Standard Rules Re-Permitting

Environmental Permit Variation Application - Iver South Sludge Dewatering Centre

TW_STC_EPR_06a | Revised

July 2022

Thames Water

EPR/DP3291SW/V002

Standard Rules Re-Permitting

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
Draft 0		Draft for revision	AW	MKM	MKM	ED
Revision 1	June 2021	Updated with feedback from Mark McAree	JK	MKM	DF	ED

Contents

1. Introduction

The purpose of this Application Support Document (ASD) is to provide supplementary information to support an environmental permit (EP) variation application for the physico-chemical treatment of indigenous and imported wastewater (sewage) sludge at Iver South Sludge Dewatering Centre (ISSDC). This application is being made under the Environmental Permitting (England and Wales) Regulations 2016 (EPR 2016).

The address of the waste treatment operation is:

Iver South Sludge Dewatering Centre,

Lakeside Road

Colnbrook

Buckinghamshire

SL3 0ED

Thames Water Utilities Limited (TWUL) operates a non-hazardous waste sludge treatment facility at the ISSDC. The treatment process comprises physio-chemical treatment by:

- sludge storage & balancing;
- maceration;
- polymer dosing; and
- centrifuge dewatering.

The sludge cake produced by the treatment process is transferred to storage bays within an enclosed barn for temporary storage. From here sludge cake is then removed by wagon for land treatment resulting in benefit to agriculture or ecological improvement.

ISSDC currently holds a standard rules (SR2008 No. 19) environmental permit (reference EPR/ DP3291SW) waste operation permit for recovery of waste at a sludge treatment works. On 14th December 2021 the Environment Agency (EA) issued a letter (reference EPR/DP3090SF) to TWUL providing information of standard rules permits changes and actions to take.

This application is made due to unchanged physico-chemical waste sludge treatment operations for recovery at ISSDC now requiring a bespoke waste operation environmental permit under the Environmental Permitting Regulations 2016 (as amended) (EPR). This is because standard rules permit SR2008 No. 19 has been consolidated into SR2021No.10. ISSDC does not meet qualifying criteria of the new consolidated SR permit. This includes (but not limited to) ISSDC is not described under EPR as a Part A(1) installation and that Anaerobic digestion of waste sludge is not undertaken at the facility. No other standard rules set is applicable for ISSDC.

The process has not significantly changed since EA issue of environmental permit EPR/DP3291SW in January 2009. Biological treatment is not undertaken at the facility.

In accordance with EA letter EPR/DP3090SF, pre-application advice (reference EPR/DP3291SW/V002) received from the EA on 14th April 2022 and under EA fees and charging scheme; this application is for a substantial variation to change the permit into a bespoke waste operation permit.

The application covers the physico-chemical treatment of sewage sludge, imported digested sludge from Mogden WwTW via pipeline, import of sludge from satellite Thames Water sites by tankers and contingency storage of sludge cake from satellite Thames Water sites.

Due to the non-flammable nature of wastes handled at the installation, the site falls outside the requirement to prepare and operate a fire prevention plan (FPP).

1.1 Non-Technical Summary

This application is to vary the extant standard rules permit (reference SR2008 No.19) to a new bespoke waste operation permit. SR2008 No.19 has been consolidated into SR2021 No.10 by the EA. An environmental permit is required for the physico-chemical treatment of non-hazardous waste sludge by:

- sludge storage & balancing
- Sludge maceration & polymer dosing
- centrifuge dewatering.
- temporary sludge cake storage for offsite land treatment resulting in benefit to agriculture or ecological improvement.

The facility currently accepts up to 1.56Mt of sludge per year. Waste sludge physico-chemical treatment is for the purposes of recovery only, which is not a listed activity under EPR Schedule 1 Part II Chapter 5. Therefore, the site requires a waste management level environmental permit.

The physico-chemical treatment of waste sludge includes treatment of imported digested sludges from Mogden WwTW via pipeline and from satellite TWUL sites by tankers. Sludge is pumped into two feed tanks, piped sludges are blended in the holding tank before passing on to the sludge treatment process where it is macerated, settled through action of polymer dosing, then dewatered through centrifuges. The produced sludge cake is stored in bays within an enclosed cake barn, prior to collection and removal from site for spreading to agricultural land. There is also contingency storage of sludge cake from satellite Thames Water sites. Separated liquor is pumped via pipeline for approximately 1 miles off site, then flows into the mains sewer to Mogden WwTW for full treatment through the urban waste water directive treatment processes.

The site is located approximately 1km North of the village of Colnbrook, Slough. ISSDC is approximately 40m from Old Slade Lake and 25m from Colne Brook. The permitted sludge processing site is towards the north west of a larger industrial area on Lakeside Road. To the north of the permitted site within 70m is the M4 motorway.

All tanks are constructed of materials suitable for the containment of wastewater sludges/ treatment raw materials and the sludge treatment/storage areas are completely impermeably surfaced and drained via a private drainage system that returns all drainage to a collection chamber.

The centrifuge feed tanks and the return pumping station chamber are covered and are extracted to an odour control unit. The centrifuges and storm tank chamber can also be sources of odour, are connected to the same odour control unit.

A 5.5MW backup generator provides power to the treatment plant in the event of mains power failure or running in parallel with mains power during peak lopping.

6 no. sludge holding tanks and a fully engineered, concrete base with plastic lined sides emergency sludge storage lagoon are installed on site and available for contingency sludge storage prior to treatment.

There are two emissions points to water from the site. One emission source is roof water drainage direct to Old Slade Lake. The second emission is from surface water run off from a pedestrian crossing island near to the admin office. This discharges into a land drain on the South Western boundary of the site. All other surface water drainage, in particular near to vehicle movements, pipelines and processing areas is transferred to Mogden WwTW for full treatment.

There are two point source emissions to air. One emission point is from a two stage odour control unit stack and the second emission point is for a 5.5MW backup generator exhaust.

2. Technical Description

Scope

The purpose of this Application Support Document (ASD) is to provide supplementary information to support an environmental permit (EP) variation application for the physico-chemical treatment of indigenous and imported wastewater (sewage) sludge at ISSDC. This application is being made under the Environmental Permitting (England and Wales) Regulations 2016 (EPR 2016).

ISSDC currently holds a standard rules (SR2008 No. 19) environmental permit (reference EPR/ DP3291SW) waste operation permit or recovery of waste at a water treatment works. On 14th December 2021 the Environment Agency (EA) issued a letter (reference EPR/DP3090SF - found within Appendix I) to TWUL providing information of standard rules permits changes and actions to take.

This application is made due to unchanged physico-chemical waste sludge treatment operations for recovery at ISSDC now requiring a bespoke waste operation environmental permit under the EPR 2016. This is because standard rules permit SR2008 No. 19 has been consolidated into SR2021No.10. ISSDC does not meet qualifying criteria of the new consolidated SR permit. This includes (but not limited) ISSDC is not described under EPR as a Part A(1) installation and that Anaerobic digestion of waste sludge is not undertaken at the facility. No other standard rules set is applicable for ISSDC.

The process has not significantly changed since EA issue of environmental permit EPR/DP3291SW in January 2009. Biological treatment is not undertaken at the facility.

In accordance with EA letter EPR/DP3090SF, pre-application advice (reference EPR/DP3291SW/V002) received from the EA on 14th April 2022 and under section 3.2.1 of the EA fees and charging scheme; this application is for a substantial variation to change the permit into a bespoke waste operation permit.

The facility currently accepts up to 1.56Mt of sludge per year. Physico-chemical treatment is undertaken at the site for recovery purposes only which is not a listed activity under Schedule 1 Part II Chapter 5 of EPR 2016. Therefore, the site requires a waste management level environmental permit.

Location

The site is located approximately 1km North of the village of Colnbrook, Slough. ISSDC is approximately 40m west of Old Slade Lake and 25m from the Colne Brook which runs from the north east to the south west of the site. The permitted sludge processing site is towards the north west of a larger industrial area on Lakeside Road. To the north of the permitted site within 70m is the M4 motorway and to the east is the M25 motorway.

Basic pre-application advice has been provided by the EA (reference EPR/ DP3090SF /V002) on 14 April 2022. This included a Nature and Heritage Conservation Screening Report generated by the EA. The screening report identifies a local wildlife site within 200m of the site (Old Slade Lake). European Eel protected species are also found in Old Slade Lake. The nearest watercourse is Colne Brook which is approximately 20m from the site at it's nearest point (southern boundary). The nearest source protection zoned area is 1.9km. There is no point source direct water discharge to the brook.

The site is not within an air quality management area.

There are records of protected fish located within the specified screening distance (within 500m) of the site associated with Colne Brook. This watercourse has been protected as migratory route for European Eel and Atlantic Salmon.

A site plan showing ISSDC permitted area can be found in Appendix A.1.

Waste Treatment and Processing

A process block diagram for the sludge treatment process is included at Appendix A.5.

An environmental permit is required for the physico-chemical treatment of non-hazardous waste sludge by:

- sludge storage & balancing
- Sludge maceration & polymer dosing
- centrifuge dewatering.
- temporary sludge cake storage for offsite land treatment resulting in benefit to agriculture or ecological improvement.

The facility currentlyaccepts up 1.56Mt of sludge per year. The facility has 24/7 365 day planned mode of operation.

Digested sludge is piped from Mogden WwTW through one of three concrete pipelines. The incoming pipelines are directed to 2 no. centrifuge feed tanks. In addition, digested sludge is imported from other satellite TWUL sites to ISSDC by tanker to the sludge reception area. This area is comprised of a bauer connection coupling point to the 2 no. centrifuge feed tanks. These tanks provide approximately 36 hours of storage. Tanks operate in parallel as well as providing buffering capacity for downstream treatment. Each tank has a dedicated pump recirculating sludge from the bottom through 6 no. nozzles whilst also injecting air. The air mixing provides improved sludge mixing to avoid anoxic zones within the sludge. There are 3 no. blowers (d/d/s basis) serving both tanks through a common manifold. The mixing system is controlled by sludge level and 'periodic' mixing. The tanks are fitted with level detectors and high level float switch.

There is also contingency sludge storage installed on site and available for additional sludge storage prior to treatment if required. This consists of 6 no. sludge holding tanks, an emergency sludge storage lagoon, connecting pipework and pumping capabilities.

From the 2 no. centrifuge feed tanks, sludge is pumped from a central main feed up to 4 no. dewatering process streams. The four dewatering streams operate on a duty/ assist 1 / assist 2/ assist 3 arrangement. Each Stream consists of an inlet valve, macerater, pump, flowmeter, decanter centrifuge and solids conveyor. Dewatering plant & equipment is installed within the main processing building. Sludge compliance sample points are located on the centrifuge feed pumps.

Polymer make-up is in 2 no. package plants. They operate on a duty/duty/flip flop basis. Each polymer preparation stream consists of an integral storage unit, powder transfer system and two combined mixing and storage tanks. 4 no. cavity pumps draw polymer from the bulk storage and deliver it to the 4 no. dewatering streams. Polymer dilution pumps take water from a washwater balance tank and dilute the polymer prior to dosing, to improve dispersion.

The washwater balance tank is feed by a combination of potable (backup) or borehole abstracted water to site hydrants, polymer plant, the odour control unit irrigation, dewatering plant and the HGV wheel wash facility. The tank feeds a booster set package plant for distribution to the different processes. Pumps operate on a duty/assist/standby basis.

Sludge cake collected from centrifuge treatment is transferred by covered conveyor from the dewatering building to an external impermeable concrete pad cake unloading area. From here its is then moved by Loading shovel to storage bays in a dedicated indoor cake storage building pending collection.

Sludge cake is loaded from storage bays into tipper trucks and covered, where the permitted activities end. Cake is transported offsite for application to land in accordance with the Sludge (Use in Agriculture) Regulations (SUiAR) and Biosolids Assurance Scheme (BAS).

Centrate separated from centrifuge dewatering treatment is dosed with antifoaming agent by a pump prior to discharging into a stilling tank beneath each centrifuge.

From the stilling tanks, centrate is pumped into the return pumping station chamber. The centrate is combined with flows from:

- site surface water drainage and tank rainwater from the storm water pumping station chamber
- dewatering building foul sewer
- Urban wastewater treatment directive (UWWTD) flows (Lakeside road pumping station, Colnbrook pumping station and Richings Park sewer)

From the return pumping station chamber, centrate flows are pumped to sewer for full treatment at Mogden WwTW.

There are 6 no. open topped sludge storage tanks available on site for contingency storage in the event of centrifuge feed tanks being full, or the sludge at Mogden WwTW being non-compliant with BAS standards. Each tank allows approximately 18 hours of storage for sludge at 3% dry solids. All tanks are fitted with a pump to transfer sludge into the centrifuge feed tanks. The pumps can also transfer tank collected rainwater into the drainage system (onto the return pumping station). The tanks are fitted with air mixing systems. 2 No. air blowers are installed for a pair of tanks and operate on a duty/standby basis. Pairs of tanks are connected by an overflow, tank 1 with 2, 3 with 4 and 5 with 6. Tanks fill in the sequence 1, 3, 5, 2, 4, 6 to minimise risks associated with the tank overflows. The filling and emptying of tank pairs is conducted automatically. Emptying the tanks is done sequentially on a first in and first out basis. If tanks are used for non-compliant sludge with BAS standards, the system will shut in a tank for a set period of time until sufficient pathogen kill has been achieved.

In the event of failure of the sludge dewatering plant and all the sludge storage tanks & centrifuge feed tanks are full, sludge is diverted to a concrete based and HDPE lined emergency sludge storage lagoon. Storage capacity is equivalent to 5.5 days storage of incoming sludge at 3%. Manually controlled temporary pumps are available on site to provide sludge return to the centrifuge feed tanks.

A two stage odour control unit (OCU) is installed at the site for treating higher odour risk air streams. The OCU consists of an enclosed MONASHELL irrigation bed biofilter and x2no. carbon filtration polishing vessels, released via a stack. The OCU treats extracted air from:

- 2 no. centrifuge feed tanks
- Storm tank pumping station chamber
- Return pumping station chamber

A 5.5MWdiesel backup generator is located on the site. This is a backup unit only

An emission points plan showing all emission points to air, water and sewer can be seen in appendix A.3.

Photographs of ISSDC plant, equipment and infrastructure can be seen in appendix A.6.

Site Containment & Drainage Infrastructure

The site layout is shown in Appendix A.2. The plan shows the locality of plant, equipment and containment infrastructure at the site.

The site waste treatment areas are constructed of impermeable hardstanding and bordered by impermeable kerbing with sealed joints. The fall of the hardstanding in these areas is towards the site drains. The drainage system across the whole works is a contained one where water is pumped back by a pumping station through a dedicated concrete pipeline to Mogden STW for full treatment through the UUWTD route.

Table 1 below summarises main containment vessels on site, their construction material and capacity.

Tank Purpose	Number of storage facilities	Design and material of tank construction	Capacity of each tank (m^3)
Centrifuge Feed Tanks	2	Covered concrete vessel, partly underground	2125m^3

Sludge holding tanks	6	Concrete vessel partly underground	2125m³
Emergency sludge lagoon	1	Concrete lined reservoir	15500m³
Diesel fuel tank	1	Steel	60 m³
Daily service diesel tank	1	Steel	1.8m³
Antifoam Dosing	1	Composite steel and plastic	1m³
Washwater tank	1	Steel	120m³
Storm water pumping station	1	Covered concrete, partly underground	1650m³
Polymer Powder Internal Storage Unit	2	Steel vessels	15 m³

A site drainage plan is provided at Appendix A.4.

The emergency backup diesel generator fuel tank is provided with secondary containment of 110%.

Pre-acceptance, Acceptance and Storage of Waste

The site is a dedicated treatment plant for a single waste stream (sewage sludge) produced only by TWUL at Mogden WwTW (via pipeline) and satellite TWUL sites delivered to ISSDC by tankers.

TWUL's sludge streams are well known and have been characterised over the years. Imported sludge arriving at the site via pipeline from Mogden WwTW, transferred via a pumping chamber, has known sludge volumes pumped into centrifuge feed tanks.

TWUL's pre-acceptance process includes routine weekly sludge samples taken at Mogden WwTW to check for compliance.

For tankered sludge transferred to the sludge reception area, the delivery of material is by pre-arranged method only with maximum vehicle (tanker) volumes being specified at the outset. Data on the volume of non-residual sludge waste is taken per load and stored in the site office. Closed circuit television cameras (CCTV) are located at the sludge reception areas to monitor unloading activities and to provide additional security.

The tanker discharge point has a WaSP system that doesn't allow discharge unless the tanker driver has the correct access fob. As well as allowing the discharge to take place, the driver has to enter details such as name, registration number and sludge source, these records are kept as part of the duty of care compliance.

Waste Codes

The maximum quantity of waste to be accepted at the site is less than 1.56Mt tonnes a year.

TWUL's environmental management system ensures waste is only treated if it conforms to the description in the documentation supplied by the waste producer and holder.

The only EWC waste codes permitted within the extant environmental permit to be accepted at the facility are:

19 WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION/INDUSTRIAL USE	
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)

19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only)
19 08 05	sludges from treatment of urban waste water

Process Controls

Many operations are monitored automatically from the MCC panels at the site and outside of normal operational hours, from the regional control centre. The SCADA system comprises on server/client PC and one redundant server/client PC situated in the control room, two client LOP "Versa views" situated in the MCC2 kiosk and the main MCC room, and a further client situated at Mogden WwTW.

Operation and throughput of the centrifuges are controlled to maintain thickened sludge concentration within set design parameters. The centrifuge sludge feed, thickened sludge and tanker sludge loading all have flow meters, displayed locally in the sludge handling building (with totalisers) and on SCADA for instantaneous display. Centrifuge sludge feed is also trended.

Site operations are covered by Thames Water's management system, including the preventative maintenance programme for the site.

Site Boundary

This variation does not propose any change in permitted area to what is already listed in the extant permit. ISSDC remains a waste operation with the same waste treatment undertaken as already assessed for the extant permit. Consequently, there is no requirement to provide a site condition report with this application.

Odour

The facility has an odour management plan which is supplied as Appendix C.

Bioaerosols

Sludge cake at the ISSDC site is stored within a covered cake barn. See Appendix D for the site specific bioaerosol risk assessment.

Other Risk Assessments

There is no requirement for a fire prevention plan, due to the nature of the wastes treated at the site and the processes utilised, in accordance with Environment Agency guidance.

2.1 Regulatory listing

The ISSDC site is currently permitted as a waste operation under EPR. Regulated activities are listed in the table 3 below:

Table 3 – ISSDC Regulated Activities

Reference	Description of Activities	Limits of Activities
1	R03: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)	Treatment consisting only of blending, mixing, separation, thickening and/or compaction of waste for recovery.

2	R13 - Storage of wastes pending any of the operations numbered R01 to R12 (excluding temporary storage pending collection on the site where it is produced).	
3	D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)	

Regulated activities include:

- Imports of waste sludge, including sludge from other sludge treatment centres
- Blending and balancing of imported wastes/waste sludges prior to treatment;
- Storage of waste sludge prior to treatment;
- Dewatering of digested sewage sludge by maceration, polymer dosing and centrifuge;
- Transfer of dewatering liquors via site drainage to pumping station for treatment offsite via pipeline transfer.
- Transfer of surface water run-off via site drainage to pumping station for treatment offsite via pipeline transfer.
- Storage of dewatered digested sludge cake in a dedicated building prior to offsite recovery;
- Storage of waste
- Storage of raw materials

3. Form A1 Questions

Application for an environmental permit Part A – About you

You will need to fill in this part A if you are applying for a new permit, applying to change an existing permit or surrender your permit, or want to transfer an existing permit to yourself. Please check that this is the latest version of the form available from our website.

You can apply online for Waste standard rules environmental permits, bespoke waste permits and bespoke Medium combustion plant permits

Apply online for an environmental permit.

Please read through this form and the guidance notes that came with it.

The form can be:

1) **saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.**
2) **printed off and filled in by hand. Please write clearly in the answer spaces.**

Note: if you believe including information on a public register would not be in the interests of national security you must enclose a letter telling us that you have told the Secretary of State. We will not include the information in the public register unless directed otherwise.

It will take less than one hour to fill in this part of the application form.

Where you see the term 'document reference' on the form, give the document references and send the documents with the application form when you've completed it.

Contents

1 About you

Are you applying as an individual, an organisation of individuals (for example, a partnership), a company (this includes Limited Liability Partnerships) or a public body?

An individual	☐ Now go to section 2 and if you are applying for a new permit or transferring a permit for an installation or waste activity please also fill in Appendix 1
An organisation of individuals (for example, a partnership)	☐ Now go to section 3 and if you are applying for a new permit or transferring a permit for an installation or waste activity please also fill in Appendix 1
A public body	☐ Now go to section 4
A registered company or other corporate body	☑ Now go to section 5 and if you are applying for a new permit or transferring a permit for an installation or waste activity please also fill in Appendix 1

2 Applications from an individual

2a Please give us the following details

Name

Title (Mr, Mrs, Miss and so on) _____

First name _____

Last name _____

Now go to section 6

3 Applications from an organisation of individuals or charity

3a Type of organisation

For example, a charity, a partnership, a group of individuals or a club

3b Details of the organisation or charity

If you are an organisation of individuals, please give the details of the main representative below. If relevant, provide details of other members (please include their title Mr, Mrs and so on) on a separate sheet and tell us the document reference you have given this sheet

Contact name

Title (Mr, Mrs, Miss and so on)

First name

Last name

Now go to question 3c or section 6

3c Details of charity

Full name of charity

This should be the full name of the legal entity not any trading name.

3d Company registration number

If you are registered with Companies House please tell us your registration number

3e Charity Commission number

If you are registered with the Charity Commission please tell us your registration number

Now go to section 6

4 Applications from public bodies

4a Type of public body

For example, NHS trust, local authority, English county council

4b Name of the public body

4c Please give us the following details of the executive

An officer of the public body authorised to sign on your behalf

Name

Title (Mr, Mrs, Miss and so on)

First name

Last name

Position

Now go to section 6

5 Applications from companies or corporate bodies

5a Name of the company

Thames Water Utilities Limited

5b Company registration number

02366661

Date of registration (DD/MM/YYYY)

01/04/1989

If you are applying as a corporate organisation that is not a limited company, please provide evidence of your status and tell us below the reference you have given the document containing this evidence.

Document reference

n/a

5 Applications from companies or corporate bodies, continued

5c Please give details of the directors

If relevant, provide details of other directors and company secretary, if there is one, on a separate sheet and tell us the reference you have given this sheet.

Document reference: Please see application support document section 3

Details of company secretary (if relevant) and director/s

Title (Mr, Mrs, Miss and so on):

First name:

Last name:

Title (Mr, Mrs, Miss and so on):

First name:

Last name:

Now go to section 6

6 Your address

6a Your main (registered office) address

For companies this is the address on record at Companies House.

Contact name

Title (Mr, Mrs, Miss and so on): Mr

First name: Nick

Last name: Lutt

Address: Clearwater Court
3rd Floor - East
Vastern Road
Reading

Postcode: RG1 8DB

Contact numbers, including the area code

Phone: 07747640438

Fax:

Mobile: 07747640438

Email: nick.lutt@thameswater.co.uk

For an organisation of individuals every partner needs to give us their details, including their title Mr, Mrs and so on. So, if necessary, continue on a separate sheet and tell us below the reference you have given the sheet.

Document reference:

6b Main UK business address (if different from above)

Contact name

Title (Mr, Mrs, Miss and so on):

First name:

Last name:

Address:

Postcode:

6 Your address, continued

Contact numbers, including the area code

Phone

Fax

Mobile

Email

Now go to section 7

7 Contact details

7a Who can we contact about your application?

