

Attachment-7-1-3-2

Surface Water and Ground Emissions Impact Assessment

Report Prepared For

Amazon Data Services Ireland Limited

Report Prepared By

Jonathan Gauntlett,
Environmental Consultant

Our Reference

JG/217501/0416WR01

Date of Issue

20 January 2022

For inspection purposes only.
Consent of copyright owner required for any other use.



Cork Office
Unit 5, ATS Building,
Carrigaline Industrial Estate,
Carrigaline, Co. Cork.
T: + 353 21 438 7400
F: + 353 21 483 4606

AWN Consulting Limited
Registered in Ireland No. 319812
Directors: F Callaghan, C Dilworth,
T Donnelly, T Hayes, D Kelly, E Porter

Document History

Document Reference		Original Issue Date	
JG/217501/0416WR01		20 January 2022	
Revision Level	Revision Date	Description	Sections Affected

Record of Approval

Details	Written by	Approved by
Signature		
Name	Conor McGrath	Jonathan Gauntlett
Title	Senior Environmental Consultant	Senior Environmental Consultant
Date	20 January 2022	20 January 2022

For inspection purposes only
Consent of copyright owner required for any other use

CONTENTS		Page
1.0	INTRODUCTION	4
2.0	Assessment of Stormwater Emissions	4
2.1	Methodology	4
2.2	Receiving Environment	5
2.3	Emissions to Surface Water and Abatement Measures	8
2.4	Surface Water Impact Assessment	9
3.0	Assessment of Ground ANd/or Groundwater Emissions	9
3.1	Methodology	9
3.2	Receiving Environment	10
3.3	Emissions to Ground and Abatement Measures	10
3.4	Impact Assessment	11
4.0	REFERENCES	11

*For inspection purposes only.
Consent of copyright owner required for any other use.*

1.0 INTRODUCTION

This report presents the assessment of emissions from the site to water and ground as a result of the operation of the Amazon Data Services Ireland data storage facility to support the Industrial Emissions Licence Application. Due to the interrelationships between these aspects both thematic have been combined into a single Impact Assessment report, additionally for this same reason the wider impacts of emissions to surface water and foul sewer have also been discussed herein.

This report was completed in a format consistent with the *Environmental Protection Agency's (EPA) Licence Application Form Guidance – Industrial Emissions (IE), Integrated Pollution Control (IPC) and Waste (EPA, 2018)*.

The Application Form Guidance states that: *The expectation is for the 'receiving environment report' to be separate from the 'emissions impact assessment' but they are interrelated. Information may be combined in the 'impact assessment report', where it is logical to do so. In this case the reason for combining the reports should be clearly stated in the submitted report.*

Due to the nature of the localised impacts of the installation and the completion of baseline assessment and separate modelling reports for emissions (air and noise), it is logical to combine the 'receiving environment report' and 'emissions impact assessment' into one report.

The installation will have no proposed emissions to ground, groundwater, or surface water.

Stormwater and evaporative cooling water from the Air Handling Units (AHUs) at Buildings A, C, D, E and F will discharge to the stormwater network. This is recirculated mains water that has been through the AHUs only. There is no addition of water treatment chemicals. The AHUs are clean systems and therefore the water is of sufficient quality to be discharged to storm rather than foul.

Domestic Sewerage and evaporative cooling water discharge from cooling systems (Building B) will be collected in a new gravity foul sewer and discharge into a single outfall to the main IW owned foul sewer to the south of the site. The local foul drainage network ultimately discharges to Ringsend Wastewater Treatment Plant for offsite treatment

The main substance of concern in this respect of impacts on ground or surface water bodies is hydrocarbons from car park run-off or in the unlikely event of an overspill from refilling the emergency generator diesel tanks.

2.0 ASSESSMENT OF STORMWATER EMISSIONS

2.1 METHODOLOGY

This assessment of the stormwater emissions looks at the potential impact on the surface water environment. It includes a review of both the known stormwater emissions from the site as well as potential emissions through spills, accidents etc.

