
Unsolicited Information

Project	Amazon Data Services Ireland Limited, Drogheda, Drogheda IDA Business and Technology Park, Donore Road, Drogheda, Meath, A92 VX98. Reg. No.: P1181-01
Subject	Unsolicited Information
Author	Jonathan Gauntlett
Date	7 March 2023
Ref.	JG/217501.1059TR01

1.0 INTRODUCTION

This document sets out additional unsolicited information in respect of the Industrial Emissions licence application (Reg. No.: P1181-01) from Amazon Data Services Ireland Limited, Drogheda, Drogheda IDA Business and Technology Park, Donore Road, Drogheda, Meath, A92 VX98.

Air Emission Impact Assessment

An assessment has been undertaken on the potential impact of air emissions as a result of the use of back up generators which may be used to power the site under emergency circumstances. The Attachment-7-1-3-2-Air Emissions Impact Assessment has been revised to include the 2 no. 2.19 MWth diesel powered back-up administration generators.

Evaporative cooling systems

An assessment has been undertaken on the potential for water quality impacts as a result of the discharge of evaporative cooling water to stormwater sewer. The Technical Note: Stormwater Impact Assessment is included with this unsolicited information submission.

Cooling Water

Mains water is used on site for both domestic purposes (offices and kitchens) and for data hall cooling at ambient temperatures above a set point. No treatment chemicals or softeners are added to the cooling water. Prior to the cooling process water is sanitised using ultraviolet disinfection. When water is used for cooling it is recirculated in a closed loop system. Cooling water has conductivity values of between 1,200-

1,500uS/cm and is automatically discharged when a conductivity setpoint of 1,500uS/cm. Cooling water is discharged at ambient temperature.

The anti-legionella flush cycle drains the supply pipework of stagnant water when the evaporative cooling system has not been enabled for 7 Days. Once activated, the cycle opens the fill and drain valves simultaneously for 3 minutes. The water flushes through air handling units and to the cooling system drain ultimately discharging to the storm water sewer. The system is gravity drained to ensure no pockets of water remain within the system. See Figure 1.1 below which details the flushing process.