It will help us if there is someone we can contact if we have any questions about your application. The person you name should have the authority to act on your behalf.

Please add a second contact on a separate sheet if this person is not always available.

Document reference of this separate sheet

This can be someone acting as a consultant or an 'agent' for you.

Contact name

Title (Mr, Mrs, Miss and so on): Mr

First name: Alex

Last name: Wilson

Address: Jacobs UK
First Street
Manchester

Postcode: M15 4GU

Contact numbers, including the area code

Phone: 07805604167

Fax

Mobile: 07805604167

Email: alexander.wilson@jacobs.com

7b Who can we contact about your operation (if different from question 7a)?

Contact name

Title (Mr, Mrs, Miss and so on): Mr

First name: Nick

Last name: Lutt

Address: Clearwater Court
3rd Floor - East
Vastern Road
Reading

Postcode: RG1 8DB

Contact numbers, including the area code

Phone: 07747640438

Fax

Mobile: 07747640438

Email: nick.lutt@thameswater.co.uk

7 Contact details, continued

7c Who can we contact about your billing or invoice?

Note: Please provide the name and address that all invoices should be sent to for your subsistence fees.

As in question 7a ☐

As in question 7b ☑

Please give details below if different from question 7a or 7b.

Contact name

Title (Mr, Mrs, Miss and so on)

First name

Last name

Address

Postcode

Contact numbers, including the area code

Phone

Fax

Mobile

Email

8 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422 549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, please tell us how we can improve it. More information on how to do this is available at: www.gov.uk/government/organisations/environment-agency/about/complaints-procedure.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

9 Where to send your application

For how many copies to send see the guidance note on part A.

For water discharges by email to PSC-WaterQuality@environment-agency.gov.uk

For waste and installations by email to PSC@environment-agency.gov.uk

For flood risk activity permits send 1 copy only to enquiries@environment-agency.gov.uk or to the local Environment Agency office for where the work is proposed to be carried out.

Or

Permitting Support, NPS Sheffield
Quadrant 2
99 Parkway Avenue
Parkway Business Park
Sheffield
S9 4WF

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

Crystal Mark 19101
Clarity approved by Plain English Campaign

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

No ☐

Yes ☐ Amount received

£

Appendix 1 – Date of birth information for installation and waste activities (applications for a new permit or transferring a permit) only

Date of birth information in this appendix will not be put onto our Public Register

Are you applying as an individual, an organisation of individuals (for example, a partnership) or a company (this includes Limited Liability Partnerships)?

An individual	☐ Now go to 2
An organisation of individuals (for example, a partnership)	☐ Now go to 3
A registered company or other corporate body	☑ Now go to 4

2 Applications from an individual

Please give us the following details

Name

Date of birth (DD/MM/YY)

3 Applications from an organisation of individuals or charity

Details of the organisation or charity

If you are an organisation of individuals, please give the date of birth details of the main representative below. If relevant, provide details of other members on a separate sheet and tell us the document reference you have given this sheet.

Name

Date of birth (DD/MM/YY)

Document reference

4 Applications from companies or corporate bodies

Name of the company: Thames Water Utilities Limited

Please give the date of birth details for all directors and company secretary if there is one. If relevant, provide those details of other directors on a separate sheet and tell us the document reference you have given this sheet.

Details of company secretary (if relevant) and director/s

Name: See Information provided directly to the Environment Agency

Date of birth (DD/MM/YY)

Name

Date of birth (DD/MM/YY)

Name

Date of birth (DD/MM/YY)

Document reference

Application for an environmental permit Part C4 – Varying a bespoke waste operation permit

Fill in this part of the form, together with parts A, C2 and F1, if you are applying to vary (change) the conditions or any other part of the permit. Please check that this is the latest version of the form available from our website.

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or making changes to existing ones).

You do not need to resend any information from your original permit application if it is not affected by your proposed changes.

Please read through this form and the guidance notes that came with it.

The form can be:

1) saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.
2) printed off and filled in by hand. Please write clearly in the answer spaces.

It will take less than three hours to fill in this part of the application form.

Contents

1 What waste operations are you applying to vary?

Fill in Table 1a with details of what you are applying to vary.

Fill in a separate table for each waste operation you are applying to vary. Use a separate sheet if you have a long list and send it to us with your application form. Tell us below the reference you have given this document.

Document reference: Please see Application Support Doc. Chapter 5

Types of waste accepted

For each line in Table 1a, fill in a separate document to list those wastes you will accept on the site for that operation, giving the List of Wastes catalogue code (search for 'Technical guidance on how to assess and classify waste' at www.gov.uk/government/organisations/environment-agency). If you need to exclude waste from your activity or facility by restricting the description, quantity, physical nature, hazardous properties, composition or characteristic of the waste, include these in the document. Send it to us with your application form.

1 What waste operations are you applying to vary?, continued

Table 1a – Waste operations which do not form part of an installation

Name of the waste operation	Description of the waste operation	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity (if this applies) (See note 1)	Non-hazardous waste treatment capacity (if this applies) (See note 1)
Add extra rows if you need them. If you do not have enough room, go to the line below or send a separate document and give us the document reference here	Use the description from the guidance. Include any extra detail that you think would help to accurately describe what you want to do			
Please see Application Support Document, Chapter 5 and table C3-1a				
For all waste operations	Total storage capacity (see note 2)			
	New total if varying to increase			
	Annual throughput (tonnes each year)			
	New total if varying to increase			

1 What waste operations are you applying to vary?, continued

Notes

1 By 'capacity', we mean:

- the total landfill capacity (cubic metres) for landfills
- the total treatment capacity (tonnes each day) for waste treatment
- the total storage capacity (tonnes) for waste-storage operations

2 By 'total storage capacity', we mean the maximum amount of waste in tonnes you store on the site at any one time.

Please provide the document reference. You can use Table 1b as a template.

If you want to accept any waste with a code ending in 99, you must provide more information and a full description of the waste in the document, (for example, detailing the source, nature and composition of the waste). Where you only want to receive specific wastes within a waste code you can provide further details of the waste you want to receive. Where a waste is dual coded you should use both codes for the waste.

Document reference: Please see Application Support Doc. Chapter 5

Table 1b – Template example – types of waste accepted and restrictions

Waste code	Description of the waste
Example	Example
02 01 08*	Agrochemical waste containing hazardous substances
18 01 03*	Infectious clinical waste, not contaminated with chemicals or medicines – human healthcare (may contain sharps) for alternative treatment
17 05 03*/17 06 05*	Non-hazardous soil from construction or demolition contaminated with fragments of asbestos cement sheet

1c Deposit for recovery purposes (see the guidance notes on part C4)

Are you applying for a waste recovery activity involving the permanent deposit on waste on land for construction or land reclamation (including landfill restoration)?

No ☑ Go to section 2

Yes ☐

Are you applying for an inert landfill permit that includes a restoration activity using waste?

No ☐ Go to section 2

Yes ☐ Please send us a copy of your restoration plan in accordance with our guidance at https://www.gov.uk/guidance/landfill-operators-environmental-permits/restore-your-landfill-site

Have we advised you during pre-application discussions that we believe the activity is waste recovery?

No ☐ Go to section 2

Yes ☐

Have there been any changes to your proposal since the discussions?

No ☐

Yes ☐

Please send us a copy of your waste recovery plan that complies with our guidance at https://www.gov.uk/guidance/waste-recovery-plans-and-permits. You need to highlight any changes you have made since your pre-application discussions. Also give us the reference number of the document with your justification.

Please note that there is an additional charge for the assessment of a waste recovery plan that must be submitted as part of this application. For the charge see https://www.gov.uk/topic/environmental-management/environmental-permits.

Document reference

2 Point source emissions to air, water and land

Fill in Table 2 below with details of the point source emissions that result from the operating techniques at each of your waste operations.

Fill in one table for each waste facility.

Table 2 – Emissions

Name of the waste operation				
Point source emissions to air				
Emission point reference and location	Source	Parameter	Quantity	Unit
Please see Application Support Document, Ch				
Point source emissions to water (other than sewers)				
Emission point reference and location	Source	Parameter	Quantity	Unit
Please see Application Support Document, Ch				
Point source emissions to sewers, effluent treatment plants or other transfers off site				
Emission point reference and location	Source	Parameter	Quantity	Unit
Please see Application Support Document, Ch				
Point source emissions to land				
Emission point reference and location	Source	Parameter	Quantity	Unit

Supporting information

3 Operating techniques

3a Technical standards

Fill in Table 3a for each waste operation you refer to in Table 1a above and list the 'appropriate measures' you are planning to use. If you are using the standards set out in the relevant technical guidance(s) (TGN) there is no need to justify using them within your documents in Table 3a.

You must justify your decisions in a separate document if:

- there is no technical standard
- the technical guidance provides a choice of standards, or
- you plan to use another standard

This justification could include a reference to the Environmental Risk Assessment provided in part C2 of the application form.

Table 3a should summarise:

- the operations undertaken
- the measures you will use to control the emissions from your process, as identified in your risk assessment or the relevant technical guidance
- how you will meet other standards set out in the relevant technical guidance

Table 3a – Technical standards

Fill in a separate table for each waste operation.

Waste operation		
Description of the waste operation Add extra rows if you need them	Appropriate measure (TGN reference)	Document reference (if appropriate)
Please see Application Support Document, Ch		

In all cases, describe the type of facility or operation you are applying for and provide site infrastructure plans, location plans and process flow diagrams or block diagrams to help describe the operations and processes undertaken. Give the document references you use for each plan, diagram and description.

Document reference: Please see Application Support Document, Appendix A

3b General requirements

Fill in a separate table for each waste operation.

Table 3b – General requirements

Name of the waste operation	
If the technical guidance or your risk assessment shows that emissions of substances not controlled by emission limits are an important issue, send us your plan for managing them	Document reference or references Please see Application Support Document, Ch
If the technical guidance or your risk assessment shows that odours are an important issue, send us your odour management plan. **If your activity type is listed in the guidance document 'Control and monitor emissions for your environmental permit' as needing an odour management plan, or your risk assessment shows that odours are an important issue, you need to send us your odour management plan.**	Document reference or references Please see Application Support Document, Chapter 5 3b and Appendix C Odour Management Plan
If the technical guidance or your risk assessment shows that noise or vibration are important issues, send us your noise or vibration management plan (or both)	Document reference or references Please see Application Support Document, Ch

3 Operating techniques, continued

We may need to ask for management plans or risk assessments in other circumstances based on our regulatory experience. If you are unsure as to whether you need to submit a management plan with your application, please discuss this with the Environment Agency prior to submission.

Search for 'Risk assessment for your environmental permit' at www.gov.uk/government/organisations/environment-agency.

3c Information for specific sectors

For some of the sectors, we need more information to be able to set appropriate conditions in the permit. This is as well as the information you may provide in sections 5, 6 and 7. For those activities listed in Table 3c, you must answer the questions in the related document.

Table 3c – Questions for specific sectors

Sector	Appendix
Recovery to land for agricultural benefit of compost like outputs from the treatment of mixed municipal solid wastes	See the questions in appendix 1
Inert landfill and deposit of waste on land for construction, land reclamation, restoration or improvement	See the questions in appendix 2

General information

4 Monitoring

4a Describe the measures you use for monitoring emissions by referring to each emission point in Table 2 above

You should also describe any environmental monitoring. Tell us:

- how often you use these measures
- the methods you use
- the procedures you follow to assess the measures

Document reference: Please see Application Support Document, Chapter 5 Qu 4

4b Point source emissions to air only

Provide an assessment of the sampling locations used to measure point source emissions to air. The assessment must use M1 (search for 'M1 sampling requirements for stack emission monitoring' at www.gov.uk/government/organisations/environment-agency).

Document reference of the assessment: Please see Application Support Document, Chapter 5 Qu 4

5 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422 549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, please tell us how we can improve it.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

No ☐

Yes ☐ Amount received

£

Plain English Campaign's Crystal Mark does not apply to appendices 1 to 2.

Appendix 1 – Specific questions for the recovery to land for agricultural benefit of compost like outputs from the treatment of mixed municipal solid wastes

1 Please provide an accurate and reliable characterisation of your compost like outputs (CLO). This should be based on sampling and analysis of the CLO produced by the treatment (MBT) process over a 12-month period and in accordance with section 2 of TGN 6.15

Document reference

2 Please provide an agricultural benefit assessment for the use of your CLO. This should be based on section 2 of TGN 6.15 and should be signed and dated by an appropriate technical expert

Document reference

3 Please provide a site-specific risk assessment of risks to soil and food chain receptors. This should be based on Schedule 2 of TGN 6.15 and include a map with a green outline showing the boundary of the area being treated and include:

- locations where the waste will be stored and spread
- any spring, well or borehole used to supply water for domestic or food production purposes that is within 250 metres of the area being treated
- any spring, well or borehole not being used for domestic or food production purposes that is within 50 metres of the area being treated
- any European designated sites (candidate or Special Area of Conservation, proposed or Special Protections Area in England and Wales or Ramsar Site) or Sites of Special Scientific Interest (SSSI) which are within 500 metres of the place where waste is to be stored or spread
- the location of public rights of way
- any Groundwater Source Protection Zones
- surface watercourses
- any buildings or houses within 250 metres of the area being treated
- land drains within the boundary

Document reference

4 Are the technical standards and measures fully in line with those set out in section 3 of TGN 6.15?

No ☐ Provide justification for departure from TGN 6.15 and a copy of the proposed technical standards, measures or procedures

Document reference

Yes ☐

Appendix 2 – Specific questions for inert waste landfill and deposit for recovery operations

1 Please provide your Environmental Setting and Site Design (ESSD) report

Document reference

Note: You should use the Environment Agency template to help you develop an environmental setting and site design (ESSD) report.

2 Please provide your Waste Acceptance Procedures (including Waste Acceptance Criteria)

Document reference

3 Have you provided a hydrogeological risk assessment (HRA) for the site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ Document reference

4 Have you completed an outline engineering plan for the site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ Document reference

5 Have you provided a stability risk assessment (SRA) for your site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ Document reference

Appendix 2 – Specific questions for inert waste landfill and deposit for recovery operations, continued

6 Have you completed a monitoring plan for the site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ Document reference

7 Have you completed a plan for closing the site and procedures for looking after the site once it has closed?

No ☐ If no for deposit for recovery activities please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ For inert waste landfill you must provide a closure plan

Document reference

Spreading waste to support plant growth

8a Does the activity involve the deposit of waste to create or treat a growing medium (R10 for land treatment)?

No ☐

Yes ☐

8b If you answered 'yes' to question 8a, does the R10 activity include the spreading of waste to improve the quality of the growing medium (e.g. soil conditioner to improve existing soil profile)?

No ☐

Yes ☐ Go to question 8c

8c If you have answered 'Yes' to question 8b, have you completed a benefit statement?

No ☐ Please explain why

Document reference

Yes ☐

Note: Refer to our guidance when completing your statement (including EPR 8.01, section 6).

Application for an environmental permit
Part C2 – General – varying a bespoke permit

Environment Agency

Fill in this part of the form, together with part A and the relevant parts of C3 to C7 and part F1 or F2, if you are applying to vary (change) the conditions or any other part of the permit. Please check that this is the latest version of the form available from our website.

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or changing existing ones).

Waste operation changing to installation or vice versa?

If your changes mean that a waste operation becomes an installation (or vice versa) you also need to fill in either part C3 (waste to installation) or part C4 (installation to waste).

You do not need to resend any information from your original permit application if it is not affected by your proposed changes.

Please read through this form and the guidance notes that came with it.

The form can be:

1) saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.
2) printed off and filled in by hand. Please write clearly in the answer spaces.

It will take less than two hours to fill in this part of the application form.

Contents

1 About the permit

Note: If you are applying to convert your existing permit to a standard permit or add a standard facility you need to fill out form C1.

1a Discussions before your application

If you have had discussions with us before your application, give us the permit reference or details on a separate sheet. Tell us below the reference you have given this extra sheet.

Permit or document reference: EPR/DP3090SF/V002

1b Permit number

What is the permit number that this application relates to? EPR/DP3090SF

1c Site details

What is the name, address and postcode of the site?

Site name: Iver South Sludge Treatment Works

Address: Lakeside Road
Colnbrook
Buckinghamshire

Postcode: SL3 0ED

2 About your proposed changes

2a Type of variation

What type of variation are you applying for?

Minor technical ☐
Normal variation ☐
Substantial ☑

2 About your proposed changes, continued

2b Changes or additions to existing activities

Please give us brief details in the box below. More detailed information can be given in Table 1 below.

Please see application support document 'Environmental Permit Variation Application - 'Iver South Sewage Treatment Works' This is a change of permit type from standard rules permit to a bespoke waste operation permit. ISTW does not meet qualifying criteria of the new consolidated SR 2021 No.10 permit. This includes (but not limited) ISTW is not described under EPR as a Part A (1) installation and that Anaerobic digestion of waste sludge is not undertaken at the facility. No other standard rules set is now applicable for FWTW. The process has not significantly changed since EA issue of environmental permit EPR/ DP3090SF in November 2010. Biological treatment is not undertaken at the facility.

Fill in Table 1 with details of all the proposed changes to current activities. In the final column of the table, give us the document reference for the proposed changes and send them to us with your filled in application form.

Fill in a separate table for each activity you are applying to vary or add. Use a separate sheet if you have a long list and send it to us with your application form. Tell us below the reference you have given this document.

Document reference: Please see application support document, Chapter 4

You only need to fill in one table for your mining waste operations.

2c Consolidating (combining) or updating existing permits

If your proposed change is to modernise (update) your permit, now answer 2c1; otherwise go to 2d.

If your proposed change is to consolidate (combine) a number of permits, now answer 2c2; otherwise go to 2d.

Note: In both cases we may require additional information from you about, for example, your management system. Therefore we would always advise you to talk to us before you submit any application to modernise or consolidate permits.

2c1 Do you want to have a modern style permit?

No ☐

Yes ☑

2c2 Identify all the permits you want to consolidate (combine) by listing the permit numbers in Table 2 below

Table 2 – Permit numbers

EPR/DP3090SF

2d Treating batteries

2d Are you proposing to treat batteries?

No ☑

Yes ☐ Tell us how you will do this and send us a copy of your explanation and tell us below the reference you have given this explanation

Document reference for the explanation

2e Ship recycling

2e1 Is your activity covered by the Ship Recycling Regulations 2015? (See the guidance notes on part C2.)

No ☑

Yes ☐ Tell us how you will do this. Please send us a copy of your explanation and your facility recycling plan, and tell us below the reference numbers you have given these documents

Document reference for the explanation

Document reference for the facility recycling plan

2e2 Is this a renewal of an existing authorisation covered by the Ship Recycling Regulations 2015?

No ☑

Yes ☐ Tell us the expiry date of your existing authorisation (DD/MM/YYYY)

2 About your proposed changes, continued

Table 1 – Changes to existing activities

Fill in Table 1 with details of all the proposed changes to current activities. In the final column of the table, give us the document reference for the proposed changes and send them to us with your filled in application form.

Name	Installation schedule 1 references	Description of the installation activity	Description of waste operation	Description of the mining waste operations	Description of water discharge activity	Description of groundwater activity	Proposed changes document reference
i.e. name of installation, waste operation, mining waste operation, water discharge activity or groundwater activity							
Example – effluent unique name					Example – treated sewage effluent		
If you do not have enough room, go to the line below or send a separate document and give us the document reference here							
Iver South Sludge Trea			See application support				

2 About your proposed changes, continued

2f Low impact installations (installations only)

2f1 Will any changes mean that any of the regulated facilities will become low impact installations?

No ☐ Now go to section 3

Yes ☐ If yes, tell us how you meet the conditions for a low impact installation (see the guidance notes on part C2 – Appendix 1)

Document reference

Tick the box to confirm you have filled in the low impact installation checklist in appendix 1 for each regulated facility ☐

3 Your ability as an operator

If you are applying to add waste installations or waste operations to a permit that has not previously had them, you need to fill in all of section 3.

If you are applying to consolidate (combine) two or more permits or have an updated permit you must fill in question 3d.

This section does not apply for applications to surrender a permit.

3a Relevant offences

Installations and waste operations only (see the guidance notes on part C2).

3a1 Have you, or any other relevant person, been convicted of any relevant offence?

No ☐ Now go to question 3b

Yes ☑ Please give details below

Name of the relevant person

Title (Mr, Mrs, Miss and so on)

First name: Please see Application Support Document Chapter 4 Qu 3a1

Last name

Position held at the time of the offence

Name of the court where the case was dealt with

Date of the conviction (DD/MM/YY)

Offence and penalty set

Date any appeal against the conviction will be heard (DD/MM/YYYY)

If necessary, use a separate sheet to give us details of other relevant offences and tell us below the reference number you have given the extra sheet.

Document reference: Please see Application Support Document Chapter 4 Qu 3a1

Now go to question 3b

Please also complete the details in Appendix 2.

3b Technical ability

Specified waste management activities and waste operations only (see the guidance notes on part C1).

Please indicate which of the two schemes you are using to demonstrate you are technically competent to operate your facility and the evidence you have enclosed to demonstrate this.

ESA/EU skills

I have enclosed a copy of the current Competence Management System certificate ☐

CIWM/WAMITAB scheme

Please select **one** of the following:

- I have enclosed a copy of:
  - the relevant qualification certificate/s ☑

  or
  - evidence of deemed competence ☐

  or

3 Your ability as an operator, continued

- Environment Agency assessment ☐

or

- evidence of nominated manager status under the transitional provisions for previously exempt activities ☐

and, if deemed competent or Agency-assessed, or if there is evidence of a nominated manager, or if the original qualification is over two years old:

I have enclosed a copy of the relevant current continuing competence certificate/s ☐

For each technically competent manager please give the following information. If necessary, use a separate sheet to give us these details and tell us below the document reference you have given the extra sheet.

Title (Mr, Mrs, Miss and so on) Mr

First name Graham

Last name Hills

Phone

Mobile

Email

Please provide the environmental permit number/s and site address for **all** other waste activities that the proposed technically competent manager provides technical competence for, including permits held by other operators. Continue on a separate sheet as required.

Permit number	Site address	Postcode

Document reference

Now go to question 3c

Please also complete the details in Appendix 2.

3c Finances

Installations, waste operations and mining waste operations only (see the guidance notes on part C2).

Please note that if you knowingly or carelessly make a statement that is false or misleading to help you get an environmental permit (for yourself or anyone else), you may be committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

Do you or any relevant person or a company in which you were a relevant person have current or past bankruptcy or insolvency proceedings against you?

No ☑

Yes ☐ Please give details below, including the required set-up costs (including infrastructure), maintenance and clean up costs for the proposed facility against which a credit check may be assessed

We may want to contact a credit reference agency for a report about your business's finances.

3 Your ability as an operator, continued

Landfill, Category A mining waste facilities and mining waste facilities for hazardous waste only

How do you plan to make financial provision (to operate a landfill or a mining waste facility you need to show us that you are financially capable of meeting the obligations of closure and aftercare)?

Renewable bonds ☐

Cash deposits with the Environment Agency ☐

Other – provide comprehensive details ☐

Document reference

Provide a cost profile and expenditure plan of your estimated costs throughout the aftercare period of your site.

Document plan reference

Now go to question 3d

3d Management systems

You must have an effective, written management system in place that identifies and reduces the risk of pollution. You may show this by using a certified scheme or your own system.

Your permit requires you (as the operator) to ensure that you manage and operate your activities in accordance with a written management system.

You need to be able to explain what happens at each site and which parts of the overall management system apply. For example, at some sites you may need to show you are carrying out additional measures to prevent pollution because they are nearer to sensitive locations than others.