The existing surface water environment is described in terms of water quality with reference to environmental quality objectives and standards and any objectives and standards laid down for protected areas. This is followed by a summary and an

assessment into the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

This assessment has been prepared from both a desktop review of existing information, and a site-specific investigation. The following is a list of sources of information consulted for use in this section:

- Ordnance Survey Ireland - aerial photographs and historical mapping;
- Environmental Protection Agency (EPA) – website mapping and database information;
- Environmental Protection Agency (EPA) – www.epa.ie on-line mapping and database information;
- Environmental Impact Assessment Report for a Proposed Data Storage Facility Development Clonshaugh Business and Technology Park, Dublin 17; AWN (October 2018).

2.2 RECEIVING ENVIRONMENT

The existing surface water environment in terms of water quality with reference to environmental quality objectives and standards and any objectives and standards laid down for protected areas is described Section 7.3.1 of the Baseline Report.

The storm sewer into which the stormwater from the site discharges eventually drains to the Santry River (IE_EA_09S010300) to the south of the site (see Figure 2.1). Section 7.3.1 of the Baseline Report provides detail on the quality and status of the Santry River.



Figure 2.1 Hydrological Environment

2.2.1 Sensitive areas or areas of special interest

An Appropriate Assessment (AA) (Screening Stage) has been prepared and is shown in Attachment-6-3-4-AA Screening. **Error! Reference source not found.** below presents the site in relation to nearby European sites.

