site Management [D]

This section looks at the management of site to minimise impact to the environment.

4.1 Waste Management

Waste management is a highly regulated activity and as a site we have regulatory obligations with regards importing and treating waste as well as the standard Duty of Care obligations. This section looks at those obligations.

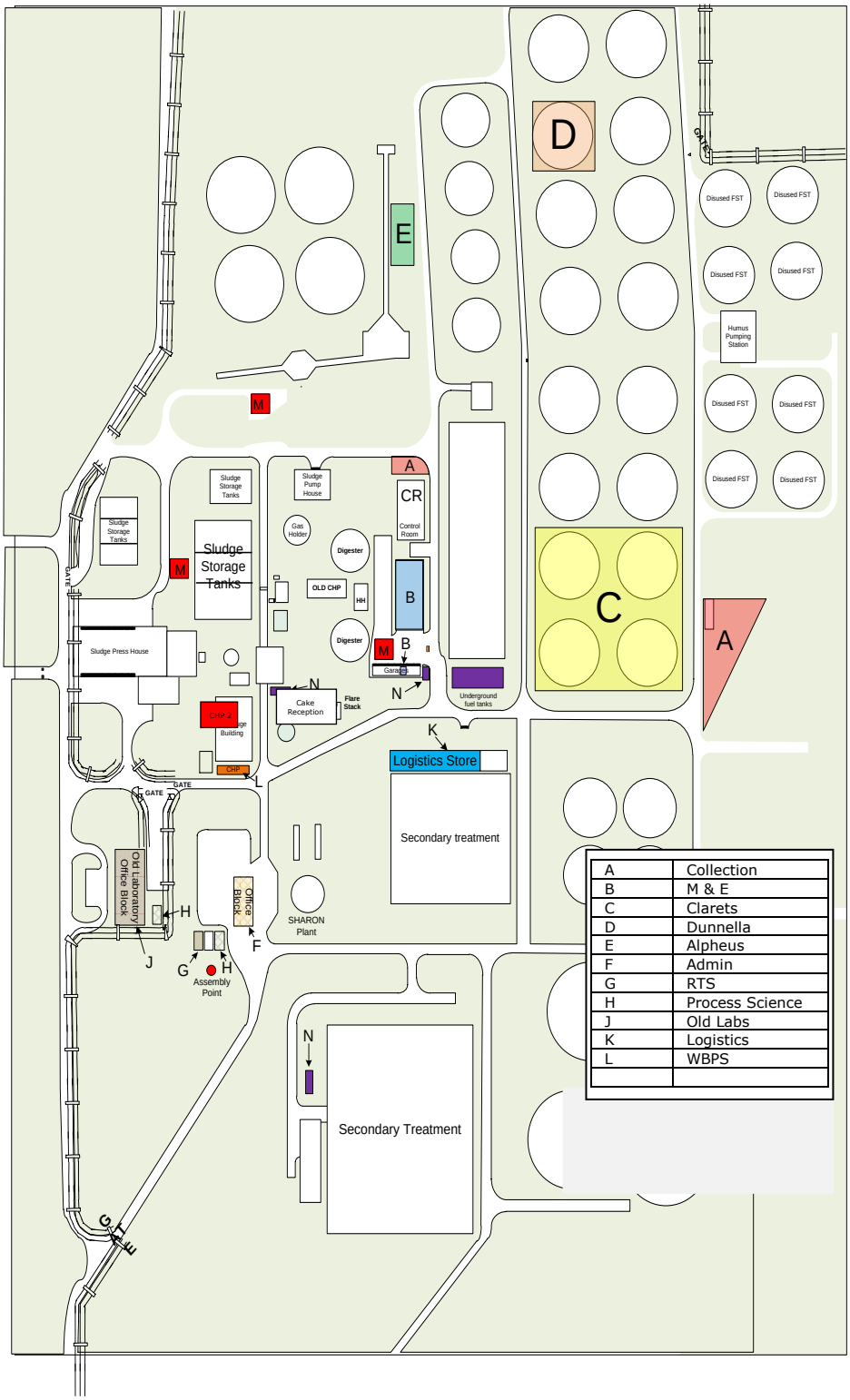
4.1.1 Identification of wastes [P]

The activities on this site generate a wide range of wastes. Primarily though we generate:

EWC code	EWC Description	AW Description
19 08 05	Sludge from treatment Urban Wastewater	Cake/sludge
20 03 01	Mixed municipal waste	General waste
20 01 01	Paper and cardboard	Paper and Cardboard
20 03 06	Screenings	Grit and screenings
20 01 38	Wood other than that in 20 01 37	Wood
20 01 40	Metals	Metal
20 01 21	Fluorescent tubes and other mercury containing waste	Fluorescent lights
16 01 07	Oil filters from vehicles	Oil filters
15 02 02	Absorbent filter materials (including oil filters not otherwise specified) wiping cloths protective clothing contaminated by dangerous substances	Oily rags
13 02 08	Other engine gear and lubricant oils	Waste oil
16 06 01	Batteries Lead	Batteries Lead
16 06 02	Batteries Ni-cd	Batteries Ni-cd
17 06 05	Asbestos	asbestos

4.1.2 Location of wastes

Waste storage on this site is part of our normal operations the diagram below highlights areas where wastes are stored in skips and other waste containers. The processes that treat waste are labelled.



