EPA Application Form

7.3.2 - Equivalent Level of Protection (Sewer) - Attachment

Organisation Name: *	Amazon Data Services Ireland Limited
Application I.D.: *	LA016198

Amendments to this Application Form Attachment

Version No.	Date	Amendment since previous version	Reason
V.1.0	July 2017	N/A	Online application form attachment
As above	Mar 2018	Identification of required fields	Assist consistent completion of attachment

7.3.1 Equivalent Level of Protection (Emissions to Sewer)

Background information

In relation to emissions to sewer, Article 15 of the Industrial Emissions Directive (Directive 2010/75/EU) states:

With regard to indirect releases of polluting substances into water, the effect of a water treatment plant may be taken into account when determining the emission limit values of the installation concerned, provided that an equivalent level of protection of the environment as a whole is guaranteed and provided this does not lead to higher levels of pollution in the environment.

Furthermore, emission limit values (ELV's) applied by the Agency for an installation's emissions to sewer must satisfy the consent conditions (ELVs and other requirements) specified by Irish Water, as required by Section 99E of the EPA Act 1992 as amended.

(Note: To avoid unnecessary delays in the application assessment process, it is important that the applicant licensee liaises with Irish Water (or other water services authority responsible for the sewer network) at the earliest available opportunity, with a view to establishing consent conditions.)

Assessment of 'equivalent level of protection'

To comply with Article 15 above, the following must be demonstrated:

It must be demonstrated that the level of treatment of an installation's effluent, on and off site, is collectively equivalent to BAT and environmental quality standards will be observed in the receiving water (i.e., '*equivalent level of protection'*).

(1) Consider the parameters relevant to the installation's emissions to sewer (i.e., characteristics of discharge)

(2) Do sectoral BAT associated emission levels (BAT-AELs) exist for these parameters? These are the relevant sectoral BAT-AELs.

(3) Do the emission limits proposed for installation comply with all the relevant sectoral BAT-AELs? If Yes, ok; if not proceed to (4) below.

(4) If not, does the licence for the relevant Irish Water agglomeration discharge specify limits which comply with all/the remainder of the relevant sectoral BAT-AELs for the installation? If Yes, ok; if not proceed to (5) below.

(5) If no to (3) and (4) above, the applicant/licensee needs to otherwise determine whether the level of treatment in the sewer network is sufficient to treat the installation's discharges to comply with relevant sectoral BAT-AELs.

Assessment of 'levels of pollution in the environment'

To comply with Article 15 above, the following must be demonstrated:

In granting a licence for an installation, and in accordance with Section 83(5)(a)(iii) of the EPA Act 1992 as amended, as well as in accordance with Articles 5 and 7 of S.I. 272 of 2009, the Agency must ensure that the quality of any relevant receiving water is not impaired or that the relevant Environmental Quality standards are not exceeded. It

must be demonstrated whether or not, upon discharge from the Irish Water WWTP, the environmental quality standards[1] (EQSs) for the receiving water will be breached as a result of the installation's discharges. (i.e. *'does not lead to higher levels of pollution in the environment')*

Details on level of protection provided (on and off-site)

Please provide details in the table below on the installation emissions to the sewer; the processes which contribute to the emissions, the type of on-site treatment (if any), off-site treatment (if any) and the proposed maximum daily flows.

Table 1: On-site treatment – abatement at installation

Emission Reference	Proposed / Existing	Process Description	Abatement	Proposed max. flow (m^3/day)
SE1	Existing	Domestic Sewerage And Cooling wastewater from data centre cooling system	No abatement required	172.8 m3/day
			Total:	172.8 m3/day

Off-site treatment – Municipal Waste water treatment plant (MWWTP)

Name of sewer network/agglomeration: Lower Liffey Valley Regional Sewerage Scheme

Normal daily flow rate in network (m^3/day): 48,500 m3/day

Peak Hydraulic Capacity – as constructed (m3/day): 65,405 m3/day

Average Hydraulic loading (m3/day): 37,408 m3/day.