You can find guidance on management systems on our website at www.gov.uk/government/organisations/environment-agency.

Tick this box to confirm that you have read the guidance and that your management system will meet our requirements ☑

What management system will you provide for your regulated facility?

ISO 14001 ☐

BS 8555 (Phases 1–5) ☐

Acorn ☐

Green dragon ☐

Own management system ☑

Please make sure you send us a summary of your management system with your application.

Document reference/s: Please see Application Support Document Chapter 4

4 Consultation

Fill in 4a to 4c for installations and waste operations and 4d for installations only.

Could the waste operation or installation involve releasing any substance into any of the following?

4a A sewer managed by a sewerage undertaker?

No ☐

Yes ☑ Please name the sewerage undertaker: Controlled and operated by Thames Water Utilities Limited

4b A harbour managed by a harbour authority?

No ☑

Yes ☐ Please name the harbour authority

4c Directly into relevant territorial waters or coastal waters within the sea fisheries district of a local fisheries committee?

No ☑

Yes ☐ Please name the fisheries committee

4 Consultation, continued

4d Is the installation on a site for which:

4d1 a nuclear site licence is needed under section 1 of the Nuclear Installations Act 1965?

No ☑

Yes ☐

4d2 a policy document for preventing major accidents is needed under regulation 5 of the Control of Major Accident Hazards Regulations 2015, or a safety report is needed under regulation 7 of those Regulations?

No ☑

Yes ☐

5 Supporting information

5a Provide a plan or plans for the site

See the guidance notes on part C2 for what needs to be marked on the plan.

Clearly mark the site boundary or discharge point, or both. Also include site drainage plans, site layout plans, and plant design drawings/process flow diagrams (as required). (See the guidance notes on part C2.)

Document reference/s of the plans: Please see Application Support Document Appendix A

5b Do any of the variations you plan to make need extra land to be included in the permit?

No ☑

Yes ☐ Please provide a site report for the extra land

Document report reference/s:

5c Provide a non-technical summary of your application

Document reference of the summary: Please see Application Support Document Chapter 1

5d Risk of fire from sites storing combustible waste

Are you applying for an activity that includes the storage of combustible wastes?

(This applies to all activities excluding standalone water and groundwater discharges.)

No ☑ Go to question 5f

Yes ☐ Go to question 5e

5e Will your variation increase the risk of a fire occurring or increase the environmental risk if a fire occurs?

See the guidance notes on part C2.

No ☐

Yes ☐ Provide a fire prevention plan. You need to highlight any changes you have made since your pre-application discussions

Document reference of the plan:

5f Adding an installation

If you are applying to add an installation, tick the box to confirm that you have sent in a baseline report and provide a reference ☐

Document reference of the report:

6 Environmental risk assessment

If you need one, see the guidance notes on part C2.

Provide an assessment of any additional risks the proposed changes or additions to your regulated facilities poses to the environment as part of your application to vary this permit. The risk assessment must follow the methodology set out in 'Risk assessments for your environmental permit' at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit or an equivalent method.

Document reference for the assessment: Please see Application Support Document Chapter 4

7 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422 549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, please tell us how we can improve it.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

Feedback

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We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

Crystal Mark 19110 Clarity approved by Plain English Campaign

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

No ☐

Yes ☐ Amount received

£

Plain English Campaign's Crystal Mark does not apply to appendix 1.

Appendix 1 – Low impact installation checklist

Installation reference				
Condition	Response			Do you meet this?
A – Management techniques	Provide references to show how your application meets A			Yes ☐ No ☐
	References			
B – Aqueous waste	Effluent created		m^3/day	Yes ☐ No ☐
C – Abatement systems	Provide references to show how your application meets C			Yes ☐ No ☐
	References			
D – Groundwater	Do you plan to release any hazardous substances or non-hazardous pollutants into the ground?		Yes ☐ No ☐	Yes ☐ No ☐
E – Producing waste	Hazardous waste		Tonnes per year	Yes ☐ No ☐
	Non-hazardous waste		Tonnes per year	
F – Using energy	Peak energy consumption		MW	Yes ☐ No ☐
G – Preventing accidents	Do you have appropriate measures to prevent spills and major releases of liquids? (See 'How to comply'.)		Yes ☐ No ☐	Yes ☐ No ☐
	Provide references to show how your application meets G			
	References			
H – Noise	Provide references to show how your application meets H			Yes ☐ No ☐
	References			
I – Emissions of polluting substances	Provide references to show how your application meets I			Yes ☐ No ☐
	References			
J – Odours	Provide references to show how your application meets J			Yes ☐ No ☐
	References			
K – History of keeping to the regulations	Say here whether you have been involved in any enforcement action as described in Compliance History Appendix 1 explanatory notes		Yes ☐ No ☐	

Appendix 2 – Date of birth information for Relevant offences and/or Technical ability questions only

Date of birth information in this appendix will not be put onto our Public Register

Have you filled in the Relevant Offences question?

Yes ☑

No ☐

Have you filled in the Technical ability question?

Yes ☑

No ☐

2 Relevant Offences - date of birth information

Please give us the following details

Name: n/a

Date of birth (DD/MM/YY):

3 Technical ability - date of birth information

Name: Mr Graham Hills

Date of birth (DD/MM/YY): [redacted]

Application for an environmental permit Part C6 – Variation to a bespoke water discharge activity or groundwater activity (point source discharge), or point source emission to water from an installation

Environment Agency

Fill in this part of the form, together with part C2 and part F1, if you are applying to vary (change) the conditions or any other part of the permit for a water discharge or groundwater activity.

Fill in this part of the form, together with parts C2, C3 and F1 if you are applying to vary or add a point source emission to water, groundwater or sewer from an installation.

Please check that this is the latest version of the form available from our website.

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or making changes to existing ones).

You do not need to resend any information from your original permit application if it is not affected by your proposed changes.

Please read through this form and the guidance notes that came with it.

The form can be:

1) **saved onto a computer and then filled in.**
2) **printed off and filled in by hand. Please write clearly in the answer spaces.**

It will take less than three hours to fill in this part of the application form.

Contents

About the effluent – details and type

From the list below, choose which type of effluent you are applying for on this form and answer the questions shown in Table 1.

You must fill in a separate copy of this form and the appropriate appendix or appendices for each type of effluent you plan to discharge.

Table 1 – About the effluent

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Sewage effluent (non-water company)	1.3.3 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water from domestic household or organisation operating for charitable purposes		All	a, b, c, d	b, f	-	a, b	All	-	b*, f*	a, b, c, f*, h, i	All
	1.3.4 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater from domestic household or organisation operating for charitable purposes		All	a, b, c, d	b, f	-	a, b	All	-	d, f*	a, b, c, f*, h, i	All
	1.3.5 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water (not requiring specific substances assessment)		All	a, b, c, d	b, f	-	a, b	All	-	b*, f*	a, b, c, f*, h, i	All
	1.3.6 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b, c, d	b, f	-	a, b	All	-	d, f*	a, b, c, f*, h, i	All
	1.3.7 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 15 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b, c, d	b, f	-	a, b	All	-	d, f*	a, b, c, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Sewage effluent (non-water company)	1.3.8 Sewage effluent discharge with a volume greater than 15 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b, c, d	b, f	-	a, b	All	-	d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.9 Sewage effluent discharge to groundwater requiring specific substances assessment (any volume)		All	a, b, c, d	b, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.10 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 50 m^3/day to surface water (not requiring specific substances assessment)		All	a, b, c, d	b, f	-	a, b	All	-	b*, f*	a, b, c, f*, h, i	All
	1.3.11 Sewage effluent discharge with a volume greater than 50 m^3/day to surface water (not requiring specific substances assessment)		All	a, b, c, d	b, f	-	a, b	All	-	b*, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.11 Sewage effluent discharge to surface water requiring specific substances assessment (any volume)		All	a, b, c, d	b, f	-	a, b	All	b, c, d, e	b*, c, f*	a, b, c, d*, e*, f*, h, i	All
Water company WwTW treated sewage effluent	1.3.5 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water (not requiring specific substances assessment)		All	a, b	a, f (b is optional)	-	-	All	-	a, b*, f*	a, b, c, f*, h, i	All
	1.3.6 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b	a, f (b is optional)	-	-	All	-	a, d, f*	a, b, c, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Water company WwTW treated sewage effluent	1.3.7 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 15 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b	a, f (b is optional)	-	-	All	-	a, d, f*	a, b, c, f*, h, i	All
	1.3.8 Sewage effluent discharge with a volume greater than 15 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b	a, f (b is optional)	-	-	All	-	a, d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.9 Sewage effluent discharge to groundwater requiring specific substances assessment (any volume)		All	a, b	a, f (b is optional)	-	-	All	a, b, c, d, e	a, d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.10 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 50 m^3/day to surface water (not requiring specific substances assessment)		All	a, b	a, f (b is optional)	-	-	All	-	a, b*, f*	a, b, c, f*, h, i	All
	1.3.11 Sewage effluent discharge with a volume greater than 50 m^3/day to surface water (not requiring specific substances assessment)		All	a, b	a, f (b is optional)	-	-	All	-	a, b*, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.11 Sewage effluent discharge to surface water requiring specific substances assessment (any volume)		All	a, b	a, f (b is optional)	-	-	All	a, b, c, d, e	a, b*, c, f*	a, b, c, d*, e*, f*, h, i	All
Settled storm sewage	1.3.19 Combined sewer overflow		All	a, b	-	a, b, c, d, f, g, h, i, j, k	-	All	-	a, b*, d*, f*	b, g, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Storm sewage	1.3.19 Combined sewer overflow		All	a, b	-	a, b, c, e, f, g, h, i, j, k	-	All	-	a, b*, d*, f*	b, g, h, i	All
Emergency overflow	1.3.20 Emergency overflows		All	a, b	-	a, l, m, n, o	-	All	-	a, b*, d*, f*	b, g, h, i	All
Trade and/or non-sewage – known volume	1.3.12 Trade and/or non-sewage effluent discharge to surface water or groundwater with a volume up to and including 5 m^3/day (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, d*, f*	b, f*, h, i	All
	1.3.13 Trade and/or non-sewage effluent discharge to surface water or groundwater with a volume greater than 5 m^3/day (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, d*, f*	b, d*, e*, f*, h, i	All
	1.3.14 Trade and/or non-sewage effluent discharge to surface water or groundwater requiring specific substances assessment (any volume)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, c, d*, f*	b, d*, e*, f*, h, i	All
Trade and/or non-sewage – rainfall-dependent	1.3.12 Trade and/or non-sewage effluent discharge to surface water or groundwater with a volume up to and including 5 m^3/day (not requiring specific substances assessment)		All	a, b	b, e, f	-	-	All	b, c, d, e	b*, d*, f*	b, f*, h, i	All
	1.3.13 Trade and/or non-sewage effluent discharge to surface water or groundwater with a volume greater than m^3/day (not requiring specific substances assessment)		All	a, b	b, e, f	-	-	All	b, c, d, e	b*, d*, f*	b, d*, e*, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Trade and/or non-sewage – rainfall-dependent	1.3.14 Trade and/or non-sewage effluent discharge to surface water or groundwater requiring specific substances assessment (any volume)		All	a, b	b, e, f	-	-	All	b, d, e	b*, c, d*, f*	b, d*, e*, f*, h, i	All
Mixed effluent (sewage combined with trade and/or non-sewage) – known volume	1.3.5 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, f*, h, i	All
	1.3.6 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, f*, h, i	All
	1.3.7 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 15 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, f*, h, i	All
	1.3.8 Sewage effluent discharge with a volume greater than 15 m^3/day to groundwater (not requiring specific substances assessment		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	d, f	a, b, c, d*, e*, f*, h, i	All
	1.3.9 Sewage effluent discharge to groundwater requiring specific substances assessment (any volume)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, d*, e*, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Mixed effluent (sewage combined with trade and/or non-sewage) – known volume	1.3.10 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 50 m^3/day to surface water (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, f*, h, i	All
	1.3.11 Sewage effluent discharge with a volume greater than 50 m^3/day to surface water (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.11 Sewage effluent discharge to surface water requiring specific substances assessment (any volume)		All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b, c, d	a, b, c, d*, e*, f*, h, i	All
Mixed effluent (sewage combined with trade and/or non-sewage) containing rainfall-dependent effluent	1.3.5 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water (not requiring specific substances assessment)		All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, f*, h, i	All
	1.3.6 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, f*, h, i	All
	1.3.7 Sewage effluent discharge with a volume greater than 5 m^3/day up to an including 15 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, f*, h, i	All
	1.3.8 Sewage effluent discharge with a volume greater than 15 m^3/day to groundwater (not requiring specific substances assessment)		All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, d*, e*, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Mixed effluent (sewage combined with trade and/or non-sewage) containing rainfall-dependent effluent	1.3.9 Sewage effluent discharge to groundwater requiring specific substances assessment (any volume)		All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.10 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 50 m^3/day to surface water (not requiring specific substances assessment)		All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, f*, h, i	All
	1.3.11 Sewage effluent discharge with a volume greater than 50 m^3/day to surface water (not requiring specific substances assessment)		All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.11 Sewage effluent discharge to surface water requiring specific substances assessment (any volume)		All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	b*, c, f*	a, b, c, d*, e*, f*, h, i	All
Trade – returned abstracted water (including ground source heating and cooling)	1.3.15 Cooling water or thermal discharge to surface water or groundwater (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	-	All	b, c, d, e, f, g	b*, d*, f*	a*, b, d*, e*, f*, h, i	All
	1.3.16 Cooling water or thermal discharge to surface water or groundwater requiring specific substances assessment		All	a, b, c, d	b, c, f	-	-	All	b, c, d, e, f, g	b*, c, d*, f*	a*, b, d*, e*, f*, h, i	All
	1.3.17 Aquaculture (not requiring specific substances assessment)		All	a, b, c, d	b, c, f	-	-	All	b, c, d, e	b*, d*, f*	a*, b, d*, e*, f*, h, i	All
	1.3.18 Aquaculture requiring specific substances assessment		All	a, b, c, d	b, c, f	-	-	All	b, c, d, e	b*, c, d*, f*	a*, b, d*, e*, f*, h, i	All

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

* Check the relevant question and our guidance notes on part C6 to see if you need to give an answer.

1 About the variation you are applying for

1a Give a brief description of the changes you want to make to your permit

This effluent is a mixture of waste liquors from the operation of the waste treatment, dewatering of sewage sludge. It primarily comprises of dewatering liquors transferred to Mogden WwTW following the dewatering of treated sewage sludge. Lower volume constituents will include rainfall; OCU water; contaminated run off and washdown water. UWWTD flows are also combined in the Return Pumping station to transfer to Mogden WwTW for full treatment.

1b Give this effluent a unique name

Liquor returns.

You must use this name to identify this effluent throughout this application and all associated documents.

1c Is this a release from a dam, weir or sluice ('reservoir release') under Schedule 21 of the EPR meaning of water discharge activity?

Yes

✔ No

1d Have you obtained all the necessary permissions in addition to this environmental permit to be able to carry out the discharge (see C6 guidance notes for more details)?

✔ Yes

No

N/A

2 About the effluent – how long will you need to discharge the effluent for?

2a What date do you want the permit for this effluent to start?

(DD/MM/YYYY)

Please note that charges will start on this date, even if you have not started to discharge, unless you contact us to change (delay) the start date (see the guidance notes on part C6). The start date cannot be before the permit is issued and cannot be changed (delayed) after it has already passed.

2b Is the discharge time limited?

☐ Yes Please give the date you expect the discharge to end but please note that your permit will not end on that date and you will still need to notify us to surrender the permit

(DD/MM/YYYY)

☐ No

2c Will the discharge take place all year?

✔ Yes

No Please give details of the months when you will make the discharge

2d Will the discharge take place on more than six days in any year?

✔ Yes

No

3 How much do you want to discharge?

3a What is the daily dry weather flow?

[ ] cubic metres

3b What is the maximum volume of effluent you will discharge in a day?

[1000] cubic metres

Show how you calculated the figure given in the box below and continue on a separate sheet if necessary, giving a reference for the extra sheet

See Application Support Document, Chapter 6, Q3f

Document reference

[ ]

3c What is the maximum rate of discharge?

[280] litres a second

3d What is the maximum volume of non-rainfall dependent effluent you will discharge in a day?

[1000] cubic metres

3e What is the maximum rate of rainfall dependent discharge?

[888] litres a second

3f For each answer in question 3, show how you worked out the figure on a separate sheet

Document reference

[See Application Support Document, Chapter 6, Q3f]

4 Intermittent sewage discharges

4a For each answer to b to o below, show how you worked out the figure on a separate sheet

Document reference

4b What is the total volume of the off-line/storm tank storage?

cubic metres

4c What is the total volume of on-line storage?

cubic metres

4d What is the pass forward flow at the settled storm overflow setting?

litres per second

4e What is the pass forward flow at the storm overflow setting?

litres per second

4f Is the discharge screened?

☐ Yes Answer the relevant questions from 4g to 4j

☐ No Now go to 4k

4g What is the mesh screen spacing?

millimetres

4h What is the minimum screen capacity flow through the mesh screen?

litres per second

4i What is the bar screen spacing?

millimetres

4j What is the minimum screen capacity flow through the bar screen?

litres per second

4k Is the overflow constructed to good engineering design?

☐ Yes

☐ No On a separate sheet explain what standards the overflow has been constructed to

Document reference

4l What is the emergency storage capacity of the sewer and wet well?

cubic metres

4m What is the storage time within the sewer and the wet well above the top water level at dry weather flow?

hours and minutes

4n What is the pass forward flow at the pumping station?

litres per second

4o For intermittent emergency overflows you must provide a document setting out the key protection measures you will provide

Document reference for pumping station key protection measures

5 Should your discharge be made to the foul sewer?

Foul sewer means public or private foul sewer.

Before answering these questions, you must read the guidance notes to part C6.

You will also need to contact your sewerage undertaker (usually your local water company) and you may need to check if it is possible to connect to a private foul sewer.

5a How far away is the nearest foul sewer from the boundary of the premises?

n/a metres

5b To assess whether it is reasonable to discharge your effluent into the foul sewer, please answer 5b1 or 5b2

5b1 Discharges from domestic properties

Multiply the number of properties served by the sewage treatment system by 30 metres.

Number of domestic properties served by the sewage treatment system

n/a x 30 metres =

0 metres

5b2 Discharges from all other premises including trade effluent

Divide the volume of the discharge (in cubic metres) by 0.75 and then multiply this figure by 30 metres

Volume of the discharge (answer to question 3b)

n/a cubic metres / 0.75 =

0 x 30 =

0 metres

Is your answer to question 5b1 or 5b2 above greater than the distance to the nearest foul sewer (answer to 5a)?

✔ No You do not need to explain why you cannot discharge your effluent into the foul sewer at this point. However, we may request this information from you when we determine your application. Now go to question 6.

Yes You must explain on a separate sheet why you cannot discharge your effluent into the foul sewer, giving a reference for the extra sheet. Before you submit the application, you must explore the possibility of connecting to the foul sewer, and send us evidence that you have approached the sewerage undertaker, including their formal response regarding connection, if relevant. You must also show the extra cost of connecting to a sewer compared with the treatment system you propose, and details of any physical obstacles such as roads, railways, rivers or canals.

We will only agree to the use of private treatment systems within sewered areas if you can demonstrate that:

- the additional cost of connecting to the foul sewer would be unreasonable
- connection is not practically feasible, or
- the proposed private treatment system can be shown to significantly benefit the environment

We are unlikely to grant a permit for a discharge of treated domestic sewage in circumstances where a private sewerage system is being proposed due to a lack of capacity in the nearest public sewerage network.

The guidance notes to part C6 will help you understand what information you need to provide in order to answer this question.

Document reference for where you have given this justification

6 How will the effluent be treated?

6a Do you treat your effluent?

Yes Now go to question 6b

✔ No You must explain why the effluent will not be treated

Document reference for where you have given this justification

See Application Support Document, Chapter 6, Q6a

6b Fill in Table 2 for each stage of the treatments carried out on your effluent in the order in which they are carried out

For installations with point source emission to water or sewer, there is no need to duplicate information already provided in part C3 form. Where this information is already provided, give the document reference and go to question 7.

Document reference

See Application Support Document, Chapter 6, Q6b

Table 2 – Treatments carried out on your effluent

Order of treatment	Code number	Description
First		
Second		
Third		
Fourth		

Continue on a separate sheet if you need more rows. If you prefer, you can also send us an overall design for the whole treatment process.

Document reference

See Application Support Document, Chapter 6, Q6b

7 What will be in the effluent?

For all applications, whether to surface water, or onto or into ground, you should still check to see if your discharge is likely to contain any of the specific substances listed in the guidance documents on 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' (see https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit).

Answer the relevant questions for your discharge below.

7a Are any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' likely to enter the sewerage system upstream of the discharge through any authorised or known inputs?

☐ Yes

☐ No

7b Are any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' added to or present in the effluent as a result of the activities on the site?

Yes

✔ No

7c Have any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' been detected in samples of the effluent or in the sewerage catchment upstream of the discharge?

Yes

✔ No

7d Are there any other harmful or specific substances in your effluent not mentioned in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater'?

Yes

✔ No

7e If you have answered 'No' to any of questions 7a to 7d provide details on a separate sheet of how you have established that the effluent is not likely to contain specific substances.

Document reference

See Application Support Document, Chapter 6, Q7e

7f What is the maximum temperature of your discharge?

20 degrees Celsius

7g What is the maximum expected temperature change compared to the incoming water supply?

0 increase in degrees Celsius

0 decrease in degrees Celsius

8 Environmental risk assessments and modelling

You may need to carry out an environmental risk assessment or modelling to support your application. Please answer all the questions that are relevant to your discharge. If an environmental risk assessment or modelling is required, you must send it to us with your application.

8a Sewer modelling report (for discharges of final effluent from a water company WwTW or intermittent sewage discharges)

You must carry out sewer modelling following the guidance 'Surface water pollution risk assessment for your environmental permit' at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit.

Send us details of how the modelling was carried out and the outcome.

Document reference for the sewer modelling report

8b Discharges to lakes, estuaries, coastal waters or bathing waters

You must carry out modelling following the guidance 'Surface water pollution risk assessment for your environmental permit' at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit. Send us details of how the modelling was carried out and the outcome.

Document reference for the modelling report

See Application Support Document, Chapter 6, Q8b

8c Discharges to freshwater (non-tidal) rivers

If the discharge contains, or potentially contains, any specific substances, you must carry out screening following the guidance 'Surface water pollution risk assessment for your environmental permit' at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit. The guidance notes on part C6 outline the information you must provide.

Have you answered yes to any of 7a to 7d?

☐ Yes Send us the completed screening tool, along with the raw data used to create the summary statistics

Document reference for the screening tool and raw data

☐ No

8d Discharges to groundwater

You must carry out a groundwater quantitative risk assessment following the guidance in 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit. Send us details of how the modelling was carried out and the outcome.

For groundwater remediation schemes you must send us a site-specific remediation strategy that has been agreed with the local Environment Agency Groundwater and Contaminated Land Team.

Document reference for the groundwater remediation report

8e Discharges to freshwater (non-tidal) rivers from an installation, including discharges via sewer

If the discharge contains, or potentially contains, any specific substances, you must carry out screening following the guidance (see https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit). The guidance notes on part C6 outline the information you must provide.

Have you answered yes to any of 7a to 7d?

☐ Yes Send us the completed screening tool, along with the raw data used to create the summary statistics. Where the discharge is via sewer, include sewage treatment reduction factors in the calculations.

Document reference for the screening tool and raw data

There is no need to duplicate information already provided in part C3 form. Where this information is already provided, give the document reference above.