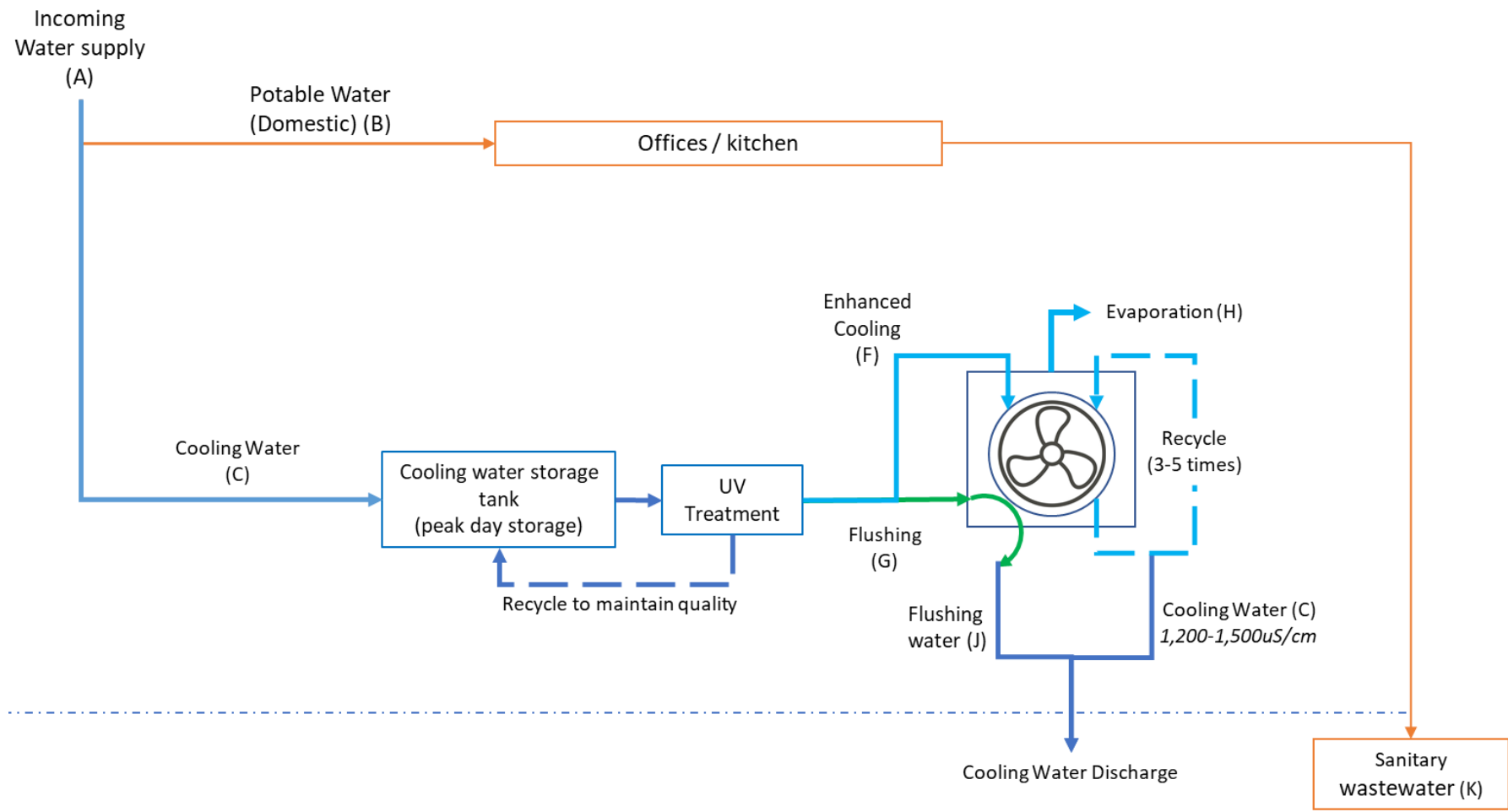


Figure 1.1 Water Use

Drainage Systems

Legionella Management

In accordance with ADSIL legionella management procedure, every cooling system is sampled annually for legionella bacteria. If a result exceeds 1000CFU/L, the air handling unit is disinfected with a hydrogen peroxide solution. Based on past experience, this is required on approximately 10% of systems annually. During the disinfection process 50mL of hydrogen peroxide solution is dosed into the air handling and water is recirculated through the cooling system. The disinfected water is discharged to the cooling system drain and ultimately to the storm network. Any residual hydrogen peroxide is oxidised by organics in the onsite foul drain network, is readily converted to water and oxygen and is consumed prior to discharge via foul sewer.

Emergency Backup Generator Flue Drainage Discharge

Rainfall which passes through the back-up generator exhaust stacks will discharge to a hydrocarbon interceptor before connecting to the foul drainage network.

Record Of Emergency Generator Run Hours

The emergency backup generator operating hours are recorded on ADSIL's Enterprise Asset Management System (EAM). For each generator, the Operations team manually enters planned and emergency run hours and the description of the operation (run reason) onto the EAM system. This includes off-load testing/maintenance runs, on-load testing/maintenance runs and emergency operation.

When an emergency operation is logged, an email alert is sent to the Environmental Team for review and tracking. The environmental team must approve all generator operation associated with on-load planned maintenance/testing to ensure the run hours do not exceed what is allowed under the site's planning permission. This is done automatically on ADSIL's internal maintenance approval system platform. The Operation teams must attach an excel spreadsheet to the approval request which shows all of the maintenance/testing events and associated run hours for the year to date. This 'Run Hour Spreadsheet' is maintained by the Operations Team. The Operations team also maintain an excel spreadsheet on which they record every emergency operation of a generator. The environmental team review this information after every emergency event.

ADSIL's Climate Commitments: Sustainability in the Cloud

AWS is focused on efficiency and continuous innovation across global infrastructure, as we continue on our path to powering our operations with 100% renewable energy by 2025. AWS is committed to achieving Amazon's goal of net-zero carbon by 2040. More about these commitments and sustainability in the cloud can be found here: <https://aws.amazon.com/sustainability/>.

AWS is committed to building a sustainable business for their customers and the planet. In 2019, the Operator co-founded The Climate Pledge—a commitment to be net zero carbon across their business by 2040, 10 years ahead of the Paris Agreement. Part of that commitment is powering the Operator's global cloud infrastructure with 100% renewable energy, including in Ireland. As part of this commitment, the Operator is investing and innovating in efficiency in every aspect of their operations and is on a path to be powered by 100% renewable energy by 2025 – five years ahead of its

original target of 2030, Amazon is the largest corporate purchaser of renewable energy in the world and has announced a total of 379 renewable energy projects across 21 countries globally, representing 18.5 gigawatts (GW) of renewable energy capacity. Once fully operational, Amazon's global renewable energy portfolio will generate 50,000 gigawatt hours (GWh) of clean energy, which is the equivalent amount of electricity needed to power 4.6 million U.S. homes each year. Amazon was the first company in Ireland to deliver unsubsidised Corporate Power Purchase Agreements (CPPAs). This means Amazon is helping to add renewable energy to the grid without direct government support, thus reducing subsidy costs on other local energy users. In Ireland alone, Amazon has committed to offtake 100% of the power from renewable wind projects in Cork, Donegal, and Galway. Amazon does not own these projects, but our commitment to purchasing the power from these projects enable them to be built. In total, these three wind projects are projected to add 229 megawatts of renewable energy to the Irish grid, reducing carbon emissions by 366,000 tonnes of CO₂ each year, and producing enough renewable energy to power 185,000 Irish homes, per annum. These three wind projects will make Amazon the largest single corporate buyer of renewable energy in the country.

ADSIL's Customers are able to support their own goals to become sustainable by moving to the cloud. The results of a recent study of US enterprise data centres by 451 Research found the Operator's data storage facilities to be 3.6 times more energy efficient than the traditional alternative and achieved an 88% reduction in carbon footprint for workloads that moved from on-premises data storage to the Operator's, helping the Operator's customers to become greener in the cloud.

To reduce both the energy and water use in their Irish data centres, the Operator utilises direct evaporative cooling systems, which predominately utilizes outside air to cool the servers. This means that for more than 95% of the year they use no water to cool their data centres in Ireland. Furthermore, the proposed buildings are designed to harvest up to 95% of the annual cooling water requirements through rainwater harvesting.

Prevention of Accidents

The Standard Operating Procedure (SOP) 'Bulk Fuel Tank Delivery' for the diesel unloading operations at the installation has been attached to this submission.

Renewable Diesel Use

ADSIL has recently participated in a pilot study to test the suitability of Renewable Diesel use within emergency back-up generator fleet. Renewable diesel burns cleaner than regular diesel, releasing less carbon and potentially reducing CO₂ emissions. Following positive outcomes of the pilot tests, ADSIL are progressing to secure a supply of Renewable Diesel which will be used in their backup generators. ADSIL's preference will be to use Renewable Diesel as this is a more sustainable option to traditional diesel as far as is possible, however this will be dependent on the availability of supply.

ESB Substation

ADSIL owns the freehold title to the land on which the 110kV ESB substation is located.