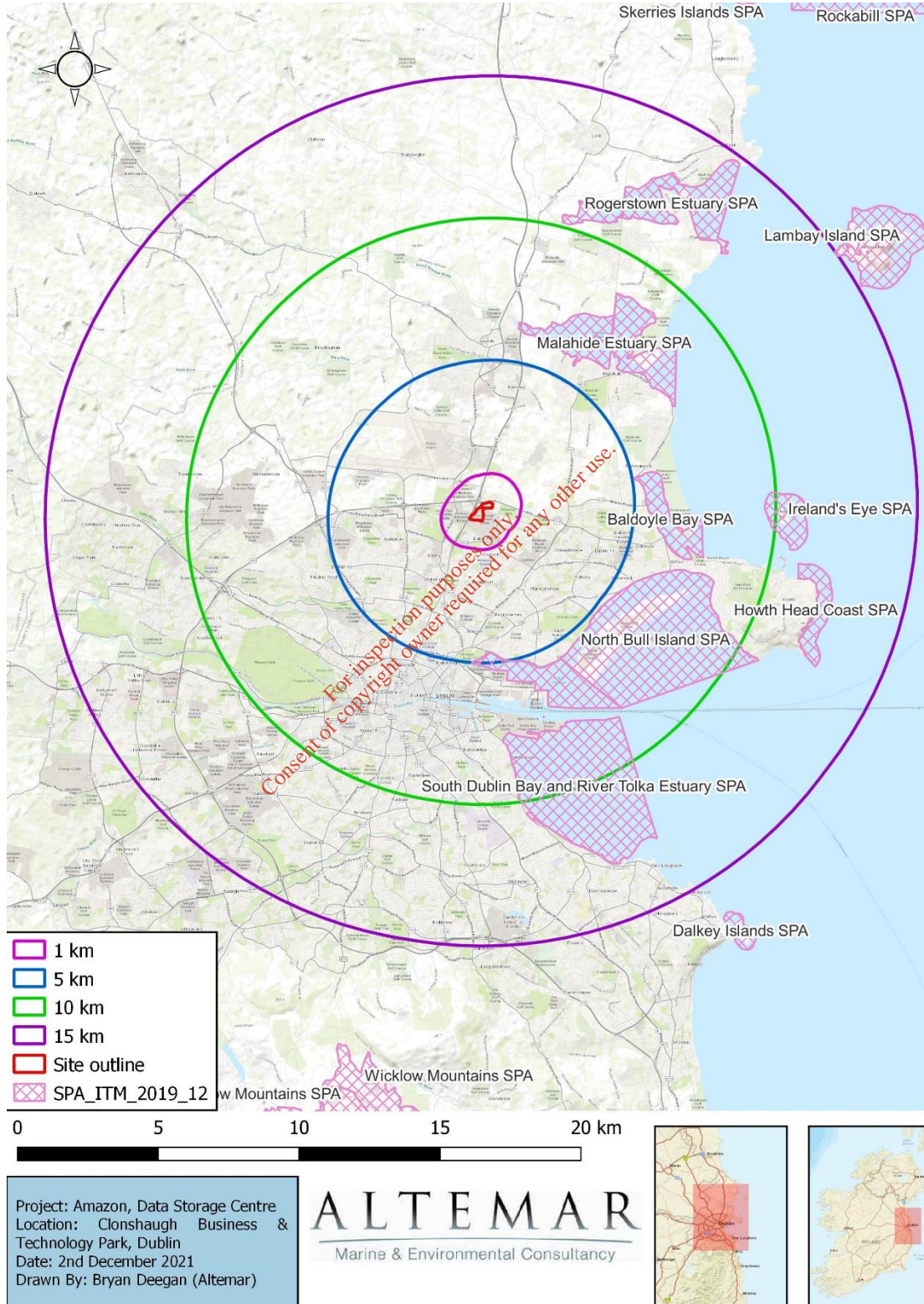


Figure 2.2 Site Location in relation to nearby European sites

The AA Screening (Attachment-6-3-4-AA Screening Licence-Jan-2022 concludes that:

The proposed development site is located within an industrial environment 4.7 km from the nearest European site (South Dublin Bay and River Tolka Estuary SPA).

Watercourses and surface runoff are seen as the main potential pathway for impacts on European sites. There is no direct hydrological pathway linking the proposed development site to a European site. There is an indirect pathway to marine-based European sites via the proposed foul drainage networks. There is also an indirect pathway from the site to marine-based European sites, via the proposed stormwater drainage. The stormwater from the site will discharge via the onsite attenuation ponds to the existing stormwater sewer along the Business Estate Road. This eventually discharges into the Santry River. However, stormwater drainage will pass through attenuation and oil interception before being discharged. Furthermore, given the distance between the proposed site and the nearest European site (4.7 Km), any pollutants or silt will settle, be diluted, or dispersed to negligible levels prior to reaching the European sites. Therefore, the proposed development project will not have a significant impact on the conservation objectives of European sites. However, it should be noted that the construction and operation of the proposed development will have to comply with Water Pollution Acts. However, the measures to comply with Water Pollutions Acts are not necessary for the protection of European sites.

In relation to noise produced from the site it was determined that the predicted noise levels at all NSL's are below the day, evening and night-time noise criteria that are applicable to the site operations. Furthermore, there will be no noise impact from the development site on the European site.

In relation to air quality, it is determined that the emissions from the diesel generators will be in compliance with the ambient air quality standards. Therefore, no impacts on the air quality of the European sites are foreseen.

No European sites are within the zone of influence of this development. Having taken into consideration the effluent discharge from the proposed development works, the distance between the proposed development site to designated conservation sites, lack of direct hydrological pathway or biodiversity corridor link to conservation sites and the dilution effect with other effluent and surface runoff, it is concluded that this development would not give rise to any significant effects to designated sites. The construction and operation of the proposed development will not impact on the conservation objectives of features of interest of European sites.

This report presents a Stage 1 Appropriate Assessment Screening for the Proposed Development, outlining the information required for the competent authority to screen for appropriate assessment and to determine whether or not the Proposed Development, either alone or in combination with other plans and projects, in view of best scientific knowledge, is likely to have a significant effect on any European or European site.

On the basis of the content of this report, the competent authority is enabled to conduct a Stage 1 Screening for Appropriate Assessment and consider whether, in view of best scientific knowledge and in view of the

conservation objectives of the relevant European sites, the Proposed Development, individually or in combination with other plans or projects is likely to have a significant effect on any European site.

2.3 EMISSIONS TO SURFACE WATER AND ABATEMENT MEASURES

Details of the proposed stormwater drainage are presented in Attachment 4.8.1 (Operational Report). Any accidental emissions of oil, petrol or diesel could cause contamination to stormwater if the emissions enter the water environment unmitigated.

All site stormwater will be drained via Class 1 by-pass interceptors to the appropriately sized attenuation ponds following which the stormwater will discharge via a hydrobrake (to control flow) to the storm sewer.