8f Environmental impact assessment

Have you carried out an environmental impact assessment?

Yes Send us details of how the assessment was carried out and the outcome

Document reference for the environmental impact assessment

✔ No

9 Monitoring arrangements

Note: If your effluent has a maximum volume of no more than 50 cubic metres a day you do not need to complete question 9d or 9e.

9a What is the national grid reference of the inlet sampling point? (for example, SJ 12345 67890)

See Application Support Document, Chapter 6, Q9a

9b What is the national grid reference of the effluent sample point?

See Application Support Document, Chapter 6, Q9b

9c Do you have an Urban Waste Water Treatment Directive final effluent sampling point?

☐ Yes Please provide the national grid reference

☐ No

9d What is the national grid reference of the flow monitoring point?

See Application Support Document, Chapter 6, Q9d

9e Does the flow monitor have an MCERTS certificate?

Yes Please give the certificate number

✔ No

9f Do you have a UV disinfection efficacy monitoring point?

Yes Please provide the national grid reference

✔ No

9g Do you have an event duration monitoring point(s)?

☐ Yes Please provide the national grid reference

☐ No

9h You should clearly mark on the plan the locations of any of the above that apply to this effluent

Document reference for the plan

See Application Support Document, Chapter 6, Q9h

9i Do you intend to do your own effluent monitoring?

☐ Yes

☐ No

10 Where will the effluent discharge to?

10a Mark in Table 3 where this effluent discharges to and fill in the relevant appendix or appendices.

You must use the name you gave to this effluent in answer to question 1b of this form when filling in your relevant appendix or appendices.

Table 3 – Where the effluent discharges to

Receiving environment		Relevant appendix
Borehole or well	☐	1
Into land (for example, through a drainage system)	☐	2
Onto land	☐	3
Tidal river, tidal stream, estuary or coastal waters	✔	4
Non-tidal river, stream or canal	☐	5
Lake or pond	☐	6

10b Is this effluent discharged through more than one outlet?

Yes Give details, on a separate sheet, of the circumstances under which each outlet would be used by this effluent

Document reference

✔ No

10c If you answered yes to question 10b above make sure you show clearly on your discharge point appendix or appendices and site plan that this one effluent can discharge to more than one discharge point.

You must give us all the details we need for each of the discharge points used by this effluent.

11 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: https://www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, please tell us how we can improve it.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

- ☐ Yes please
- ☐ No thank you

Crystal Mark 19114 Clarity approved by Plain English Campaign

For Environment Agency use only

Date received (DD/MM/YYYY)

Payment received?

☐ No

Our reference number

☐ Yes Amount received

£

Plain English Campaign's Crystal Mark does not apply to appendices 1 to 6.

Appendix 1 – Discharges to a borehole or well (or other deep structure)

If you are discharging the effluent to a borehole or well or other deep structure (such as concrete rings, natural swallow hole or deep soakage pit) you must ensure that the discharge is indirect to groundwater. Direct discharges to groundwater cannot be permitted. We will undertake a groundwater quantitative risk assessment on your behalf in line with the guidance 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit.

For us to do this you must answer the following questions relevant to your application and provide us with additional information as summarised in Table 4.

Without this information we will be unable to complete the risk assessment and it is likely your application will be rejected.

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

1.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

1.2 Give the national grid reference of the discharge point

1.3 Is the discharge to ground via a

- ☐ Well
- ☐ Borehole
- ☐ Other deep structure Please give details (e.g. concrete ring structure, shaft, natural swallow hole, soakage pit etc.)

1.4 What is the diameter of the borehole, well or other deep structure that the effluent will be discharged into?

metres

1.5 Is the borehole, well or other structure already constructed?

- ☐ Yes Now answer questions 1.6 to 1.9
- ☐ No Now answer questions 1.10 to 1.12

Existing borehole, well or other deep structure

1.6 What is the total depth to the bottom of the existing well, borehole or other structure?

_____ metres below ground level

If you are unaware of the actual depth please estimate the depth based on the following categories:

☐ 0–5 metres

☐ 5–10 metres

☐ Greater than 10 metres

☐ Uncertain

What evidence is the estimated depth above based on?

_____

1.7 Does the well, borehole or other structure extend into groundwater?

☐ Yes – always contains water

☐ Sometimes – water is present occasionally

☐ No – never contains water

If groundwater is always, or sometimes, present, what is the highest level that the standing water reaches?

☐ Measured

_____ metres below ground level

☐ Estimated

_____ metres below ground level

1.8 Please provide any records, diagrams or borehole logs you may have that could help us understand:

- the method of construction (including any solid casings or linings used)
- the likely depth of the deep structure
- the local groundwater conditions

Please provide photocopies where possible. If it is not possible (for example, if the documents are large or bulky) please summarise any additional information you have on a separate sheet.

Document reference for the records, diagrams, or borehole logs

_____

1.9 If any maintenance has been carried out on your well, borehole or other deep structure (for example, to aid effective drainage), please give details below

Please now answer question 1.13

Proposed borehole, well or other deep structure that has not yet been constructed

1.10 Please tell us why you are unable to install a shallow engineered drainage system. This information forms an important part of our permit determination process. Which methods of shallow disposal have you considered, and why did you decide these were not feasible to take forward? Please answer questions 1.10a and 1.10b to provide the results of soakage tests and summarise in the box any relevant information supporting your decisions (for example, permission refusals from landowners or physical constraints, or land availability or proximity to buildings).

1.10a What was your percolation value (Vp) result?

⌊_____⌋ seconds per millimetre

You must show in Table 4 how you worked out the percolation value.

Table 4 – Percolation value

	Trial 1	Trial 2	Trial 3	Average
Hole 1				
Hole 2				
Hole 3				
Hole 4				

1.10b If a shallow engineered drainage system were feasible, what would be the required surface area of your infiltration system?

square metres

Supporting information to explain why you are unable to install a shallow engineered drainage system can be appended to your application.

Document reference for these details

1.11 Please tell us the type of deep structure (for example, borehole, well, deep soakage pit) you propose to install

What will the total depth be?

metres below ground level

1.12 Please tell us the reason this depth has been selected and, if you are aware of any relevant existing information on local water levels, please also tell us the depth to groundwater (in metres below ground level). What measures will you undertake to ensure the discharge is not direct into groundwater? If the discharge will be direct to groundwater explain why you cannot make it indirect. Direct discharges to groundwater cannot be permitted.

Proximity of your discharge to other receptors

1.13 Is the borehole, well or other deep structure where the discharge is being/will be made within 50 metres of any other well, spring or borehole used to supply water for drinking water or food production purposes?

☐ Yes Please show the location of the well, spring or borehole you identified in answer to question 1.13 on the plan you have provided for section 4 of the main application form. Please now answer question 1.14

☐ No Please now answer question 1.15

1.14 Please tell us about the water supply (or supplies) used for drinking water or food production purposes identified in question 1.13 above; for example, the name of the property or properties served by the water supply, what they use the water for (drinking water, food production) and where they are in relation to your discharge

1.15 What is the distance to the nearest watercourse (for example, surface water, river, stream or ditch)?

⌊_____⌋ metres

Please tell us whether you have considered discharging to surface water and why this is not feasible

In Table 5 please provide any further information required for us to complete a groundwater quantitative risk assessment on your behalf in line with the guidance 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit. Without this information we will be unable to carry out a hydrogeological risk assessment on your behalf.

Table 5 summarises the information required to allow us to undertake a hydrogeological risk assessment of your discharge to a deep infiltration system. Without this information your application will be rejected. You will already have provided some of this information earlier in this application form. We also need you to provide additional information indicated by a tick (✓) in Table 5. For further guidance on the additional information required please search for 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit and the guidance notes on part C6. You may require the advice of an environmental consultant to collate this information.

For some of the risk assessment inputs we are better placed to provide the information and will do so for those parameters indicated by an asterisk (*) as far as possible. However, if you wish to provide site-specific information for those parameters with an asterisk you are welcome to do so.

Table 5 – Further information required for the Environment Agency to complete a groundwater quantitative risk assessment on your behalf

Information	Description	Existing structure	Proposed structure	Information supplied?
Information supplied by the applicant This has already been requested earlier in the application form				Information you have already supplied on the application form
National grid reference of the discharge point		Appendix 1 Q2	Appendix 1 Q2	
Volume of effluent (m^3 per day)		Q3b	Q3b	
Type of effluent treatment	Septic tank, package treatment plant, other	Q6	Q6	
Type of deep infiltration system	Borehole, well, concrete ring structure, other	Appendix 1 Q3	Appendix 1 Q3	
Diameter of deep infiltration system (metres)		Appendix 1 Q4	Appendix 1 Q4	
Depth to the base of deep infiltration structure (metres)		Appendix 1 Q6	Appendix 1 Q11	
Depth to water table (metres)	Is discharge above or below water table?	Appendix 1 Q7, Q8	Appendix 1 Q12	
Justification for a deep infiltration system	Why are you unable to install a shallow infiltration system? What other options for disposal have been considered? Provide full details of the infiltration tests undertaken plus results	Appendix 1 Q8 if available	Appendix 1 Q10	
Information supplied by the applicant This is additional information we need from you that is not provided elsewhere on the application form. Site data should be given where it is already available. If not, you can submit the relevant literature values quoting the source of the data and justification of the values you have selected. Please tick the right-hand column to confirm you have provided this essential information.				

Information	Description	Existing structure	Proposed structure	Information supplied?
Concentration of relevant substances entering the infiltration system	For discharges of domestic effluent we will routinely assess the concentration of nitrogen species, particularly the ammonium concentration	✓	✓	☐
Length of screened borehole section below the water table (metres)	Depth in metres of the borehole screened section that is below the water table (This applies only to boreholes that have groundwater in the base)	✓	✓	☐
Calculated area of infiltration system (square metres)	Explain how the area of the infiltration system has been calculated – this is especially relevant if a non-circular system is used	✓	✓	☐
Unsaturated zone parameters	The following represent the strata above the water table: • hydraulic conductivity (metres per day) • water-filled porosity (per cent) • bulk density (grammes per cubic centimetre)	✓	✓	☐
Saturated zone parameters	The following represent the strata above the water table: • hydraulic conductivity (metres per day) • water-filled porosity (per cent) • bulk density (grammes per cubic centimetre) • hydraulic gradient of the water table (fraction)	✓	✓	☐
Information provided by the Environment Agency where possible You are free to provide this information if you wish, or in some specific cases we may need to ask for this at a later stage. Please tick if you have provided this information (optional).				

Information	Description	Existing structure	Proposed structure	Information supplied?
Environmental standard	The relevant environmental standard or compliance value against which we will assess your effluent discharge	*	*	☐
Half-life for degradation of the substance (days)	If you wish to know more about these parameters see 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit	*	*	☐
Soil water partition coefficient (litres per kilogramme)		*	*	☐
Mixing zone thickness (metres)		*	*	☐
Distance to compliance point (metres)		*	*	☐

Appendix 2 – Discharges into land

Answer the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

2.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

2.2 Give the national grid reference of the discharge point

2.3 Is your infiltration system new or existing?

☐ New Now go to question 2.5

☐ Existing Now go to question 2.4

2.4a When was it built?

2.4b Now answer questions 2.5–2.8 if you are able to, if not leave them blank and go to question 2.9

2.5 Is your infiltration system designed and built to British Standard 6297:2007 + A1:2008 or the British Standards in force at the time of installation?

☐ Yes

☐ No Please provide details, on a separate sheet, of the design criteria used for your infiltration system

Document reference

2.6 On what date did you carry out a percolation test and dig a trial hole in line with British Standard 6297:2007 + A1:2008?

(DD/MM/YYYY)

2.7 What is your percolation value (Vp) result?

seconds per millimetre

You must show in Table 6 how you worked out the percolation value. Please also provide your test sheets and any field notes or observations made regarding ground conditions.

Table 6 – Percolation value

	Trial 1	Trial 2	Trial 3	Average
Hole 1				
Hole 2				
Hole 3				
Hole 4				

2.8 Please show us how you have calculated the area (A) of your infiltration system

p ⌊_____⌋ x

Vp ⌊_____⌋ x

0.25 for septic tanks =

A ⌊0_____⌋ square metres

or

p ⌊_____⌋ x

Vp ⌊_____⌋ x

0.20 for package treatment plants =

A ⌊0_____⌋ square metres

p Population based on maximum occupancy

Vp Percolation value in seconds/mm

2.9 If known, mark on the plan you have provided the extent of the infiltration system. Please write on the plan the length and width of the sides in metres.

2.10 Is any part of your infiltration system within 50 metres of a well, spring or borehole?

☐ No

☐ Yes Identify the location of the well, spring or borehole on the plan you have provided and answer question 2.11

2.11 Is the well, spring or borehole you have identified used to supply water?

☐ No

☐ Yes You must describe what the water supplied is used for

2.12 Is any part of your infiltration system within 10 metres of a watercourse?

☐ No

☐ Yes Identify the location of the watercourse on the plan you have provided for section 4 of part C2

Appendix 3 – Discharges onto land

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

3.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

3.2 Give the national grid reference of the discharge point

3.3 Select from the table below the type of area where the effluent is disposed of

Area type		
Unlined reed bed	☐	
Unlined grass plot	☐	
Unlined wetland	☐	
Other	☐	Please specify below

3.4 What is the surface area of the land used for your disposal?

square metres

3.5 Is any part of your infiltration system within 50 metres of a well, spring or borehole?

☐ No

☐ Yes Identify the location of the well, spring or borehole on the plan you have provided and answer question 3.6

3.6 Is the well, spring or borehole you have identified used to supply water?

☐ No

☐ Yes You must describe what the water supplied is used for

3.7 Is any part of your infiltration system within 10 metres of a watercourse?

☐ No

☐ Yes Identify the location of the watercourse on the plan you have provided for section 4 of part C2

Appendix 4 – Discharges to tidal river, tidal stream, estuary or coastal waters

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

4.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

See Application Support Document, Chapter 6, Qu 4.1

4.2 Give the national grid reference of the discharge point

See Application Support Document, Chapter 6, Qu 4.2

4.3 Give the name of the tidal river, tidal stream, estuary or area of coastal water if you know it

See Application Support Document, Chapter 6, Qu 4.3

4.4 Is the discharge into a

✔ Tidal river

Tidal stream

An estuary

Coastal water

4.5 Does the discharge reach the watercourse by flowing through a surface water sewer?

Yes Give the national grid reference where the discharge enters the surface water sewer

✔ No

4.6 Is the discharge point above the mean low water spring tide mark?

✔ Yes Please explain, on a separate sheet, why the discharge cannot be made below this point

Document reference

See Application Support Document, Chapter 6, Qu 4.6

No

4.7 How is the effluent dispersed?

For example, open pipe or diffuser system

Open Pipe System

If diffuser system go to question 4.8

4.8 Give details, on a separate sheet, of the design of the diffuser system

Document reference

n/a

4.9 Is the discharge made to a roadside drain or ditch?

✔ No

Yes If yes, it is your responsibility to ascertain whether the relevant highways authority is responsible for the roadside drain or ditch. If it is, you need to secure the appropriate permissions from the relevant highways authority before submitting an application for an environmental permit to the Environment Agency. A copy of the written permission from the relevant highways authority must be submitted with the environmental permit application.

Document reference for the written permission from the relevant highways authority

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

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

5.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

5.2 Give the national grid reference of the discharge point

5.3 Give the name of the watercourse, canal or the main watercourse it is a tributary of if you know it

5.4 Is the discharge into a

- ☐ Non-tidal river
- ☐ Stream
- ☐ Canal

5.5 Does the discharge reach the watercourse or canal by flowing through a surface water sewer?

- ☐ Yes Give the national grid reference where the discharge enters the surface water sewer
- ☐ No

5.6 Does the watercourse dry up for part of the year?

- ☐ No
- ☐ Yes How many months per year is the watercourse dry?

Do you agree to install perforated pipe work before the discharge point?

The discharge must be made via a perforated pipe. Any section of that pipe which lies within 10 metres of the bank of any watercourse shall be perforated, but this perforated section shall not extend more than 10 metres from the bank of any watercourse.

- ☐ Yes
- ☐ No

5.61 If the watercourse does dry up for part of the year can you indicate a typical period when the surface water runs dry each year – start and finish (in months)

Watercourse typically becomes dry in:

January	☐	May	☐	September	☐
February	☐	June	☐	October	☐
March	☐	July	☐	November	☐
April	☐	August	☐	December	☐

Watercourse typically flows again in:

January	☐	May	☐	September	☐
February	☐	June	☐	October	☐
March	☐	July	☐	November	☐
April	☐	August	☐	December	☐

5.6.2 If the watercourse does dry up for part of the year, how many metres downstream of the discharge is it before the discharged effluent soaks in?

5.7 Is the discharge made to a roadside drain or ditch?

☐ No

☐ Yes If yes, it is your responsibility to ascertain whether the relevant highways authority is responsible for the roadside drain or ditch. If it is, you need to secure the appropriate permissions from the relevant highways authority before submitting an application for an environmental permit to the Environment Agency. A copy of the written permission from the relevant highways authority must be submitted with the environmental permit application.

Document reference for the written permission from the relevant highways authority

Appendix 6 – Discharges to a lake or pond

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

6.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

6.2 Give the national grid reference of the discharge point

6.3 Give the name of the lake or pond if you know it

6.4 Select from the following table the type of lake or pond you will be discharging to and answer the relevant questions

Type of lake or pond		Relevant questions
Lake or pond which is not connected to a river or watercourse	☐	Permit not required*
Lake or pond which is not connected to a river or watercourse, where you have had a notice served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016	☐	6.5, 6.6, 6.7
Lake or pond that discharges into a river or watercourse	☐	6.5, 6.6, 6.7

* Unless a Notice has been served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016

6.5 What is the surface area of the lake or pond?

square metres

6.6 What is the maximum depth of the lake or pond?

metres

6.7 What is the average depth of the lake or pond?

metres

Application for an environmental permit
Part F1 – Charges and declarations

Fill in this part for all applications for installations, waste operations, mining waste operations, water discharges, point source groundwater discharges and groundwater discharges onto land. Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that came with it.

The form can be:

1) **saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.**
2) **printed off and filled in by hand. Please write clearly in the answer spaces.**

It will take less than two hours to fill in this part of the application form.

Contents

Each individual who is applying for their name to appear on the permit must complete the declaration in section 5. You will have to print a separate copy of the declaration page for each additional individual to complete.

1 Working out charges

You must fill in this section.

You have to submit an application fee with your application. You can find out the charge by searching for 'Environment Agency charging scheme and guidance: environmental permits' at www.gov.uk/government/organisations/environment-agency.

Please remember that the charges are revised on 1 April each year and that there is an annual subsistence charge to cover the costs we incur in the ongoing regulation of the permit.

Table 1 – Type of application (fill number of activity being applied for in each column)

Installation	Waste	Mining waste	Medium Combustion Plant (MCP)/Specified Generator (SG)	Water discharge/point source discharge to groundwater	Groundwater spreading onto land

Table 2 – Charge type (A)

Charge activity reference	Charge activity description	What are you applying to do? E.g. new, minor variation, normal variation, substantial variation, surrender, low risk surrender, transfer	Amount
e.g. 1.17.3	e.g. Sect 5.2 landfill for hazardous waste	e.g. transfer	e.g. £5,561
1.16.14	Physical and chemical treatment of waste	Substantial variation	£ 7,137.00
Total A			£ 7,137.00

1 Working out charges (you must fill in this section), continued

Table 3 – Additional assessment charges (B)

Part 1.19 Charges for plans and assessments			Tick appropriate
Reference	Plan or assessment	Charge	
1.19.1	Waste recovery plan	£1,231	☐
1.19.2	Habitats assessment (except where the application activity is a flood risk activity)	£779	☑
1.19.3	Fire prevention plan (except where the application activity is a farming installation)	£1,241	☐
1.19.4	Pests management plan (except where the application activity is a farming installation)	£1,241	☐
1.19.5	Emissions management plan (except where the application activity is a farming installation)	£1,241	☐
1.19.6	Odour management plan (except where the application activity is a farming installation)	£1,246	☑
1.19.7	Noise and vibration management plan (except where the application activity is a farming installation)	£1,246	☐
1.19.8	Ammonia emissions risk assessment (intensive farming applications only)	£620	☐
1.19.9	Dust and bio-aerosol management plan (intensive farming applications only)	£620	☑
	Advertising	£500	☐
Total B			£ 2,645.00

Total charges

Total A plus total B £ 9,782.00

2 Payment

Tick below to show how you have paid.

Cheque ☐

Postal order ☐

Cash ☐ Tick below to confirm you are enclosing cash with the application

Credit or debit card ☐

Electronic transfer (for example, BACS) ☑

Remittance number PSCAPPTHAMES112

Date paid (DD/MM/YYYY)

How to pay

Paying by cheque, postal order or cash

Cheque details

Cheque made payable to

Cheque number

Amount £

You should make cheques or postal orders payable to 'Environment Agency' and make sure they have 'A/c Payee' written across them if it is not already printed on.

Please write the name of your company and application reference number on the back of your cheque or postal order. **We will not** accept cheques with a future date on them.

We do not recommend sending cash through the post. If you cannot avoid this, please use a recorded delivery postal service and enclose your application reference details. Please tick the box below to confirm you are enclosing cash.

I have enclosed cash with my application ☐

2 Payment, continued

Paying by credit or debit card

If you are paying by credit or debit card we can call you. We will destroy your card details once we have processed your payment. We can accept payments by Visa, MasterCard or Maestro card only.

Please call me to arrange payment by debit or debit card ☐

Paying by electronic transfer BACS reference

If you choose to pay by electronic transfer you will need to use the following information to make your payment.

Company name	Environment Agency
Company address	SSCL (Environment Agency), PO Box 797, Newport Gwent, NP10 8FZ
Bank	RBS/NatWest
Address	London Corporate Service Centre, CPB Services, 2nd Floor, 280 Bishopsgate, London EC2M 4RB
Sort code	60-70-80
Account number	10014411
Account name	EA RECEIPTS
Payment reference number	PSCAPPXXXXXYYY

You need to create your own reference number. It should begin with PSCAPP (to reflect that the application is for a permitted activity) and it should include the first five letters of the company name (replacing the X's in the above reference number) and a unique numerical identifier (replacing the Y's in the above reference number). The reference number that you supply will appear on our bank statements.

If you are making your payment from outside the United Kingdom, it must be in sterling. Our IBAN number is GB23NWK60708010014411 and our SWIFTBIC number is NWBKGB2L.

If you do not quote your reference number, there may be a delay in processing your payment and application.

Provide a unique reference number for the application, i.e. do not only use the company name only

State who is paying (full name and whether this is the agent/ applicant/other)

Fee paid £

Date payment sent (DD/MM/YYYY)

Now read section 3 below

You should also email your payment details and reference number to ea_fsc_ar@gov.sscl.com.

3 Privacy notice

The Environment Agency runs the environmental permit application service.

We are the data controller for this service. A data controller determines how and why personal information is processed.

Our personal information charter explains:

- your rights
- what we do with your personal information

We're allowed to process your personal information because we have official authority as the environmental regulator. We need this information to carry out a task in the public interest that is set out in law. As the data controller, when you apply for an environmental permit, we have a legal obligation to process your personal data under the Environmental Permitting Regulations. The second lawful basis for processing your personal data is to comply with this legal obligation.