4.1.3 Management of contractors exporting waste [D]

Anglian Water has 14 waste streams removed from this site. These are managed and controlled in the following manner:

EWC Code	EWC Description	Carrier	Broker	Disposal Route
19 08 05	Sludges from treatment urban waste water	Biosolids		Land
19 08 01	screenings	Biffa		Landfill
19 08 02	Waste from de sanding	Biosolids		recycled
20 03 01	Mixed municipal waste	Biffa		Landfill
20 01 01	Paper and cardboard	Biffa		Recycled
20 03 06	Waste from sewage cleaning	Biffa		Landfill
20 01 38	Wood other than that in 20 01 37	Biffa		Recycled
20 01 40	Metals	Biffa		Recycled
20 01 21	Fluorescent tubes and other mercury containing waste	Biffa		Recycled
16 01 07	Oil filters from vehicles	Biffa		Land fill
15 02 02	Absorbent filter materials (including oil filters not otherwise specified) wiping cloths protective clothing contaminated by dangerous substances	Biffa		Landfill
13 02 08	Other engine gear and lubricant oils	Biffa		Treatment
16 06 01	Batteries Lead	Biffa		Recycled
16 06 02	Batteries Ni-cd	Biffa		Recycled
17 06 05	Asbestos	Biffa		Landfill

Copies of the Waste Transfer Notes and Consignment Notes for these waste movements (skips and the like) can be found in the weighbridge office. Wastes that are disposed of to land by RTS and Biosolids have

comprehensive records held by RTS and Biosolids and can be obtained from The Biosolids office in Cambridge.

4.1.4 Management of importing waste

Waste is imported to this site as part of the waste operations.

All cess and septic waste imported to this site is not part of any permit as it is outside the permitted area for this waste. Imports are undertaken under the MWRP RPS 007 for the import of domestic waste. We do have licensed carriers bringing septic and cess waste in under the control of RTS.

This site does accept transfers of AW waste falling under the classifications (as stipulated in the Sludge Treatment Centre Permit):
19 08 01
19 08 02
19 08 05
19 08 09
19 09 02
19 09 03
19 09 06
20 03 04
20 03 06
20 03 09

Copies of the Waste Transfer Notes for the import of Cess and Septic are covered by the signing in process and with a sampling regime to ensure that the waste is the correct classification. These are held in the weighbridge office and sent monthly to RTS.

Wastes that are imported by RTS and Biosolids have comprehensive records held by RTS and Biosolids and can be obtained from The Biosolids office in Cambridge.

4.2 Biodiversity

Biodiversity is important to AW and as part of this focus we are expanding our knowledge and understanding of the biodiversity on our sites.

4.2.1 This Site [P]

The biodiversity on this site has been surveyed whilst AW has been in ownership.

The survey was completed 22nd June 2011

Findings from the biodiversity surveys are held on the biodiversity database and will eventually be mapped on to overlays of each site.

- All sites - no tree or hedge works during the bird breeding season from 1st March to 31st July. Some birds, such as wood pigeon will nest outside of this period. It is an offence to destroy the nest of any wild bird (Wildlife and Countryside Act 1981 – Amended) so this needs to be a consideration at all times of the year.
- All sites with water courses – otters have now spread extensively and we are finding them on most rivers when looking. This should be a consideration for works within ~5m of a water course.

Site specific

- Grass snakes in the lesser used areas of the site.
- A small section of land under AW ownership on the other side of the A47 falls within Whitlingham Marsh local nature reserve.
- AW owns a substantial area of Whitlingham Marsh that falls between operational site and rive, this areas is designated as the Broads national Park.
- Marsh Harriers have attempted to breed on the marsh. This species is listed upon Schedule 1 of the WCA 1981.

4.2.2 Active biodiversity

All AW personnel are encouraged to act as the "eyes and ears" of the company and report any species that they see that has not previously been identified on the site.
Any species recorded on site should be sent to biodiversity@anglianwater.co.uk Here the surveys will be looked at and used to inform company decisions and so that the biodiversity team can provide support to the site.

4.2.3 Rules for biodiversity

There are some general rules which have been developed for operation on sites:
Do not drive on the grassed areas unless specifically authorised to do so.
Report all damage to trees and habitats caused on site.
Refer to "Biodiversity: Guidance for Operations" leaflet for day to day operations.

4.3 Climate Change

- A climate risk assessment has been carried out for Whitlingham, and is available on the system.

- Due to where it is situated, Whitlingham would not be at risk of rising sea levels and due to having a substantial drop on the outfall, this would not be affected either.
- Higher temperatures could leave to plant failure due to thermal cut outs. if this were to happen then the plant would shutdown and alarms would be generated for someone to investigate.
- Chiller units have been installed on site and are used to keep the Digesters at the optimum run temperatures. They can ramp up further than they currently run if outside temperatures were to increase.
- Although temperature changes on site could affect odours, this would constantly be monitored and we already have Odour Management plan in place.
- Lower freezing temperatures could freeze equipment on site which would lead to plant failure and someone getting an alarm to investigate. There is insulation and also trace heating on all equipment that needs it.
- If we were to begin to have lower temperatures on site which equipment could not be protected against using current measures then we would have to write a cold weather plan. Due to being a aeration process the site does not get the lower temps as other sites.
- The site has a permitted throughput of 2300l/s. Anything above this is diverted to the on site storm tanks where it is held. If rainfall continues and there become full then they will discharge directly to stream as allowed in our discharge permit for the site. There is also storm tanks at the feeding Terminal Pumping Station which offer some additional retention of storm water.
- In the event of a lack of potable water on site due to either a burst main or through water shortages in the event of prolonged warm weather leading to raw water shortages then the boilers on site would shutdown leading to the process being halted.