Responsible authority for network/agglomeration: Uisce Eireann

Type of treatment

The Leixlip WWTP receives industrial and domestic effluent and is divided into two treatment streams:

- Main plant: treats waste water from the general catchment. The treatment system provides tertiary treatment and the wastewater in this stream is subject initial screening (to remove solids larger than 6 mm in size), grit removal, primary settlement, activated aeration and secondary settlement with ferric sulphate addition for phosphate reduction.
- Intel Plant: treats effluent from the Intel (Ireland) facility in Leixlip as well as a contribution from the general catchment. The treatment system provides tertiary treatment and the wastewater in this stream is subject to initial screening (to

[1] EQSs as specified in Schedule 5 of *European Communities Environmental Objectives (Surface Waters) Regulations 2009* as amended.

remove solids larger than 6 mm in size), activated aeration, secondary settlement with ferric sulphate addition for phosphate reduction and tertiary filtration. Information regarding treatment at Leixlip WWTP is sourced from the EPA licence No. D0004-02 accessible via: Environmental Protection Agency
Receiving water name (and waterbody type): Liffey 160-IE_EA_09L012040 (Liffey River)
No. of dilutions available for discharge from Leixlip WWTP to the receiving water: The dilution in the River Liffey of the effluent loads is a minimum of 4.9 (i.e. the 95 percentile flow in the River Liffey is size times the flow from the Primary Discharge and the average flow in the River Liffey at the Primary Discharge is 31 times the average from the wastewater treatment plant Primary Discharge.
Waste water discharge authorisation**:** N/A
The maximum discharge volumes from the installation represent approximately 0.46% of the average effluent influent volumes from the Irish Water municipal wastewater treatment plant (MWWTP). The maximum discharge volumes from the installation represent approximately 0.26% of the peak effluent influent volumes from the Irish Water municipal wastewater treatment plant (MWWTP). The Agency's most recent national annual report/the most recent AER indicates that this MWWTP is: In compliance with the discharge limits for the following parameters: COD-Cr, Suspended Solids, pH, BOD, Total Phosphorus, Ammonia, Ortho-Phosphate. According to the Annual Environment Report (AER) 2023 produced by Irish Water, Leixlip WWTP is in compliance with the discharge limits for all parameters.

965/65405

Assessment details

Please enter the required details in the assessment table below.

Edit the parameters in column 1 in accordance with the installation's characteristics of emissions to sewer.

Enter any limits specified by Irish Water (or other water service authority) in column 3.

In column 4 determine, if necessary for any parameter, the concentration of the installation's discharges after having received any treatment at the installation prior to discharge, and after having received any treatment in the sewer network/agglomeration prior to discharge.

Specify the relevant the BAT-AELs in Column 5.

Specify the relevant the EQSs in Column 6.

Table 2

Parameter (sample parameters included below)	**Irish Water/ WSA**	**After on and off site treatment**	**BAT-AEL**	**EQS**
Temperature	25°C (max)	Ambient + 2-3°C	N/A	No greater than 1.5°C rise in ambient temperature
pH	6-9	6-9	N/A	Soft Water 4.5< pH < 9.0 Hard Water 6.0< pH < 9.0
EC	N/A	Prior to treatment: 300-500 uS/cm As discharged: 1000-1500 uS/cm	N/A	N/A
	mg/l	**mg/l**	**mg/l**	**mg/l**
Biological Oxygen Demand	N/A			
Chemical Oxygen Demand				
Suspended Solids				
Ammonia				
Total Phosphorous				
Sulphates				

Table 2				
Parameter (sample parameters included below)	**Irish Water/ WSA**	**After on and off site treatment**	**BAT-AEL**	**EQS**
Chlorides				
Detergents (as MBAS)				
Oils, Fats, Grease				

Table 3: Please include any other information you consider relevant in the (free text) box below:

The Installation will contribute **0.46**% of the average influent to the Leixlip WWTP. The proposed emissions are not anticipated to cause a breach in the licenced ELVs for the Leixlip WWTP. Discharges from the treatment plant are subject to further dilution in the River Liffey which combined with the upgrades within the plant is sufficient for achieving the water quality standards from S.I. 272 of 2009.

Water is recycled at least 3 times in the air conditioning system. The **business/domestic wastewater hydraulic load** will have a peak discharge of 0.5 l/s or 21.6 m3/day (based on a 12 hour day) and a post-development average discharge 0.06 l/s or 2.59 m3/day (based on a 12 hour day). The **cooling discharge wastewater hydraulic load** will have a post-development peak discharge 3.0 l/s [when required during summer months only], or 129.6 m3/day (based on a 12 hour day). The **total peak business & cooling discharge wastewater load** will be 3.5 l/s +safety margin = 4.0 l/s or 172.8 m3/day (based on a 12 hour day).

The foul network will discharge into the overall Kildare Innovation Campus (KIC) Masterplan site foul water network which is owned and operated by the Landowner.

The cooling discharge water has an absolute maximum of 1,500 uS/cm of concentrated ions as per the Pre-Connection Enquiry application to Uisce Eireann submitted as part of the planning application for the KIC Masterplan site (KCC Planning Ref. 23/60047).