We need your personal information to process your environmental permit application. If you do not give us this information we cannot issue a permit to you. After we've issued a permit to you, we use your personal information:

- to check that you're complying with your permit
- during any potential enforcement action

What personal information we collect

If you're the individual applicant, director or company secretary of a company applying or a technically competent manager we need your:

- name
- date of birth

3 Privacy notice, continued

- address
- email address

If you're the agent, consultant, employee responsible for the activity or the employee responsible for billing and invoicing we need your:

- name
- address
- email address

If you're the applicant we need details of any:

- convictions
- bankruptcy

We also collect any questions or feedback you leave, including your email address if you contact us.

Your responsibility with other people's personal information

If you've included personal information about other people on your application, you must tell them. You must provide them with a copy of this privacy notice so that they know how their personal information will be used.

What we do with your personal information

We use your personal information to help us decide whether to issue you with a permit.

The information (except dates of birth) is available online on our consultation website during the consultation period. This website is available to everyone so your information may be seen outside the European Economic Area.

After consultation we put all the information (except dates of birth) you give us in your application on our public register.

If you can demonstrate that any information you send us is commercially or industrially confidential, we'll consider withholding that information from our public register.

If you think that the information you'll send us may be a threat to national security you must contact the Secretary Of State before you apply. You must still send us that information with your application. We will not include this information on our public register unless the Secretary of State decides it can be included.

See the environmental permitting guidance for guidance on national security.

We may use your email address to contact you for user research to improve our service. You don't have to take part in the research.

Where your personal information is processed and stored

We store and process your personal information on servers in the UK. We will not host your personal information outside the European Economic Area.

We do not use your personal information to make an automated decision or for automated profiling.

How long we keep your personal information

We keep your personal information while your permit is in use and for 7 years after you surrender your permit. If the permit is for a landfill site, we keep the data for 10 years after surrender.

Removing personal information from the public register

We will remove your personal information from the public register if:

- you withdraw your application
- we refuse your application and the time limit for appealing the decision has expired or an appeal is dismissed
- the information is no longer relevant for public participation purposes under the Environmental Permitting Regulations

Contact

Our Data Protection Team gives independent advice. They monitor how the Environment Agency uses your personal information.

If you have questions or concerns about how we process personal information, or to make a complaint or request relating to data protection, please contact:

Address: Data Protection Team
Environment Agency
Horizon House
Deanery Road
Bristol
BS1 5AH

3 Privacy notice, continued

Email: dataprotection@environment-agency.gov.uk

You can also make a complaint to the Information Commissioner's Office (ICO).

The ICO is the supervisory authority for data protection legislation. The ICO website has a full list of your rights under data protection legislation.

Now read section 4 below

4 Confidentiality and national security

Confidentiality

We will normally put all the information in your application on a public register of environmental information. However, we may not include certain information in the public register if this is in the interests of national security, or because the information is confidential.

You can ask for information to be made confidential by enclosing a letter with your application giving your reasons. If we agree with your request, we will tell you and not include the information in the public register. If we do not agree with your request, we will let you know how to appeal against our decision, or you can withdraw your application. You can find guidance on confidentiality in 'Environmental permitting guidance: core guidance', published by Defra and available via our website at www.gov.uk/government/organisations/environment-agency.

Only tick the box below if you wish to claim confidentiality for your application

Please treat the information in my application as confidential ☐

National security

You can tell the Secretary of State that you believe including information on a public register would not be in the interests of national security. You must enclose a letter with your application telling us that you have told the Secretary of State and you must still include the information in your application. We will not include the information in the public register unless the Secretary of State decides that it should be included.

You can find guidance on national security in 'Environmental permitting guidance: core guidance', published by Defra and available via our website at www.gov.uk/government/organisations/environment-agency.

You cannot apply for national security via this application.

Now fill in section 5

5 Declaration

If you knowingly or carelessly make a statement that is false or misleading to help you get an environmental permit (for yourself or anyone else), you may be committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

A relevant person should make the declaration (see the guidance notes on part F1). An agent acting on behalf of an applicant is NOT a relevant person.

Each individual (or individual trustee) who is applying for their name to appear on the permit must complete this declaration. You will have to print a separate copy of this page for each additional individual to complete.

If you are transferring all or part of your permit, both you and the person receiving the permit must make the declaration. You must fill in the declaration directly below; the person receiving the permit must fill in the declaration under the heading 'For transfers only'.

Note: we will issue a letter to both current and new holders to confirm the transfer. If you are changing address we will need to send this letter to your new address; therefore please tell us your new address in a separate letter.

If you are unable to trace one or more of the current permit holders please see below under the transfers declaration.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

If you deliberately make a statement that is false or misleading in order to get approval you may be prosecuted.

I confirm that my standard facility will fully meet the rules that I have applied for (this only applies if the application includes standard facilities) ☐

Tick this box to confirm that you understand and agree with the declaration above, then fill in the details below (you do not have to provide a signature as well) ☑

Tick this box if you do not want us to use information from any ecological survey that you have supplied with your application (for further information please see the guidance notes on part F1) ☐

5 Declaration, continued

Name

Title (Mr, Mrs, Miss and so on)	Mr
First name	Nick
Last name	Lutt
on behalf of (if relevant; for example, a company or organisation and so on)	Thames Water
Position (if relevant; for example, in a company or organisation and so on)	Environmental Consultant
Today's date (DD/MM/YYYY)	01/08/2022

For transfers only – declaration for person receiving the permit

A relevant person should make the declaration (see the guidance notes on part F1). An agent acting on behalf of an applicant is NOT a relevant person.

I declare that the information in this application to transfer an environmental permit to me is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

Note: If you cannot trace a person or persons holding the permit you may be able to transfer the permit without their declaration as above. Please contact us to discuss this and supply evidence in your application to confirm you are unable to trace one or all of the permit holders.

If you deliberately make a statement that is false or misleading in order to get approval you may be prosecuted.

Tick this box to confirm that you understand and agree with the declaration above, then fill in the details below (you do not have to provide a signature as well)	☐

Name

Title (Mr, Mrs, Miss and so on)	
First name	
Last name	
on behalf of (if relevant; for example, a company or organisation and so on)	
Position (if relevant; for example, in a company or organisation and so on)	
Today's date (DD/MM/YYYY)	

Now go to section 6

6 Application checklist

You must fill in this section.

If your application is not complete we will return it to you. If you aren't sure about what you need to send, speak to us before you submit your application.

You must do the following:

Complete legibly all parts of this form that are relevant to you and your activities	☑
Identify relevant supporting information in the form and send it with the application	☑
List all the documents you are sending in the table below. If necessary, continue on a separate sheet. This separate sheet also needs to have a reference number and you should include it in the table below	☑
For new permits or any changes to the site plan, provide a plan that meets the standards given in the guidance note on part F1	☐
Provide a supporting letter for any claim that information is confidential	☐
Get the declaration completed by a relevant person (not an agent)	☑
Send the correct fee	☑

6 Application checklist, continued

Question reference	Document title	Document reference

7 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, or you would like us to review a decision we have made, please let us know. More information on how to do this is available at: https://www.gov.uk/government/organisations/environment-agency/about/complaints-procedure.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

8 Where to send your application

For how many copies to send see the guidance note on part F1.

Please send your filled in application form to:

For water discharges by email to PSC-WaterQuality@environment-agency.gov.uk

For waste and installations by email to PSC@environment-agency.gov.uk

Or

Permitting Support, NPS Sheffield
Quadrant 2
99 Parkway Avenue
Parkway Business Park
Sheffield
S9 4WF

Do you want all information to be sent to you by email?

Please tick this box if you wish to have all communication about this application sent via email (we will use the details provided in part A) ☐

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

No ☐

Yes ☐ Amount received

£

4. Form C2 Questions

1 About the permit

1a Discussions before your application

The EA's pre-application process has been utilised for this application - reference EPR/DP3291SW/V002. A nature and heritage conservation screening was also requested and received via email from the pre-application advice service.

1b Permit number

What is the permit number that this application relates to?

EPR/DP3291SW – issued 16/01/2009

1c What is the site name, address, postcode and national grid reference?

Iver South Sludge Dewatering Centre,

Lakeside Road

Colnbrook

Buckinghamshire

SL3 0ED

2 About your proposed changes

2a Type of variation

This is a substantial variation.

2b Changes or additions to existing activities

This is a change of permit type from a standard rules permit to a bespoke waste operation permit. ISSDC does not meet qualifying criteria of the new consolidated SR 2021 No.10 permit. This includes (but not limited) ISSDC is not described under EPR as a Part A(1) installation and that Anaerobic digestion of waste sludge is not undertaken at the facility. No other standard rules set is now applicable for ISSDC. The process has not significantly changed since EA issue of environmental permit EPR/DP3291SW in January 2009. Biological treatment is not undertaken at the facility.

2c Consolidating (combining) or updating existing permits

Yes, modernise.

2c1 Do you want to have a modern style permit?

Yes.

2d Treating batteries

The waste operation is not treating batteries.

2d1 Are you planning to treat batteries?

No, this application is not for the treatment of batteries.

2e Ship recycling

2e1 Is your activity covered by the Ship Recycling Regulations 2015?

No, this application is not covered by the Ship Recycling Regulations 2015.

2f Low impact installations (installations only)

2f1 Are any of the regulated facilities low impact installations?

N/A, this application is not for an installation.

3 Your ability as an operator

3a Relevant offences

3a1 Have you, or any other relevant person, been convicted of any relevant offence?

Yes. The applicant has been convicted of a relevant offence within the last 12 months.

Event Name	Court	Date of hearing	Fine	Summary
EA v TWUL - Henley STW	Aylesbury Crown Court	26-Feb-21	£2,300,000.00 £87,944.00 (costs)	TWUL pleaded guilty to one charge (Count 2) and one charge (Count 1) lay on the file after a not guilty plea. Count 1: Between the 17th day of April 2016 and 26th April 2016 at Henley Sewage Treatment Works, Fawley, Henley-On-Thames, Oxfordshire, you failed to comply with or contravened an environmental permit, namely CNTD.D61 Schedule 01 Condition 1 (1), in that the works was not operated and effluent was not treated in a manner which so far as reasonably practicable minimised the polluting effects of the discharge made from the works on controlled waters. Contrary to Regulation 38(2) of the Environmental Permitting (England and Wales) Regulations 2016 Count 2: On the 23rd day of April 2016 at Henley Sewage Treatment Works, Fawley, Henley-On-Thames, Oxfordshire you contravened Regulation 12 (1) (b) of the Environmental Permitting (England and Wales) Regulations 2016 by causing a water discharge activity, namely the discharge of partially

Event Name	Court	Date of hearing	Fine	Summary
				treated effluent consisting of ammoniacal nitrogen into the Fawley Court Ditch and Fawley Court Stream except under and to the extent authorised by an environmental permit. Contrary to Regulations 38(1) (a) and 12 (1) (b) of the Environmental Permitting (England and Wales) Regulations 2016.
EA v TWUL	Aylesbury Crown Court	21 & 26 May 2021	£4,000,000 £84,669 (costs)	Three charges as follows: (i) Depositing of controlled waste on land contrary to section 33(1)(a) and section 33(6) of the Environmental Protection Act 1990 – on 8 February 2016; (ii) Causing a water discharge activity, contrary to Regulation 12(1)(b) and Regulation 38(1)(a) of the Environmental Permitting (England Wales) Regulations 2019 – on 8 February 2016 & (iii) Failure to comply with an environmental permit condition, contrary to Regulation 38(2) of the Environmental Permitting (England and Wales) Regulations 2016 – on or about 8 February 2016. Plus, four subsequent charges taken into consideration (TICs), with the first (TIC 1) considered alongside the third charge.
EA v Thames Water - Hinksey/Seacourt Stream	Aylesbury Crown Court	19-Nov-21	£4,000,000.00 £90,713.52 (costs) and victim's surcharge of £170	TWUL pleaded guilty to one charge: Between 23 – 27 July 2016, in breach of Condition 2 of permit CAWM.0064 for an emergency overflow, TW failed to have a documented maintenance programme covering maintenance of the syphon/downstream sewer, resulting in a discharge due to its own act or default and undue delay identifying the asset and source of pollution, in contravention of Reg 38(2) of the EPR 2016.

3b Technical ability

Thames Water uses WAMITAB qualified staff at their waste facilities. The name of the relevant person for the site has been named below and full details have been provided separately on a spreadsheet:

Mr David Chowings

Please see Appendix B for evidence of competency.

3c Finances

Installations, waste operations and mining waste operations only.

Do you or any relevant person or a company in which you were a relevant person have current or past bankruptcy or insolvency proceedings against you?

No.

3d Management systems

What management system will you provide for your regulated facility?

Identify the form of the management system from the list:

• Own management system

Thames Water has a SharePoint based Environmental Management System, with site specific elements and procedures linked from across the organisation Thames Water also has an Asset Management System accredited to ISO 55001 and an Energy Management System accredited to ISO 50001.

Scope

Thames Water has an EMS in place for its permitted assets.

Environmental Policy

Implementation of Thames Water's Environmental Policy is approved by the Thames Water Executive Committee of the Thames Water Board and is the responsibility of all employees, with the Chief Executive being accountable for its implementation. The policy covers all company activities, including this installation, and applies to all individuals who are employed by, or carry out work on behalf of, any Thames Water company including contractors, temporary staff and agency workers. The Management Systems Team is responsible for the implementation and assurance of the EMS, the site operations teams will be responsible for maintaining ongoing compliance with the EMS and managing the site.

Management and Responsibilities

The Management Systems Team (EMS specialists) have responsibility for the management and upkeep of the EMS. Compliance with specific elements of environmental legislation is managed by the relevant Business Areas across the Company. The Environmental Assurance Team maintain a Legal Register and, in consultation with Operations Teams, the environmental permitting team and other specialists, assess environmental risks for in-scope areas using a significance scoring method under normal, abnormal and emergency conditions. Significant environmental aspects and impacts consider legal and other requirements, cost to the business, scale of impact and interested parties.

Management Systems Team are responsible for setting internal environmental standards which are then implemented by the relevant business areas. The Standards and other relevant information are communicated through several routes. Incident and corrective action routes exist to promote continual improvement. The team run a programme of Management System Audits to determined adherence to the environmental policy and environmental standards.

Local operating procedures are the responsibility of the operational teams that operate the ISSDC.

The defined roles and responsibilities are allocated to relevant personnel, depending on their job description, qualifications, knowledge, experience and training. Training and competency are based on specific roles.

Operational Control

Procedures are in place within the EMS to identify and control environmental issues arising from company activities. Each department is required to achieve operational control of its activities using standardised systems.

Routine treatment operations and activities are recorded within the corporate management database, SAP. These include routine inspections, monitoring and maintenance tasks.

Non-routine activities, such as major overhauls/refurbishments, which involve the use of sub-contractors are assessed for health & safety concerns; relevant environmental risks and with accompanying method statements to respond to these. Contractors who are required to carry out major services are closely managed by operational or other staff to ensure that compliance with Thames Water's H&S and environmental policies is achieved. No contractors may work on site without having undergone a full site induction and being issued with a Thames Water Operational Safety Authorisation (TWOSA) for the task(s) they intend to complete.

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.

Maintenance and Monitoring

Management will have the ultimate responsibility for the effective maintenance of plant throughout the company. The facility has named staff that are responsible for day-to-day maintenance operations and contractors are also used as required. All maintenance is logged on SAP. The following basic inspections and maintenance activities are indicative of those carried out on site:

- Daily operation of plant (24/7) involves visual inspection of operational assets;
- Daily inspection of temporary pipe work installed;
- Routine maintenance programme for plant; and
- Routine lubrication programme.

Personnel responsible for the inspection, testing and maintenance of pollution prevention infrastructure are trained to an appropriate level.

All regular maintenance of all plant and equipment will be completed on the time scale specified by the equipment manufacturer including routine inspections.

Environmental Improvement

Thames Water is committed to environmental improvements and has established environmental targets and plans relating to materials and waste management, transport, climate change mitigation and adaptation (energy efficiency and renewable energy generation), water resources, biodiversity, river water quality, and drainage asset performance. TWUL's Environmental Governance Board meets on a regular basis to provide strategic direction, and interrogative review, attached to any environmental issue of substantive concern including emerging risks as well as current topics.

Competence, Training and Training Records

Thames Water aims to ensure that all employees are in possession of the knowledge, skills and experience necessary to perform their role in accordance with the company's operating procedures and in full compliance with the law. Training needs are identified by the employee's immediate supervisor or line manager.

For those sites treating 'waste' as defined by the Waste Regulations 2011, coverage at all permitted sites by staff who hold the appropriate level of WAMITAB 'Certificate of technical Competence' is monitored centrally. This aspect of the staff training is currently being reviewed in light of the change in permitting requirements for sludge treatment centres.

For each internal training course held a Training Record is issued.

Induction training is carried out by the responsible line manager and consists of an introduction to the Company's Environmental Health and Safety Policy and description of emergency response and spill prevention procedures.

Staff receive specific training in the plant's operation and the environmental impact of the process as well as health and safety. The operators will have a detailed understanding of the operational procedures for the site for both normal and abnormal operation. As part of the training, operators will receive specific instructions relating to those aspects of plant operation that have the potential for a negative impact on the environment. This training will be provided by the equipment manufacturers or in-house staff as appropriate.

Contractors

There are several procedures to ensure contractors have the required skills and environmental competencies to carry out works at the 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 contactor is required to submit a method statement prior to any commencement of work, identifying how work is to be undertaken and the associated risks. The method statement must be approved by the Site Manager, 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.

Incidents, Non-Compliances and Complaints

Thames Water has procedures for incidents, non-compliances and environmental complaints.

Incidents are managed through corporate and site-specific procedures which ensure that all incidents are logged and that necessary preventative and/or corrective actions are taken.

Customer complaints are made via the Customer Centre which will log all complaints electronically and pass the details of the complaint onto the local Operations (Process Manager and Team Manager), either directly or via the Operational Management Centre. The Operations team will investigate the details of the complaint and take appropriate action. Where complaints relate to odour/noise/amenity, typical follow up action would include physical checks onsite of the operation of plant; offsite checks where needed; with all the actions taken being logged. Where appropriate, site management may contact the customer to discuss the outcome of the complaint, otherwise, there is a customer communication plan that identifies how and when contact will be made with customers and other stakeholders.

Information regarding complaints is recorded to allow determination of an appropriate response (corrective action) and identify what measures need to be taken in the future to prevent its reoccurrence (preventive action).

Communication

There are regular meetings held on site to discuss all aspects of the treatment works and performance against targets. These meetings include the operation and performance of the installation. Other communication methods to promote environmental management issues and continual improvement include: toolbox talks, environmental alerts, OSC portal forums, formalised event learning processes following an operational incident and compliance audits.

4 Consultation

Could the waste operation or installation involve releasing any substance into any of the following?

4a A sewer managed by a sewerage undertaker?

Yes. The site discharges into a drainage system that connects to Mogden Wastewater Sewage Treatment Works, controlled and operated by the applicant.

4b A harbour managed by a harbour authority?

No.

4c Directly into relevant territorial waters or coastal waters within the sea fisheries district of a local fisheries committee?

No.

4d Is the installation on a site for which:

4d1 a nuclear site licence is needed under section 1 of the Nuclear Installations Act 1965?

N/A

4d2 a policy document for preventing major accidents is needed under regulation 5 of the Control of Major Accident Hazards Regulations 2015, or a safety report is needed under regulation 7 of those Regulations?

N/A. The ISSDC is not a notified COMAH establishment.

5 Supporting information

5a Provide a plan or plans for the site

Please see Appendix A for:

- Site location plan;
- Site layout plan;
- Site drainage plan; and,
- Block Flow Diagram of site operations.

5b Do any of the variations you plan to make need extra land to be included in the permit?

No.

5c Provide a non-technical summary of your application

Please see earlier text in Section 1.

5d Risk of fire from sites storing combustible waste

No5e Will your variation increase the risk of a fire occurring or increase the environmental risk if a fire occurs?

No. ISSDC does not store, use or treat highly combustible waste. The facility stores dewatered sludge prior to removal offsite for recovery. Dewatered sewage sludge, is not a highly combustible material. UK dewatered sludge incineration takes place at high temperature and can also require pre-blending with high combustible material (e.g. coal). The site meets the 3 objectives without using any of the measures in EA guidance document *Fire prevention plans: environmental permits* (Updated 11 January 2021). No FPP has been provided with this permit application. Extant site risk management controls allows TWUL to :

- minimise the likelihood of a fire happening
- aim for a fire to be extinguished within 4 hours
- minimise the spread of fire within the site and to neighbouring sites

5f Adding an installation

N/A

6 Environmental risk assessment

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.

Site tank inventory

Tank Purpose	Number of storage facilities	Design and material of tank construction	Capacity of each tank (m^3)
Centrifuge Feed Tanks	2	Covered concrete vessel, partly underground	2125m^3
Sludge holding tanks	6	Concrete vessel partly underground	2125m^3
Emergency sludge lagoon	1	Concrete lined reservoir	15500m^3
Diesel fuel tank	1	Steel	60 m^3

Daily service diesel tank	1	Steel	1.8m³
Antifoam Dosing	1	Composite steel and plastic	1m³
Washwater tank	1	Steel	120m³
Storm water pumping station	1	Covered concrete, partly underground	1650m³
Polymer Powder Internal Storage Unit	2	Steel vessels	15 m³

Designated Site Review

A Nature and Heritage Conservation Screening Report (April2022) for the site generated by the EA identifies a local wildlife site within 200m of the site (Old Slade Lake). The nearest source protection zoned area is 1.9km.

All other statutory land based designations identified from DEFRA's magic maps tool are found over 2km from the site. The site is not within an air quality management area.

For habitat sites, the relevant distance for consideration are: International designations (SAC, MPA, SPA and Ramsar - 10km); National designations (SSSI – 2km); Local and National Nature Reserves, LWSs and areas of Ancient Woodland (2km).

Site Type	Site Name	Distance from ISSDC Boundary
Special area of Conservation	Windsor Forrest & Great Park	~7.2km
Special Protection Area	South West London Waterbodies	~2.3km
RAMSAR	South West London Waterbodies	~2.3km
SSSI's	Wraysbury Reservoir	~2.3km
	Wraysbury No. 1 Gravel Pit	~4.1km
	Staines Moor	~3.6km
	Wraysbury & Hythe End Gravel Pits	~4.5km
Local Wildlife Sites	Old Slade Lake	40m

There are SACs, SPAs and Ramsar within 10 km of the site and there are no LNRs or NNRs sites within 2 km of the site.

European Eel, a protected species, are found in Old Slade Lake. The nearest watercourse is Colne Brook which is approximately 20m from the site at it's nearest point (southern boundary). The nearest source protection zoned area is 1.9km. There is no point source direct discharge to the brook.

The site sits outside the boundaries of a Source Protection Zone (SPZ).

The permitted area of the site does not sit within Flood Zone 2 or 3. The site does not have a high probability of any flooding. Small areas of the permitted area have a low extent surface water flooding risk.

The site is not located within an AQMA; however, there are two within close proximity of the site, namely:

- Buckinghamshire AQMA, which is declared for Nitrogen Dioxide (NO_2) – Annual Mean, is located approximately 130 m to the North of the site.
- London Borough of Hillingdon AQMA, which is declared for Nitrogen Dioxide (NO_2) – Annual Mean, is located approximately is 450m to the South-East of the site.