The discharge from the attenuation ponds will have a controlled discharge to greenfield rates.

In accordance with BAT, clean stormwater will be kept separate from contaminated wastewater and there will be no inherent risk of cross-contamination.

The only chemical hazardous to the environment that is stored onsite is diesel. Diesel will be prevented from entering the attenuation pond by the hydrocarbon interceptors. The interceptors have level alarms that will be triggered if the interceptor is overloaded or malfunctions.

Due to the nature of the run-off (stormwater from buildings and roads only) and the inclusion of hydrocarbon interceptors, the proposed discharge is unlikely to contain more than trace hydrocarbons and metals. Therefore, it is considered that the emission of stormwater will not contain significant quantities of Principal Polluting Substances *Environmental Protection Agency (Licensing) (Amendment) Regulations 2004* or Priority Substances or Priority Hazardous Substances of the *EC Environmental Objectives (Surface Waters) Regulations 2009, S.I. No. 272 of 2009*.

A Standard Operating Procedure (SOP) for fuel unloading is in place at the site to reduce the risk of spills and an on-site Emergency Response Plan (ERP) is in place, the site.

The interceptors are equipped with an online hydrocarbon detection and alarm system that connects to the BMS/EPMS critical alarm. These measures will prevent discharge of oils/fuels which may potentially be present in stormwater run-off from heavily trafficked areas, delivery zones, dock levellers and turning areas and ensure that run-off discharges at greenfield run-off rates as current.

Trapped gullies will be utilised in all stormwater systems to the road, turning bays and car park infrastructure so that sediment pollution to the local watercourses is minimised. The discharge from the attenuation ponds will be controlled to greenfield runoff rates. There is no relevant limit for flow; however, the proposed rates of discharge have been designed to have minimal impact on the hydrology of the surface water network. In accordance with BAT, clean stormwater will be kept separate from contaminated wastewater and there will be no inherent risk of cross-contamination.

In the event of a fire at the facility, firewater will also need to be contained or it may contaminate receiving waters. The onsite attenuation basin will be used for retention of potentially contaminated firewater in the event of a fire or accident. The total available capacity afforded by the pond is more than sufficient to accommodate the

maximum volume of contaminated fire water anticipated in the fighting of a fire at the installation.

The only chemical hazardous to the environment that is stored onsite is diesel. Diesel will be prevented from entering the attenuation pond by hydrocarbon interceptors. The interceptors have level alarms that will be triggered if the interceptor is overloaded or malfunctions. A penstock will be installed on the outfall of the stormwater attenuation pond(s) that will be closed to prevent any overflow of diesel into the pond escaping into the storm sewer.

2.4 SURFACE WATER IMPACT ASSESSMENT

The installation will not have a noticeable impact on the surface water of the receiving environment. There is no direct discharge to surface water; there is an indirect discharge of stormwater and water from the AHUs through the storm sewer which eventually discharges to Santry River.

There is a low risk of Principle Pollution Substances, Priority Substances or Priority Hazardous Substances (main polluting substances (as defined in the Schedule of EPA (Licensing)(Amendment) Regulations 2004, S.I. No. 394 of 2004) being discharged from the installation above the limits outlined in the Surface Waters Regulations (S.I. No. 272 of 2009) via the stormwater network due to the stringent controls and procedures in place to prevent and minimise spills and the presence of interceptors within the stormwater infrastructure. Mitigation measures in place to prevent and minimise spills have been implemented as shown in Attachment 4-8-1.

Based on this assessment, with incorporating mitigation measures, the installation will not have a significant impact on the quality or water body status of the receiving surface water bodies. There is no relevant hydrological connectivity or biological connectivity to other European sites located within the zone of influence of the Project.

3.0 ASSESSMENT OF GROUND AND/OR GROUNDWATER EMISSIONS

3.1 METHODOLOGY

This section addresses the potential for emissions to ground/groundwater. The scope and detail of this assessment is consistent with the extent and type of emissions to ground.