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
Amenity issues: Litter, vermin and pests	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, amenity and recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. The site is located approximately 5.8 km South East of the town of Slough, Berkshire and is bounded by Old Slade Lake and Colne Brook to the East and South East respectively. The nearest residential dwellings, comprising a row of houses, is located on the site's Northern boundary. The nearest residential property is located approximately 240 m from the site and the nearest sludge asset (emergency sludge lagoon). Ecological receptors: There are SACs, SPAs and Ramsar within 10 km of the site and there are no LNRs or NNRs sites within 2 km of the site. There are no designated SSSI within the relevant 2km distance of the site. There is one non-statutory designated LWS within 2 km of the site, namely the Old Slade Lake LWS, located approximately 40m to the East of ISSDC.	The wastes handled at the site are primarily liquids and sludges delivered by sewer or tanker. As such, there is no source of litter within the materials handled at the site. In the unlikely event pests or vermin are observed on site a suitable contractor is called in as soon as practicable.	X
Dust and Bioaerosol	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Litter above. The impact of dust on human health will depend on the distance and wind direction. For bioaerosols this is 250 m.	The wastes handled at the site are liquids, sewage sludges and digested sludge cake. The site will not be handling inherently dusty or powdery wastes. Sludge cake retains a high moisture content and is not dusty and is stored within a dedicated covered cake barn, and therefore dust and bioaerosols will not impact on nearby receptors. Roads will be maintained to avoid the production of dust. Produced sludge cake has sufficient moisture content to ensure it does not give rise to dust. Please see Appendix G for the site specific bioaerosol risk assessment.	√
Assessment of point source emissions to air Emissions deposited from air to land	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Amenity issues above.	Air emissions have previously been assessed by the Environment Agency and deemed satisfactory. Use of the backup generator is limited to emergency situations and testing during planned maintenance activities Fugitive emissions to air are assessed in Table C4-3b(i).	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
	The impact of emissions from air on human health will depend on the distance and wind direction.		
Assessment of point source and fugitive emissions to water	The Old Slade Lake is located immediately to the East of ISSDC approximately 40 m from the permit boundary. Colne Brook Lake is located immediately to the South East of ISSDC approximately 30 m from the permit boundary. An unnamed waterbody lies (land drain ditch) close to the site's Western permitter is within 4m of the boundary. The vast majority of surface water drainage from within the site is returned to Mogden WwTW works for further treatment, with the exception of surface water drains at the back of the admin office which drain to the land drain ditch. All drainage from the area of sludge treatment is transferred to Mogden WwTW works, including tank rainwater, overflow and all dewatering liquors.	The site is not located within an AQMA. The main product of the process is a sludge cake, which is not stored within Flood Zone 2 or 3, within a dedicated covered and impermeably surfaced cake barn. Other aqueous discharges generated by waste treatment are limited (comprising only dewatering liquors, tank rainwater and surface water run off). These sources are discharged to the on-site drainage system where they are transferred to Mogden WwTW works inlet. Due to the nature and small quantity of these emissions no further assessment of point source emissions is not deemed necessary.	X
Assessment of odour	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Amenity issues above. The impact of emissions from odour on human receptors will depend on the distance and wind direction.	ISSDC has processes in place to minimise odour which includes physical containment, odour abatement, management systems, procedures and monitoring to control fugitive emissions of odour at the plant. ISSDC has an Odour Management Plan which is appended as Appendix C. Odour emissions are assessed in Table C4-3b (ii). The site has not been subject to large numbers of frequent odour complaints.	X
Energy	Global atmosphere (direct and indirect emissions).	Good maintenance procedures will help the plant to run efficiently and reduce site energy consumption. Use of LED lighting reduces site electricity consumption. Insulated hot water pipes minimises heat losses during transmission.	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
Land and disposal of waste to other processes	Rivers and streams – see Assessment of point source and fugitive emissions to water above. Drainage systems/sewers. The site lies outside the boundaries of any Groundwater source protection zones (SPZ). Aquifers are classified as Principal (superficial deposits).	All waste streams are taken off-site for recovery or disposal and will continue to be transferred (and consigned where hazardous) to appropriately permitted facilities.	X
Noise and vibration	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, amenity and recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. The site is located approximately 5.8 km South East of the town of Slough, Berkshire and is bounded by Old Slade Lake and Colne Brook to the East and South East respectively. The nearest residential dwellings, comprising a row of houses, is located beyond the site's Northern boundary. The nearest residential property is located approximately 240 m from the site and the nearest sludge asset (emergency sludge lagoon). Ecological receptors: There are SACs, SPAs and Ramsar within 10 km of the site and there are no LNRs or NNRs sites within 2 km of the site. There are no designated SSSI within the relevant 2km distance of the site. There is one non-statutory designated LWS within 2 km of the site, namely the Old Slade Lake LWS, located approximately 40m to the East of ISSDC.	Site design minimises the impact of noise on offsite receptors through building orientation, finishes and location of openings. Backup generator is located at the north western area of the site and is enclosed within a container. Noise from plant and equipment will be minimised through purchasing decisions and a robust preventative maintenance programme. All waste processing operations are located within an enclosed building. There will be no sources of vibration within the facility. Noise and vibration emissions are assessed in Table C4-3b(iii). The site has not been subject to a large number or frequent noise complaints.	X
Other issues (including visual impact)	Protected Species & Habitats	There are records of protected fish located within the specified screening distance (within 500m) of the site associated with Colne Brook. This watercourse has been protected as migratory route for European Eel and Atlantic Salmon. The site does not discharge directly to the above watercourse and the final effluent discharge is to Mogden WwTW (holding a separate environmental permit), which also takes into account designations.	X

Appendix 2 – Date of birth information for Relevant offences and/or Technical ability questions only

This information has been supplied separately for the ease of exclusion from the public register.

5. Form C4 Questions

1 About the permit

1a What waste operations are you applying to vary?

Treatment of waste : physico-chemical

Waste operations which do not form part of an installation

This is a change of permit type from a standard rules permit to a bespoke waste operation permit. ISSDC does not meet qualifying criteria of the new consolidated SR 2021 No.10 permit. This includes (but not limited) ISSDC is not described under EPR as a Part A(1) installation and that Anaerobic digestion of waste sludge is not undertaken at the facility. No other standard rules set is now applicable for ISSDC. The process has not significantly changed since EA issue of environmental permit EPR/DP3291SW in January 2009. Biological treatment is not undertaken at the facility.

Table 1a – Waste Operations which do not form part of an installation

Name of the waste operation	Description of the waste operation	Annex I (D Codes and Annex II (R codes) and descriptions	Hazardous waste treatment capacity	Non-hazardous waste treatment capacity
Sewage Sludge Dewatering	Treatment consisting only of blending, mixing, separation, thickening and/or compaction of waste for recovery.	R03: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)	N/A	
Sludge Cake Storage	Storage of dewatered digested sludge cake in a dedicated building prior to offsite recovery by Land treatment resulting in benefit to agriculture or ecological improvement	R13 - Storage of wastes pending any of the operations numbered R01 to R12 (excluding temporary storage pending collection on the site where it is produced).	N/A	
Dewatering liquor storage	Storage of dewatering liquors and surface water run-off via site drainage to pumping station for treatment offsite at Mogden WwTW.	D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)	N/A	
For all waste operations	Total waste storage capacity		N/A	Waste sludge max capacity – <35,000m^3 Sludge Cake max capacity - 37,000 tonnes
	Annual throughput (t/yr)		N/A	1.56Mt per year

1b –Types of waste accepted and restrictions

19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only)
19 08 05	sludges from treatment of urban waste water

1c Deposit for recovery purposes

This is not a deposit for recovery application.

2 Point source emissions to air, water and land

Table 2 – Emissions

Point source emissions to air				
Emission point reference and location	**Source**	**Parameter**	**Quantity**	**Unit**
A1 – North West end of site	5.5MW Backup generator exhaust	Oxides of Nitrogen (NO and NO2 expressed as NO2)	<500	mg/Nm^3
A2 – Mid-western boundary	Odour Control Unit (2 stage biofilter and activated carbon)	Hydrogen Sulphide H_2S	-	ppm
Point source emissions to water				
W1 – Mid-eastern boundary discharge into Old Slade Lake	Sludge cake barn and centrifuge building roof water drainage direct to Old slade lake.	No parameters set		No limit
W2 - Mid-western boundary surface water discharge into a land drain	Uncontaminated surface water run off from a pedestrian island near to the admin officees	No parameters set		No limit
Point source emission to sewer				
S1 – Return pumping station, western boundary	Dewatering liquor, site surface water drainage and tank rainwater (from the storm water pumping station chamber) pumped to Mogden WwTW via one of three interchangeable	Flow	3500	m^3 /day

Point source emissions to air				
Emission point reference and location	**Source**	**Parameter**	**Quantity**	**Unit**
	pipelines for full treatment			

3 Operating techniques

3a Technical standards

Description of the waste operation activity	Relevant technical guidance note	Document Reference
Sewage Sludge Dewatering (R03)	EA guidance – S5.06 Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste	
Sludge Cake Storage (R13)	EA Guidance - Non-hazardous and inert waste: appropriate measures for permitted facilities	https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities/6-emissions-control
Dewatering liquor storage (D15)	EA Guidance - Non-hazardous and inert waste: appropriate measures for permitted facilities	https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities/6-emissions-control

3b General requirements

If the TGN or H1 assessment shows that emissions of substances not controlled by emission limits are an important issue, send us your plan for managing them.

Although screened out of the detailed Risk Assessment (Question C2 Q6), due to the nature of the process the waste operation has the potential to generate fugitive emissions to air and water, which are subject to a number of process controls.

Risk Matrix and Terminology for Accident for Risk Assessment

Likelihood ↓	Consequence		
	Low	**Medium**	**High**
Low	Low	Low	Medium
Medium	Low	Medium	High

High	Medium	High	High

Classification of Likelihood

Classification	Definition
Low	Probability of an event is low and likely only to occur in the long-term (a yearly basis or less frequent).
Medium	It is probable that an event will occur periodically in the medium-term (twice yearly basis).
High	An event is very likely to occur in the short-term (monthly or weekly basis) and is almost inevitable over the long-term OR there is evidence at the receptor of harm or pollution.

Classification of Consequences

Classification	Definition
Low	Impact is low or a minor, short-term nuisance. Minor release to a non-sensitive receptor or pollution of water course. Non-permanent health effects to human health (easily prevented by appropriate use of PPE). Minor surface damage to a building, structure, service or the environment which can be repaired immediately.
Medium	Impact is noticeable in the short to medium-term. Large release impacting on the receiving media which kills flora and fauna and requires remediation. Nuisance causing non-permanent health effects to human health. Damage to buildings, structures and services which prevents use in the short-term and/or requires a specialist repair.
High	Impact is significant, wide-ranging, and long-lasting effect. Has either a chronic or acute impact on human health. Very large release that has a major impact on flora and fauna which may be very difficult to remediate. Significant damage to a single or multiple building, structure and service which prevents use over a long term and may require complete replacement. May cause a long-term impact or contribute towards a global issue due to releases of greenhouse gases.

The following categorisation of risk has been developed and the terminology adopted as follows:

Term	Definition
Low	A level of harm is possible although this may not be noticeable to a receptor and would be a short-term event without lasting effects. Level of harm can be reduced using industry best practice and appropriate measures and techniques.
Medium	A level of harm may arise to a receptor which is noticeable although not long-lasting and may require some remedial actions in order to prevent re-occurrences.
High	A level of harm is likely to arise to a receptor that is severe causing significant harm to human health or the environment without appropriate remedial and mitigation measures being implemented. Remedial works to infrastructure and processes is required in the long-term.

Although screened out of the detailed Risk Assessment (Question C2 Q6), due to the nature of the processes, the anaerobic digestion operations and digested sludge cake storage, along with biogas utilisation have the potential to generate fugitive emissions to air and water, which are subject to a number of process controls.

Table C4-3b(i) Fugitive emissions risk assessment

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
Emissions to air of NOx, SO_2, CO_2 and VOCs	Normal	Emissions to air and dispersion leading to inhalation by local human and animal receptors	Low	Low	Low	Activities are managed and operated in accordance with the site management system (including inspection and maintenance of equipment, including engine management systems). Emissions testing is part of the maintenance and testing regime.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
Release of bioaerosols and dust	Normal	Emissions to air and dispersion leading to inhalation by local human and animal receptors. Odour impact of bioaerosols. Nuisance impact of dust.	Low	Low	Low	The risk of bioaerosol and dust is largely minimised by storing the sludge cake within a covered cake barn The nearest commercial properties are located approx. 220m to the South-East of the cake barn, and nearest residential site is located approx. 240 m to the North (beyond the M4 motorway). Sludge cake retains a high moisture content and is not prone to windblown dispersion leading to the generation of dust. Mitigation options available in the unlikely event of dust generated including water spraying. Internal site roads are made from concrete/asphalt and not prone to the generation of dust. Please see Appendix G for the site specific bioaerosol risk assessment.	Low
Release of bioaerosols and dust from spillages	Abnormal	Emissions to air and dispersion leading to inhalation by local human and animal receptors with potential harm to health.	Low	Medium	Low	The risk of bioaerosol and dust is largely minimised by storing the sludge cake within a covered cake barn	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
		Odour impact of bioaerosols. Nuisance impact of dust.				The nearest commercial properties are located approx. 220m to the South-East of the cake barn, and nearest residential site is located approx. 240 m to the North (beyond the M4 motorway). Roads are made from concrete/asphalt and not prone to the generation of dust. Mitigation options available in the unlikely event of dust generated including water spraying. Staff responsible for site housekeeping and cleaning of spillages in a timely manner.	
Spillage of liquids, including chemicals, diesel and oils.	Abnormal	Emissions to surface waters close to and downstream of site. Acute effect resulting in loss of flora and fauna. Chronic effect resulting in deterioration of water quality Emissions to ground and ground water.	Low	Medium	Medium	The closest surface waters are adjacent to the site's Eastern boundary, Old Slade Lake and Colne Brook. The site lies outside any groundwater Source Protection Zones (SPZ). Chemicals, fuels and oils are all stored within suitably bunded tanks and IBCs with rainwater removed as required to maintain 110% capacities. Handling and use of chemicals and oils is carried out by trained personnel. COSHH data sheets available.	Medium

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						Spill kits are available on site. X2 point source emissions to water are located away from waste treatment and processing areas and associated with roof water and raised pedestrian island surface water drainage. The vast majority of surface water drainage is initially contained within pumping station chambers prior to being pumped to Mogden WwTW	
Spillage from storage and overtopping of tanks, leakage from same tanks and from buried pipes	Abnormal	Emissions to surface waters close to and downstream of site. Acute effect resulting in loss of flora and fauna. Chronic effect resulting in deterioration of water quality Emissions to ground and ground water.	Low	Low	Low	The closest surface waters are adjacent to the site's Eastern boundary, Old Slade Lake and Colne Brook. The site lies outside any groundwater Source Protection Zones (SPZ). Provision of suitably structurally integral tanks constructed from concrete and steel and glass reinforced plastic/insulation (where needed). All tanks are subject to asset inspection and proactive maintenance programme including regular visual inspection for cracks or weeping. Visual checks during regular day-to-day operations and scheduled preventative maintenance of equipment, such as pumps, pipes, joins etc Spill kits available on site.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						X2 point source emissions to water are located away from waste treatment and processing areas and associated with roof water and raised pedestrian island surface water drainage. The vast majority of surface water drainage is initially contained within pumping station chambers prior to being pumped to Mogden WwTW	
Generation of solid waste resulting in litter	Normal	Releases of litter to the environment. Visual nuisance and local loss of amenity	Low	Low	Low	Site operations do not give rise to large amounts of solid wastes and litter that would be prone to dispersion by wind. Solid waste within sludge is treated through maceration. Sludge cake waste is stored securely for collection by appropriately licensed approved contractors. Litter picking activities can be completed as required.	Low

Where the TGN or H1 assessment shows that odours are an important issue, send us your odour management plan.

Due to the nature of the process, the waste operation has the potential to generate odorous emissions resulting from the permitted activities. Odour management is a key operational objective, as summarised in the risk assessment table below. A copy of the site-specific Odour Management Plan has been appended to this application as Appendix F.

Table C4-3b(ii) Odour risk assessment

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
H_2S emissions from uncovered tanks	Normal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Low	Low	Low	The nearest commercial properties are located approx. 220m to the South-East of the cake barn, and nearest residential site is located approx. 240 m to the North (beyond the M4 motorway). Very small amounts may be generated within the sludge storage tanks, emergency sludge storage lagoon which are uncovered but located within central areas of the site. H_2S production is controlled through the sludge mixing process in tanks which reduces risk of anoxic zones and H_2S production increase.	Low
Storage of treated sludge cake	Normal	Emissions to air and dispersion leading to inhalation by local human receptors	Medium	Low	Low	Sludge cake is stored within a dedicated covered cake barn and is inherently low odour material. The nearest commercial properties are located approx. 220m to the South-East of the cake	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
		Loss of amenity from odour nuisance				barn, and nearest residential site is located approx. 240 m to the North (beyond the M4 motorway). Should any odorous sludge cake be produced, this will be subject to process checks undertaken to identify root cause of production and removed from site expediently.	
Failure of odour control unit	Abnormal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Low	High	Medium	Odour control unit is subject to regular preventative maintenance. Media is replaced in line with the manufacturer's recommendations	Low
Storage of site generated wastes	Normal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Low	Low	Low	Wastes generated on site are not inherently odorous and stored securely for collection by appropriately licensed approved contractors.	Low

If the TGN or H1 assessment shows that noise or vibration are important issues, send us your noise or vibration management plan (or both)

The requirement for a noise and vibration management plan has been screened out. The waste operation has the potential to generate noise as a result of the permitted activities. Potentially noisy activities are subject to a number of process controls and noise management is a key operational objective, as summarised in the risk assessment table below.

Table C4-3b(iii)Noise risk assessment

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
Operation of site vehicles	Normal	Generation of noise with air transportation, causing loss of amenity to local human receptors. Generation of vibration with ground transmission, causing loss of amenity to local human receptors.	Medium	Medium	Medium	Vehicle movements across the site are subject to speed limit rules to reduce generation of noise. Nearest receptors to the sludge import point are located in excess of 400 m away. Shovel loading of sludge cake takes place within the dedicated covered cake barn. It's location on site and process reduces risk of noise impacts.	Low
Vehicle movements - tanker deliveries of sludge and bulk collections of sludge cake	Normal	Generation of noise with air transportation, causing loss of amenity to local human receptors. Generation of vibration with ground transmission, causing loss of amenity to local human receptors.	High	Medium	High	Vehicle movements across the site subject to speed limit to reduce generation of noise. Nearest receptors to the sludge import point are located in excess of 400 m away. Shovel loading of sludge cake takes place within the dedicated covered cake barn. It's location on site and process reduces risk of noise impacts.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						Majority of vehicle movements (including for bulk collections) normally take place during daytime only.	
Vehicle movements - tanker deliveries of chemicals and raw materials	Normal	Generation of noise with air transportation, causing loss of amenity to local human receptors. Generation of vibration with ground transmission, causing loss of amenity to local human receptors.	High	Low	Medium	Deliveries likely to take place during daytime hours to delivery areas are mostly within the central area of the site. Vehicle movements across the site subject to speed limit to reduce generation of noise. Storage capacity of chemicals and raw materials does not require significant tanker deliveries.	Low

3c Information for specific sectors

The waste operation does not undertake activities within sectors described in table 3c.

4 Monitoring

4a Describe the measures you use for monitoring emissions by referring to each emission point in Table 2 above

The air emission points A1-A2 are monitored in accordance with EA guidance The Odour Control Unit also has process pH monitoring of irrigation water in addition to monitoring for Hydrogen Sulphide. This data is logged.

There is no routine monitoring proposed for points A1 and A2 (Specified Generator and OCU).

For emission point S1 at ISSDC, flow meters are positioned at either end (Mogden WwTW) of the pipeline . Any change in the flow readings will cause the sludge pumping operation at Mogden WwTW to be inhibited.

4b Point source emissions to air only

Sampling locations are not designed to meet BE EN 15259 clause 6.2 and 6.3. Sample ports are not large enough for monitoring equipment positioned in accordance with section 6 and appendix A of BS EN 15259. Access adjacent to monitoring ports is not large enough to provide sufficient working area, support and clearance for a sample team to work safely with their equipment throughout the duration of testing. Sample locations are not at least 5HD from stack exits. Sample locations are not at least 2 HD upstream from any bend or obstruction. Sample planes do not have a constant cross-sectional area.

Monitoring has been completed under the current permit via a combination of other standards and methods, as per previous monitoring requirements stated within the Environmental Permit. This has been in accordance with Environment Agency guidance note M2 'Monitoring of stack emissions to air' which is based on BS EN 15259. Not all sampling ports and locations may meet all requirements and therefore the answer 'no' has been provided while these are checked onsite.

6. Form C6 Questions

The relevant questions within the form are those applicable to effluent and / or surface water run-off arising from the operation of an installation.

Q1About the effluent – details and type, continued

1a Give a brief description of the effluent discharge you want a permit for, for example, treated domestic sewage effluent

This effluent is a mixture of waste liquors from the operation of the waste treatment, dewatering of sewage sludge. It primarily comprises of dewatering liquors transferred to Mogden WwTW following the dewatering of treated sewage sludge. Lower volume constituents will include rainfall; OCU water; contaminated run off and washdown water. UWWTD flows are also combined in the Return Pumping station to transfer to Mogden WwTW for full treatment.

1b Give this effluent a unique name

Liquor returns.

1d Have you obtained all the necessary permissions in addition to this environmental permit to be able to carry out the discharge (see B6 guidance notes for more details)?

Yes. The discharge is into the inlet of Mogden sewage works controlled by the applicant.

Q2 About the effluent – how long will you need to discharge the effluent for?

2c Will the discharge take place all year?

Yes, the discharge will take place all year.

Q3 How much do you want to discharge?

3b What is the maximum volume of effluent you will discharge in a day?

3500 Cubic metres

3c What is the maximum rate of discharge?

146 Litres / second

3d What is the maximum volume of non-rainfall dependent effluent you will discharge in a day?

3500 Cubic metres

3f For each answer in question 3, show how you worked out the figure on a separate sheet

Q3b –based on the maximum site input to the centrifuges, assuming 1 tonne = 1 cubic metre. The liquor arisings must come from the site inputs as there is limited additional water inputs (primarily polymer water, balancing water, antifoam dosing, OCU irrigation water change). Actual discharge will be slightly lower as no allowance has been made for water entrained in the produced sewage cake.

Q3c – this is based on the maximum pump rate within the return pumping station.

Q3d – based on the maximum centrifuge feed pump rate, assuming 1 tonne = 1 cubic metre. The liquor arisings must come from the site inputs as there is limited additional water inputs (primarily polymer water, balancing water, antifoam dosing, OCU irrigation water change). Actual discharge will be slightly lower as no allowance has been made for water entrained in the produced sewage cake.

Q4 Intermittent Sewage Discharges

N/A. Transfers to Mogden WwTW are not intermittent as the return pumping chamber also receives UWWTD flows.

Q5 Should your discharge be made to the foul sewer?

5a How far away is the nearest foul sewer from the boundary of the premises?

0m. The return pumping station is within the ISSDC transferring to Mogden WwTW.

5b1 Discharges from domestic properties

Not applicable

5b2 Discharges from all other premises including trade effluent

Not applicable, the site discharges directly into Mogden works inlet via the return pumping station pipeline.

Q6 How will the effluent be treated?

6a Do you treat your effluent?

No. The Effluent generated by the process of treating sewage sludge is transferred directly to Mogden WwTW to, where it is subject to full treatment in a mixture with UWWTD related waste waters.

6b Fill in Table 2 for each stage of the treatments carried out on your effluent in the order in which they are carried out

Order of Treatment	Code Number	Description
First	09	Primary settlement within sewage works
Second	31	Activated sludge process
Third	21	Sand filtration

6c You must provide details on a separate sheet of the final effluent discharge quality that the overall treatment system is designed to achieve

The final effluent discharge from Mogden sewage treatment works is specified in Environmental Permits (TH/CNTD.0085).

Q7 What will be in the effluent?

7b Are any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' added to or present in the effluent as a result of the activities on the site?

At present, no sampling or analysis for all substances listed within the referenced risk assessment at the site has been undertaken. Only limited chemicals are added to the process within the waste operation boundary, primarily polymer to aid dewatering of sludge and antifoaming agent. A review of the appropriate MSDS data does not indicate the presence of 'specific substances' within those chemicals.

7c Have any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' been detected in samples of the effluent or in the sewerage catchment upstream of the discharge?

At present, no routine sampling or analysis for all substances listed within the referenced risk assessment at the site has been undertaken either for effluent from IVTW or within the return pumping station transferring to Mogden WwTW.

7d Are there any other harmful or specific substances in your effluent not mentioned in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater'?

At present, no sampling or analysis for all substances listed within the referenced risk assessment at the site has been undertaken. A review of the MSDS sheets for chemicals used within the waste operation does not indicate the presence of any other harmful or specific substances.

7e If you have answered 'No' to any of questions 7a to 7d provide details on a separate sheet of how you have established that the effluent is not likely to contain specific substances

A review has been undertaken of the relevant MSDS sheets for chemical used routinely within the waste operation to look for substances identified within the risk assessments listed.

7f What is the maximum temperature of your discharge?

Approx. 20°C to Mogden sewage works. This is dependant on ambient weather conditions

7g What is the maximum expected temperature change compared to the incoming water supply?

Minor variation, dependant on ambient weather conditions.

Q8 Environmental risk assessments and modelling

8b Discharges to lakes, estuaries, coastal waters or bathing waters

The waste operation activities do not discharge to lakes, estuaries, coastal waters or bathing waters.

8d Discharges to groundwater

The waste operation activities do not discharge to groundwater.

8e Discharges to freshwater (non-tidal) rivers from an installation, including discharges via sewer

No modelling has been undertaken on the output from ISSDC waste operation at present, due to a lack of quality data and confirmation of flows. The final effluent discharge from Mogden WwTW, includes the ISSDC effluent transfer arisings has previously been subjected to modelling as part of the environmental permitting discharge application process.

8f Environmental impact assessment

No environmental impact assessment has been carried out on the ISSDC for this variation application, as it is an existing facility.

Q9 Monitoring arrangements

9a What is the national grid reference of the inlet sampling point? (for example, SJ 12345 67890)

Not applicable to this waste operation.

9b What is the national grid reference of the effluent sample point?

No sampling point is installed at present.

9d What is the national grid reference of the flow monitoring point?

A flow meter is positioned at either end of the pipeline. Any change in the flow readings will cause the sludge pumping operation at Mogden WwTW to be inhibited.

9e Does the flow monitor have an MCERTS certificate?

N/A

9f Do you have a UV disinfection efficacy monitoring point?

No. Not installed as part of this waste operation.

9h You should clearly mark on the plan the locations of any of the above that apply to this effluent

Please see site emission point plan.

Q10 Where will the effluent discharge to?

10a Where the effluent discharges to

Tidal river.

Appendix 4 – Discharges to tidal river, tidal stream, estuary or coastal waters

A4.1 Give the discharge point a unique name, for example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

Outlet 1.

A4.2 Give the national grid reference of the discharge point

The final effluent discharge from Mogden sewage treatment works is specified in Environmental Permits (TH/CNTD.0085).

A4.3 Give the name of the tidal river, tidal stream, estuary or area of coastal water if you know it

River Thames.

A4.4 Is the discharge into a:

Tidal river.

A4.5 Does the discharge reach the watercourse by flowing through a surface water sewer?

No.

A4.6 Is the discharge point above the mean low water spring tide mark?

Yes. The discharge point is above the mean low water spring tide mark, and this relates to a fixed pre-existing discharge point to the River Thames.

A4.7 How is the effluent dispersed? For example, open pipe or diffuser system

Open pipe system.

A4.8 Give details, on a separate sheet, of the design of the diffuser system including document reference

N/A.

A4.9 Is the discharge made to a roadside drain or ditch?

No.

10b Is this effluent discharged through more than one outlet?

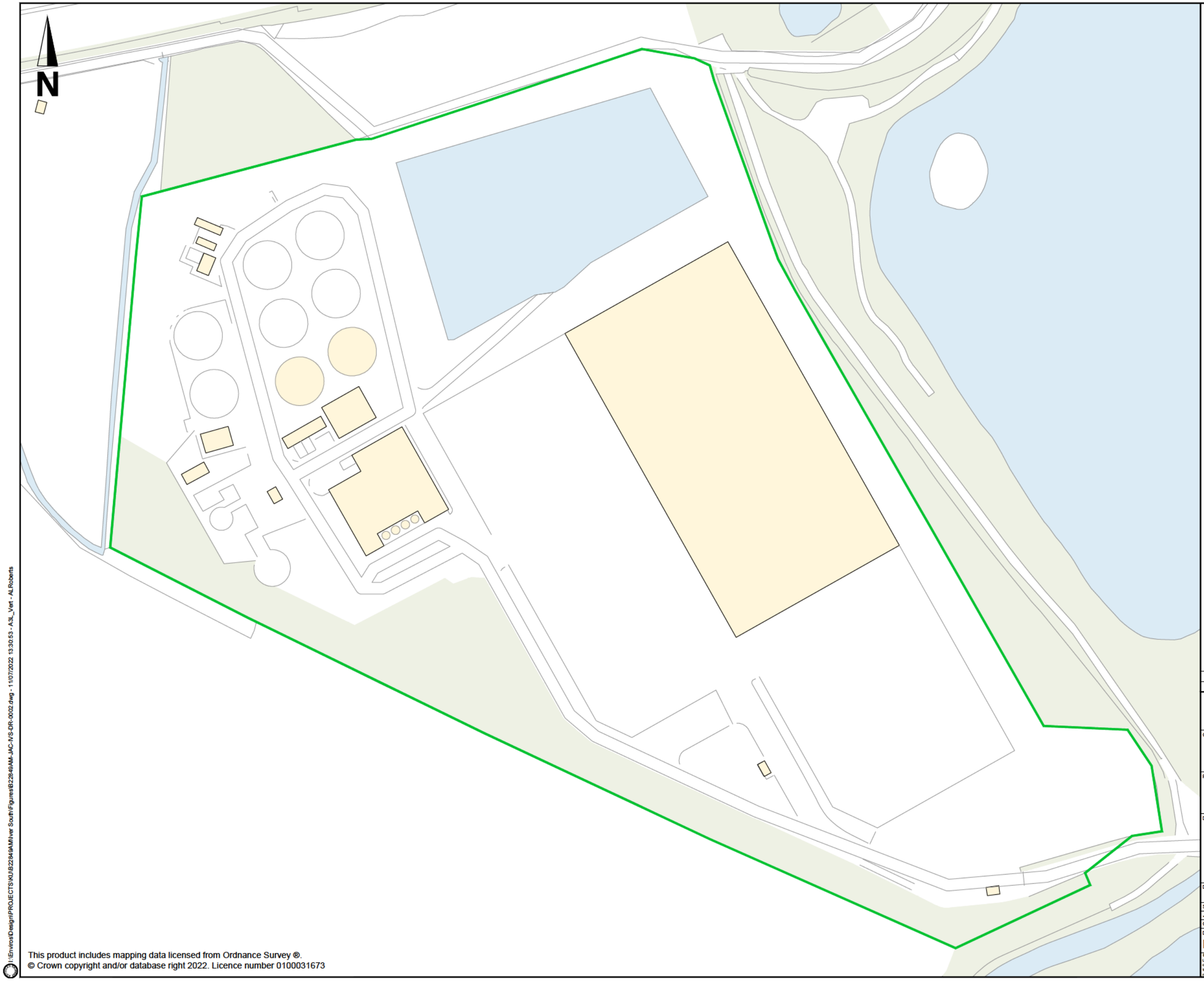
No.

10c If you answered yes to question 10b above make sure you show clearly on your discharge point appendix or appendices and site plan that this one effluent can discharge to more than one discharge point

N / A.

Appendix A. Figures

A.1 Site location plan



P01	APR 2022	FOR INFORMATION	AR	MM	JK	MM
Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd

Jacobs
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Client

Thames Water

Project

STC IED PERMIT
IVER SOUTH STW

Drawing title

FIGURE 2
INSTALLATION BOUNDARY
AND AIR EMISSION POINTS

Drawing status

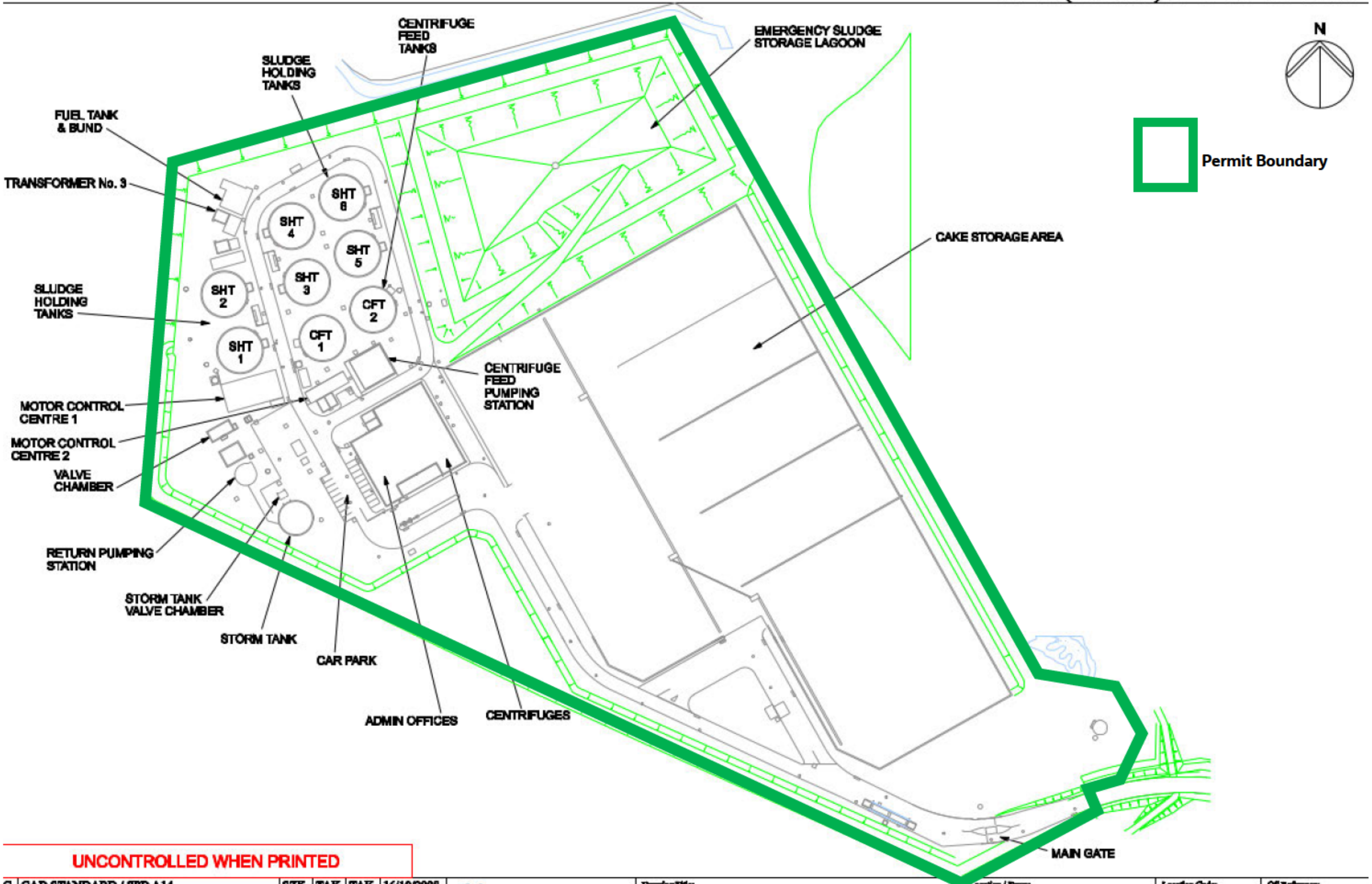
PERMITTING

Scale	1:1500	DO NOT SCALE
Jacobs No.	B22849AM	Rev P01
Client no.		

Drawing number

B22849AM-JAC-IVS-DR-0002

IVER (SOUTH) SLUDGE CENTRE



UNCONTROLLED WHEN PRINTED

Iss	Description	Drawn	Chkd	Appd	Date
C	CAD STANDARD / SPD A14	SZK	TAK	TAK	16/10/2008
B	CHANGED SITE NAME	IMP	TAK	TAK	19/09/2008
A	FIRST ISSUE	JPJ	MJV	MDF	04/03/2008

Thames Water

TECHNICAL INFORMATION
Clearwater Court
Vastern Road
Reading RG1 8DB

Drawing Title:
SITE PLAN

Location / Town:	Location Code:	OS Reference:	
COLNBROOK	IVERZ0ZZ	TQ040778	
Drawing No.: IVERZ0ZZ-SPL-001	Scale: 1:1500	Sheet Size: A3	Rev: C

A.2 Site layout

DO NOT SCALE - IF IN DOUBT ASK

NOTES

1.0 GENERAL

1.1 ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
1.2 ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (NEWYLN).
1.3 ALL DRAWING WORK COMPLETED IN THIRD ANGLE PROJECTION.
1.4 THE ACCURACY OF EXISTING SERVICES INFORMATION CANNOT BE GUARANTEED. ALL SERVICES SHALL BE LOCATED PRIOR TO CONSTRUCTION START.
1.5 DO NOT SCALE FROM THIS DRAWING.
1.6 IF IN DOUBT ASK.

2.0 CIVIL

2.1 THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG No.'S 47RB-A1-23125 AND 47RB-A1-23108.
2.2 DRAW PIT INTERNAL DIMENSIONS AS PER DWG 47RB-A1-23125-IN.
2.3 DUCTS TO BE 150 Ø UPVC OR SIMILAR.
2.4 3 No. 150Ø CABLE DUCTS IL. 21.150m AOD
2.5 10 No. 150Ø CABLE DUCTS IL. 20.150m AOD

LEGEND

- CABLE DRAW PIT
- CABLE DUCTS
- LV — LOW VOLTAGE CABLE
- LC — LIGHTING COLUMN
- CCTV POSITION
- EARTH — CABLE TO EARTH

J	AS CONSTRUCTED	JBC	AJH	05/12/2005
H	ISSUED FOR CONSTRUCTION	RH	AJH	03/08/2004
G	HV DRAWPITS ADDED	RH	AJH	04/06/2004
F	ODOUR CONTROL 3 ADDED	RH	AJH	28/05/2004
E	FIBRE OPTIC LOOP ADDED. CCTV9 ADDED	RH	AJH	28/04/2004
D	GENERAL ALTERATIONS	RH	AJH	05/04/2004
C	ROAD SHOWN	RH	AJH	05/09/2003
B	ISSUED FOR CONSTRUCTION	RH	AJH	28/07/2003
A	FIRST ISSUE			
Iss	Description	Chkd	Appd	Date

Caxton House
Nicholson's Walk
Maidenhead
Berkshire SL6 1LN

BINNIE BLACK & VEATCH
GROSVENOR HOUSE 69, LONDON ROAD
REDHILL, SURREY RH1 1LQ, UNITED KINGDOM

Thames Water Utilities
ENGINEERING
D.J. Glendinning BSc DMS CEng MICE MCIWEM
Engineering Director, Gainsborough House
Manor Farm Road, Reading RG2 0JN

Location Code: TBC	OS Reference: TQ 030 781	Scanify Reference: UBR	Last Accessed: SPA
Project Group: PROCESS		Sub Process: SLUDGE DEWATERING	
Location / Town: TBC			
Site Name: PERRY OAKS			
Project Name: IVER SOUTH SLUDGE DEWATERING WORKS			
Content Name: MAIN			
Drawing Title: CABLING SERVICE DUCTS GA - SHEET 1 OF 2			
Drawing No.: 47RB-A1-23104-IN	Scale: 1 : 500	Sheet Size: A1	Rev: J

S:\CAD\ACD DRGS\DRGS\47RB-A1\47RB-A1-23104-IN-J.DGN
22/02/2006 14:10:13 spurdy

A.3 Site Emissions Plan


N
A1
A2
S1
W1
W2
KEY:
Installation Boundary
Air Emission Point
Liquor Transfer Point
Water discharge points
0
20
40
60
METRES
STC IED PERMIT
IVER SOUTH STW
FIGURE 2
INSTALLATION BOUNDARY
AND AIR EMISSION POINTS
PERMITTING
DO NOT SCALE
P01
B22849AM-JAC-IVS-DR-0002
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A.4 Site drainage plan

IVER (SOUTH) SLUDGE CENTRE

UNCONTROLLED WHEN PRINTED

DRAWING UNAPPROVED BY OPERATIONS

Iss	Description	Drawn	Chkd	Appd	Date
A	FIRST ISSUE - CREATED FROM WERM ACD	VF	DS	PR	31/03/2010

Thames Water

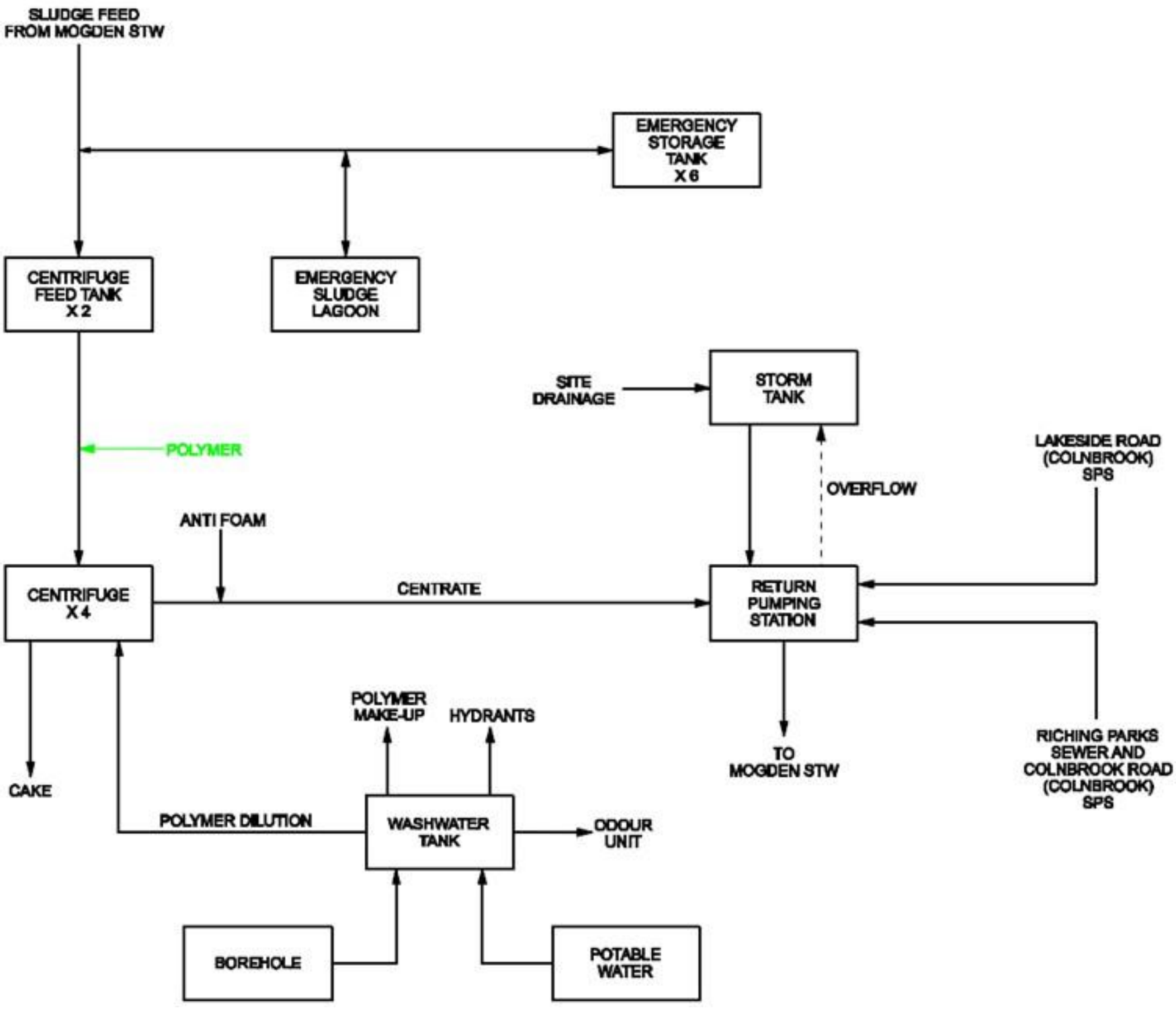
TECHNICAL INFORMATION
Clearwater Court
Vastern Road
Reading RG1 8DB

Drawing Title:
DRAINAGE PLAN

Location / Town: COLNBROOK	Location Code: IVERZ0ZZ	OS Reference: TQ040778	
Drawing No.: IVERZ0ZZ-DPL-001	Scale: 1:1000	Sheet Size: A3	Rev: A

PLOTTED ON $$$$sytime$$$$$$$$$$ BY $$$USR$$$ LOCATION : $$$$$$SITENAME$$$$$$ $$$$dgnspec$$

A.5 Block flow diagram



A.6 Site Photographs

Emergency Sludge Lagoon

Centrifuge Pumping Plant

Centrifuges

Sludge Cake Pad

Inter-site Sludge Reception Points

Return Pumping Station

Diesel Fuel Tank

Appendix B. CoTC

Appendix C. Odour Management Plan

Iver South Sludge Dewatering Centre Bioaerosol Risk Assessment

Document no: *[Document number]*
Revision no: *[Revision number]*

Thames Water Utilities Ltd
EPR/DP3090SF

IED STC Permitting
15 June 2022

Iver South Sludge Dewatering Centre Bioaerosol Risk Assessment

Client name:	Thames Water Utilities Ltd		
Project name:	IED STC Permitting		
Client reference:	EPR/DP3090SF	**Project no:**	B22849AM
Document no:	*[Document number]*	**Project manager:**	Harindra HG Gunasinghe
Revision no:	*[Revision number]*	**Prepared by:**	Alex Wilson
Date:	15 June 2022	**File name:**	ISSDC Bioaerosol RA
Doc status:			

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
0	15/06/2022	ISSDC Bioaerosol RA	Alex Wilson			

Distribution of copies

Revision	Issue approved	Date issued	Issued to	Comments

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Contents

Appendices

Tables

No table of contents entries found.

Figures

No table of contents entries found.

1. Introduction

The purpose of this Bioaerosols risk assessment is to provide supplementary information to support the permit variation application for a bespoke waste operation permit for the Iver South Sludge Dewatering Centre (ISSDC), EPR/DP3291SW.

1.1 Site description

The site is located approximately 1km North of the village of Colnbrook, Slough. Immediately to the south east of the site is the Lakeside Road industrial area including Lakeside Energy from Waste Incinerator. To the north of the permitted site within 70m is the M4 motorway and to the east is the M25 motorway within 600m.

The site sits outside any source protection zones and is outside of an Air Quality Management Area (AQMA). There are a number of habitat sites within the appropriate distance of the STC, including a RAMSAR and SPA, and SAC. A LWS is within 200m of the site (Old Slade Lake).

The address of the waste treatment operation is:

Iver South Sludge Dewatering Centre

Lakeside Road

Colnbrook

Buckinghamshire

SL3 0ED

1.2 Site Activities

ISSDC is operated by Thames Water Utilities Ltd (Thames Water). The site undertakes physico-chemical treatment of sewage sludge, both indigenous and imported from other wastewater treatment sites, by dewatering with centrifuges, with a capacity above the relevant thresholds for requiring an environmental permit.

The site includes:

- Imports of sludge from other sewage treatment works
- Storage of sludges prior to treatment;
- Pre-treatment of sewage sludge by blending, mixing and maceration
- Dewatering of digested sewage sludge through centrifuges
- Transfer of treated dewatering liquors to an on site pumping station for transfer to Mogden WwTW for full treatment.
- Transfer of surface water runoff to an on site pumping station for transfer to Mogden WwTW for full treatment.
- Storage of dewatered digested sludge cake prior to offsite recovery;
- Combustion of diesel in a MCPD emergency back-up generator using compliant diesel;
- Storage of raw materials;
- Odour control unit

The facility currently treats up to 250,000m^3 of sludge per year.

1.3 Regulatory requirements

The sludge treatment activity has previously held an environmental permit.

For permits, if the site is within 250m of sensitive receptors then there is a requirement to monitor bioaerosols in accordance with the EA technical guidance note[1] '*M9: environmental monitoring of bioaerosols at regulated facilities*'. M9 describes bioaerosols and the risks that they pose, as well as identifying potential sources within biological treatment facilities.

ISSDC is within 250m of sensitive receptors, as defined by M9. These are detailed in Section 2.5 of this report.

1.4 Bioaerosols

Bioaerosols are found naturally within the environment. They consist of airborne particles that contain living organisms, such as bacteria, fungi and viruses or parts of living organisms, such as plant pollen, spores and endotoxins from bacterial cells or mycotoxins from fungi. The components of a bioaerosol range in size from around 0.02 to 100 micrometres (µm) in diameter. The size, density and shape of a bioaerosol will affect its behaviour, survivability and ultimately its dispersion in the atmosphere.

Bioaerosols are easily breathed into the human respiratory system, potentially causing allergic responses and inflammation. They also have the potential to cause eye irritation, gastrointestinal illness and dermatitis.

Bioaerosols are associated with composting, anaerobic digestion and mechanical biological treatment, which are the main processes used to treat organic wastes in the UK. As organic waste material breaks down it goes through different temperature dependent stages that are dominated by certain groups of bacteria and fungi. Bacteria are the most numerous group of microorganisms. Aspergillus fumigatus is a mesophilic fungus that is thermotolerant and is present throughout the different stages of the organic breakdown process. This fungus can cause severe respiratory infection if inhaled.

The dependence on microorganisms to degrade organic material and the way in which the material is processed make biological treatment facilities a potential source of bioaerosols. However, we note that the 2012 EA guidance note[2] for developments requiring planning permission and environmental permits states that the EA do not consider bioaerosols from anaerobic digestion to be a serious concern. This is due to the fact, that anaerobic digestion is generally a wet process undertaken in enclosed tanks and equipment, whereas composting is often undertaken using open systems such as windrows and static piles.

The ISSDC Facility does not undertake any aerobic composting activities or anaerobic digestion process on site.

1.4.1 High Risk Activities

The M17 guidance document, in section 3.3.3, outlines a number of potential sources of particulate matter, including bioaerosols from waste management facilities. Although these potential sources are not graded for importance within M17, it should be noted that only two of the potential sources are present at the ISSDC facility that is storage of waste (under certain conditions) and wind scouring of wind surfaces. No movement of waste to the facility is undertaken due to the nature of the site, and no shredding of waste or turning of stockpiles is undertaken.

1.4.2 Relevant Thresholds

Based on the Environment Agency M17 guidance[3] '*M17 Monitoring of particulate matter in ambient air around waste facilities*', and RPS 209[4] guideline levels for the two key identified potential bioaerosols have been set for acceptable levels at sensitive receptors, above background concentrations, as the following:

[1] Environment Agency. July 2019. M9: Environmental monitoring of bioaerosols at regulated facilities

[2] Environment Agency. October 2012. Guidance for developments requiring planning permission and environmental permits

[3] Environment Agency April 2014 M17 monitoring of particulate matter in ambient air around waste facilities https://www.gov.uk/government/publications/m17-monitoring-of-particulate-matter-in-ambient-air-around-waste-facilities

[4] Environment Agency. Guidance: Bioaerosol monitoring at regulated facilities - use of M9: RPS 209

- Total bacteria: 1000 cfu/m^3
- Aspergillus Fumigatus: 500 cfu/m^3

2. Bio aerosol risk assessment

2.1 Introduction

A source-pathway-receptor risk assessment has been undertaken to appraise the potential for risk to human health at sensitive receptors within the relevant distance from operations at the ISSDC Facility. This risk assessment follows a standardised approach, namely:

- Hazard identification: what sources of bioaerosols are present on site.
- Exposure assessment: what are the mechanisms or pathways allowing bioaerosols to migrate off site and reach a sensitive receptor; and
- Risk evaluation: who is potentially exposed to bioaerosols; what is the probability, magnitude, and duration of that exposure.

The assessment describes:

- The processing techniques and equipment used within the installation.
- Feedstock, tonnages processed and any seasonal variations.
- Potential sources of bioaerosols.
- The site layout, including any screens, bunds, or trees around the site.
- What is beyond the site boundaries and the location of sensitive receptors.
- Local wind direction data; and
- Other sources of bioaerosols in the vicinity.

2.2 Processing equipment and techniques

2.2.1 Waste Reception

Sludge is delivered directly into the works be a dedicated below ground pipeline straight into tanks. Incoming sludge, is subjected to preliminary treatment through mixing and balancing, before dewatering

Sludge may also enter the process, via tanker transfer from other TWUL sewage treatment works. These imports are transferred by sealed pipeline from tankers into a sludge tanks within the process.

2.2.2 Waste Treatment

Digested sludge is piped from Mogden WwTW through one of three interchangeable concrete pipelines. The incoming pipelines are directed to 2 no. centrifuge feed tanks. In addition, digested sludge is imported from other satellite TWUL sites to ISSDC by tanker to the sludge reception area. These tanks provide approximately 36 hours of storage. Tanks operate in parallel as well as providing buffering capacity for downstream treatment. Each tank has a dedicated pump recirculating sludge from the bottom through 6 no. nozzles whilst also injecting air. The air mixing provides improved sludge mixing to avoid anoxic zones within the sludge. There are 3 no. blowers (d/d/s basis) serving both tanks through a common manifold.

There is also contingency sludge storage installed on site and available for additional sludge storage prior to treatment if required. This consists of 6 no. emergency sludge holding tanks, an emergency sludge storage lagoon, connecting pipework and pumping capabilities.

From the 2 no. centrifuge feed tanks, sludge is pumped from a central main feed up to 4 no. dewatering process streams. Each Stream consists of an inlet valve, macerater, pump, flowmeter, decanter centrifuge and solids conveyor. Dewatering plant & equipment is installed within the main processing building.

Polymer make-up is in 2 no. package plants. Each polymer preparation stream consists of an integral storage unit, powder transfer system and two combined mixing and storage tanks. 4 no. cavity pumps draw polymer from the bulk storage and deliver it to the 4 no. dewatering streams. Polymer dilution pumps take water from the washwater balance tank and dilute the polymer prior to dosing, to improve dispersion.

Centrate separated from centrifuge dewatering treatment is dosed with antifoaming agent by one of 4 no. dedicated variable stroke diaphragm pumps into a stilling tank beneath each centrifuge.

From the stilling tanks, centrate is pumped into the return pumping station chamber. The centrate is combined with flows from site surface water drainage, tank rainwater, dewatering building foul sewer and off-site UWWD flows. At the return pumping station chamber, flows are pumped to Mogden WwTW through one of three interchangeable below ground concrete pipelines. There are 4 no. pumps operating in pairs (2 no. duty and 2 no. standby). The pumps are controlled principally under automatic control. The return pumping station is also fitted with an overflow connection to the storm water pumping station chamber.

A 1500kVA diesel backup generator is located on the site.

2.2.3 Digested cake

Sludge cake collected from centrifuge treatment is transferred by covered conveyor from the dewatering building to an external impermeable concrete pad cake unloading area. From here its is then moved by mobile loader trucks to storage bays in a dedicated indoor cake storage building pending collection.

Sludge cake is loaded from storage bays into tipper trucks covered and weighed on the weighbridge, where the permitted activities end. The cake is transferred onto trucks using an excavator and loading shovel and removed off site for agricultural land spreading.

2.2.4 Odour Control Units

Sludge treatment works have a number of potentially odorous sources within their boundary. During site assessment and design, some of these sources may be linked to odour control units (OCUs) to treat potentially odorous compounds given off by the process. These units take air extracted from above tanks or process areas, and treat the odours compounds by means of different methodologies dependent upon the nature of the odours compounds. Treatment methodologies include activated carbon systems; biofilters or other biological treatment; and chemical scrubbing. Individual OCUs may use one or more of these methodologies in series.

Under the M9 guidance documents, the Environment Agency has identified that biofilters may give rise to bioaerosols during operation. It has been assumed that in cases where biofilters are operated in OCUs in parallel with a second methodology, this would exclude the OCU as a source of bioaerosols as the secondary treatment methodology would remove them from the exhaust.

A two stage OCU is installed at ISSDC for treating higher odour risk air streams. The OCU consists of an enclosed MONASHELL irrigation bed biofilter and x2no. carbon filtration polishing vessels, released via a stack. The OCU treats extracted air from:

- 2 no. centrifuge feed tanks
- 4 no. centrifuges
- Storm tank pumping station chamber
- Return pumping station chamber

The biofilter unit is a potential source of bioaerosols. The configuration of this unit means that bioaerosols associated with the biofilter are captured by the activated carbon. While the scrubbers are unable to remove 100% of bioaerosols, any bioaerosol emissions released from the odour control are anticipated to be de minis.

2.2.5 Seasonality

Sludge treatment is undertaken at ISSDC on a continuous basis, every day 365 days of the year. Sludge cake is, therefore, produced daily and at similar levels across the whole year.

However, cake storage on site, both in relation to duration and volume, varies across time. Cake is removed from site for spreading to land. Land spreading is controlled under the Biosolids Assurance Scheme and Sludge Use in Agriculture Regulations (1989), as well as the Farming Rules for Water. As such, sludge will

remain on site longer during wet periods and during autumn and winter periods where there would be limited uptake of nutrients from the solids. This means that there will be more cake within the storage bays during the autumn and winter, under normal conditions, than during the summer period.

2.3 Potential Sources

There are two point-source emissions to air from the processes within the waste operation boundary, at the following locations. The references and source descriptions match those in the permit:

Air emission reference	Source	In scope?
A1	Emergency backup diesel generator	X
A2	OCU	✓

The location of these discharge points is shown on the site layout plan at the emission plan in Appendix A.

2.3.1 Source Assessment

The OCU, A2, serves the sludge dewatering operation at ISSDC, taking potentially odorous air tanks/chambers. This odour control unit is a two stage unit comprising a biofilter and dry scrubber system. Extracted air from tanks/chambers is passed through the support media, which is MONASHELL, within the biofilter, while water is irrigated from above. The microbes on the support media, remove potentially odorous contaminants and the partially treated air from the bio-trickling filter is passed to 2 No. Activated Carbon adsorbers to achieve a stack emission standard of <= 1000 $OuEm^3$ at the outlet. Treated air discharges via the stack. The configuration of the OCU means that any bioaerosols emitted from the biofilter stage should be captured by the activated carbon stage, and therefore, the likelihood of bioaerosol release is anticipated to be minimal.

In addition to the point sources identified above, there is also an unchanneled potential release from treated, dewatered sewage cake which is stored in the cake barn at the site. Another potential source is from 6No. open topped emergency sludge storage tanks and an emergency sludge storage lagoon.

2.3.2 Risk

The overall treatment process is considered to a be a low source of bioaerosols as discussed above, there are a number of control measures in place at the site to reduce and contain emissions of bioaerosols. These control measures are regularly maintained to sustain their efficacy and reduce the risk of equipment failure. The greatest probability of exposure from bioaerosols emitted from the site is from uncovered operations such as the cake bay, cake conveyor and uncovered tanks/lagoon.

However, the cake is at the end of the sludge treatment process, is managed to control height and arrangement, and is located within a building minimising water infiltration and air flow. The cakes has also been produced to a standard where it requires no further treatment before being deposited on agricultural land and therefore is likely to have a low concentration of bioaerosols, therefore the probability of exposure from this source is also minimised.

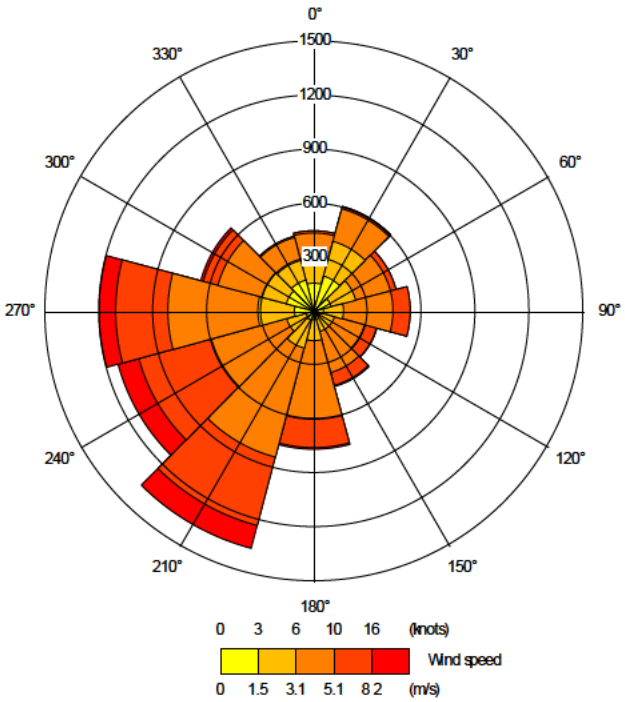
The potential bioaerosol risk from sludge storage in uncovered tanks and lagoon is managed to be minimal through their use only as a contingency or emergency during abnormal operation or peak flows beyond the covered centrifuge feed tanks' capacity. Sludge recirculation is undertaken from the bottom of tanks, which minimises the level of surface turbidity.

2.4 Pathways

Bioaerosols are very small and light in weight so can easily be transported by the wind from their source to a receptor. The 2019 wind rose for the most representative meteorological site, Heathrow airport (located approximately 1.5 km South East of the Site), is shown in figure 1.

The wind rose data shows that the site experiences strong prevailing south westerly winds, predominantly in excess of 6 knots. The ISSDC site and surrounding area has a relatively flat topography. The site has screening to the north and west by mature trees along M4 and M25 motorway and along the site boundary.

Figure 1 – Heathrow Airport Wind rose (2019)



Because of the dilution effect in open air, bioaerosol concentrations fall away rapidly with distance from the source. It has been shown by research by the HSE[5] that by 100 to 200m away, the bioaerosol concentration has mostly returned to background levels. Between 50m and 100m distances downwind of the process, bioaerosol concentrations were substantially reduced by comparison to those level measurements at source. RR786 confirmed previous published studies which showed that at a distance of 250m from composting activity, in most cases, the bioaerosol concentrations will be reduced to background levels. Note that this research was undertaken on aerobic composting sites, which generate higher levels of bioaerosols than sludge dewatering sites, although the 250m separation distance has been retained.

At present, Thames Water do not have any empirical evidence for the levels of bioaerosols that might be associated with the potential sources at their sludge treatment centres. As a responsible operator, Thames Water are currently considering carrying out monitoring for bioaerosols at a number of typical STC's in order to confirm that the understanding of the wider waste water treatment industry, that sewage sludge treatment processes do not give rise to elevated levels of bioaerosols, is correct.

2.5 Receptors

Environment Agency guidance note M9 recommends a screening distance of 250m from bioaerosol emission sources to static receptor locations. Sensitive receptors are defined as: 'permitted activities where people are likely to be for prolonged periods'. This term would therefore apply to dwellings (including any associated gardens) and to many types of workplaces. We would not normally regard a place where people are likely to be present for less than 6 hours at one time as being a sensitive receptor. The term does not apply to those controlling the permitted facility, their staff when they are at work or to visitors to the facility, as their health is covered by Health and Safety at Work legislation but would apply to dwellings, commercial or industrial premises nearby where people might be exposed for the requisite period.

There are potentially sensitive receptors found within 250m of potential bioaerosol emission sources at the site. These receptors are found to the North and North West of the Site.

[5] RR786 - Bioaerosol emissions from waste composting and the potential for workers' exposure https://www.hse.gov.uk/research/rrhtm/rr786.htm

Two area of sensitive receptors have been identified based on their location and receptor type. The distance and direction from each potential bioaerosol emission source to the closest sensitive receptor within the area has been identified.

Where multiple assets exist for the same process, such as the uncovered sludge tanks, only the closest location has been presented. The receptor closest to a potential emission source are stables to the north of ISSDC, which is located approximately 210m North East of the emergency sludge lagoon.

Table 2: Static Receptors within 250m of Potential Bioaerosol Sources

Receptor	Description	Source	Distance from closest source (m)	Direction from the site
R1	Commercial / Residential premises Stables	Emergency Sludge Lagoon	210m	North East
R2	Residential premises	Emergency Sludge Lagoon	248m	North East

2.6 Magnitude of Risk

The method used for this bioaerosol risk assessment is adapted from the EA's standard guidance on risk assessments for environmental permitting, which recommends using a Source-Pathway-Receptor model to help determine the magnitude of the risk associated with bioaerosol emissions from a facility.

The magnitude of risk is a function of both the probability of exposure and the consequences of the hazard.

The probability of exposure to bioaerosols can be described as:

Probability	Meaning
High	Exposure is probable, direct exposure likely with no/few barriers between source and receptor
Medium	Exposure is fairly probable, barriers less controllable
Low	Exposure unlikely, barriers exist to mitigate
Very Low	Exposure very unlikely, effective and multiple barriers

The consequence of the hazard considers the nature of the source, the hazard and receptor. These consequences can be described as:

Consequence	Meaning
High	Severe consequences, evidence that exposure may result in serious damage
Medium	Significant consequences, evidence that exposure may result in damage that is not severe and is reversible
Low	Minor consequences, damage not apparent, reversible adverse changes possible
Very Low	Negligible consequences, no evidence for adverse changes

The probability of exposure and consequence of the hazards are then combined to determine the overall magnitude of the risk, as demonstrated in Figure 2 below.

Figure 2 Magnitude of Risk matrices

Probability ↑ / Consequence →	VL	L	M	H
H	M	M	H	H
M	L	M	M	H
L	L	L	M	M
VL	VL	L	L	M

There are two potential sources of bioaerosols release within 250m of static receptors:

- Emergency sludge storage lagoon
- Emergency sludge storage tanks

The receptors are situated to the North East of the release points. The prevailing wind direction is from the South west. There is potential for wind-borne transportation of bioaerosols. The risk of bioaerosols being generated from the permitted processes on site is low.

Overall, the probability of bioaerosols being released at levels considered pollution from the sludge treatment process and the identified potential sources is considered to be low.

The potential duration of release of bioaerosols varies from infrequent to frequent. The magnitude of release is considered to be low. There is one commercial receptor (R1) approximately 210m distance from identified potential sources (emergency sludge lagoon). Given that the identified potential sources are considered to represent a low risk, the intervening distance and the screening provided by the vegetation bund and M4 motorway, it is considered that the risk of exposure to occupants of this building from bioaerosols emitted from the site is likely to be low.

One residential property (R2) has been identified, approximately 248m distance from the identified potential sources. Given that the identified potential sources are considered to represent a low risk and the intervening distance and screening provided by the vegetation bund and M4 motorway, it is considered that the risk of exposure to residents at this property from bioaerosols emitted from the site is also low.

The overall magnitude of the risk is summarised in Table 5 below.

Table 5: Risk of Exposure to Receptors within 250m of Potential Bioaerosols Sources

Source	Magnitude of Release	Pathway	Receptors	Control Measures	Consequence	Probability of Exposure	Magnitude of Risk
Cake storage barn	Low	Inhalation via wind-borne transportation	None within 250	The cake stockpile levels are managed so that under normal operating conditions it does not exceed the height of the bay walls. In addition, the site has mature trees on the southern boundary that provides some screening along the site boundary to receptor. The cake stockpiles levels are managed to minimise storage time, cake can also be removed off site for storage in the event of land spreading being unable (poor weather conditions) to ensure the site does not store excessive volumes at any time.	Very low	Very low	Very low
Odour Control Unit	Low	Inhalation via wind-borne transportation	None within 250	The odour control unit is a 2 stage biofilter unit, with the second state being a MONOSHELL based biofilter, which is designed to achieve a stack standard of <= 1000 $OuEm^3$. The MONOSHELL section is subject to regular checking for compaction and moisture content, with programmed media replacement The odour control unit is monitored and regularly maintained making the uncontrolled release of bioaerosols very unlikely.	Very low	Very low	Very low
Uncovered Sludge Tanks	Medium	Inhalation via wind-borne transportation	R1	Not all 6No. tanks are used under normal working conditions and only used as a	Very low	Low	Very low

Source	Magnitude of Release	Pathway	Receptors	Control Measures	Consequence	Probability of Exposure	Magnitude of Risk
				contingency to the main centrifuge feed tanks. Tank base sludge recirculation minimises surface turbidity and risk of release. Plant throughput minimises the length of time tanks are in service at any one time. It is important to note that only 1No. tank is within the 250m screening distance to R1. Tank configuration means it will be one of the latter tanks to be filled in sequence.			
Uncovered Emergency Sludge Lagoon	Medium	Inhalation via wind-borne transportation	R1& R2	The lagoon is not used under normal working conditions and only used as an emergency to the emergency sludge tanks and the main centrifuge feed tanks. Robust plant maintenance minimises the risk of needing to utilise using the lagoon in an emergency. Plant throughput minimises the length of time the lagoon would in service at any one time.	Very low	Low	Very low

2.7 Abnormal Situations

In the event of plant failures or abnormal situations, an alarm would be raised on the Site Supervisory Control and Data Acquisition (SCADA) or telemetry systems, which will be reacted to by on-site or regional control room operators and Duty Managers. Depending upon the nature of the fault or emergency, where required, an operator would contact a mechanical or electrical technician, both of whom are on-call 24-hours, to attend site as soon as practicable.

If the on-call technicians are already engaged upon other response work, there is the facility to access staff from other TW geographic divisions, coordinated by the Duty Manager. All faults, breakdowns and emergencies are logged electronically together with records of the action taken and the solutions reached. One such abnormal event would be use of the emergency sludge lagoon. Such an event would result in an increase risk of bioaerosol release.

3. Conclusions

A source-pathway-receptor risk assessment has been undertaken to appraise the potential for risk to human health in dwellings and other nearby buildings from bioaerosols arising from operations at the ISSDC Facility. The risk assessment followed a standardised approach, namely:

- Hazard identification: what sources of bioaerosols are present;
- Exposure assessment: what are the mechanisms or pathways allowing bioaerosols to migrate off site and reach a receptor; and
- Risk evaluation: what is the probability, magnitude and duration of exposure. This considered control measures in place to reduce the probability or magnitude of release.

A small number of potential sources of bioaerosols within the site processes have been identified, connected to the storage and movement of digested sewage sludge/cake at the site; operation of an odour control unit and abnormal operation of an emergency sludge lagoon.

Although only qualitative data is available, the overall bioaerosol risk to the identified, potential, receptors within 250m of potential bioaerosol sources associated with the sludge treatment process is considered to be Low.

Appendix A. Site boundary and emission points

Appendix B. Site plan

Appendix D. Bioaerosol Risk Assessment