The existing receiving environment is described in terms of the existing groundwater quality. The potential impacts to aquifers, soils, sub-soils and rock environment of the facility is summarised, including any impact on environmental media other than those into which the emissions are to be made. The assessment will be made against emission limit values where relevant.

This assessment has been prepared from a desktop review of existing information. The following is a list of sources of information consulted for use in this

- Geological Survey of Ireland (GSI) - on-line mapping, Geo-hazard Database, Geological Heritage Sites & Sites of Special Scientific Interest, Bedrock Memoirs and 1:100,000 mapping;
- Teagasc soil and subsoil database;
- Ordnance Survey Ireland - aerial photographs and historical mapping;

- Environmental Protection Agency (EPA) – website mapping and database information;
- National Parks and Wildlife Services (NPWS) – Protected Site Register;
- Dublin County Council - illegal landfill information; and
- AWN. (2018) Environmental Impact Assessment Report for a Proposed Data Storage Facility Development Clonshaugh Business and Technology Park, Dublin 17.

3.2 RECEIVING ENVIRONMENT

The receiving environment with regards to ground/ground water is set out in Section 7.2 of the Baseline Report (Attachment 4.8.3).

As outlined in the Baseline Report (Section 7.2 and Section 9.0) there is no known ground and/or groundwater contamination, historical or current, on or under the site.

3.3 EMISSIONS TO GROUND AND ABATEMENT MEASURES

The installation has no proposed direct emissions to ground or ground water. The only potential impact of the installation to ground and ground water would be from indirect emissions from fuel and other accidental spills that may occur.

There is a potential for leaks and spillages from the fuel tank to occur on site. In addition to this there is a potential for leaks and spillages from vehicles along access roads, loading bays and in parking areas. Any accidental emissions of oil, petrol or diesel could cause contamination if the emissions enter the water environment unmitigated.

The primary potential impact relates to a failure or accidental spill of diesel fuel which is stored and used on site for the emergency backup generators. Diesel is stored in multiple locations across the site.

The Operational Report (Attachment 4.8.1) outlines the diesel fuel storage systems in detail.

In order to minimise any impact on the underlying subsurface strata from material spillages, the fuel storage tanks are located above ground there will be full containment and all containers are designed to be suitable for the chemicals stored within and in accordance with the EPA's guidelines for the storage and transfer of materials for scheduled activities (EPA, 2004). The design of all bunds will conform to standard bunding specifications - BS EN 1992-3:2006 *Eurocode 2 - Design of concrete structures - Part 3: Liquid retaining and containment structures*. The Operational Report (Attachment 4.8.1) outlines the diesel fuel storage systems in detail.

An SOP for fuel unloading is in place at the site to reduce the risk of spills and an on-site ERP is in place, the site maintains spill kits at all storage areas,

There are green areas and areas of permeable paving (car parks) on site, however, potentially contaminating materials i.e., oil or diesel are not contained or stored on these areas. The car parking bays of permeable paving materials allows rainwater to percolate into the substrata and recharge the groundwater. The risk of a hydrocarbon spill within these areas is low, and permeable paving are a proven source control technique in handling surface water run off small amounts of hydrocarbons are biodegraded in the paving system.

The control measures in place for the storage and transfer diesel fuel any accidental emissions of diesel is more likely to impact on surface water network. Further information on mitigation measures with respect to surface water pollution controls are discussed in Section 2.4 above

3.4 IMPACT ASSESSMENT

As there is no direct discharge, and no direct pathway to groundwater from this site, there is no likely potential impact the soil environment or underlying groundwater body.

As there are no discharges to ground planned and drainage has been entirely replaced, there are no future likely exceedances of the thresholds outlined in the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010).

4.0 REFERENCES

- Environmental Protection Agency (2004) IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.
- Environmental Protection Agency (EPA). (2004) IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.
- Environmental Protection Agency (EPA). *Envision* water quality monitoring data, Available at: <http://gis.epa.ie/Envision/>. (Accessed: June 2021).
- Geological Survey of Ireland. Available at: <http://www.gsi.ie> (Accessed: June 2021).
- Environmental Impact Assessment Report for a Proposed Data Storage Facility Development Clonshaugh Business and Technology Park, Dublin 17; AWN (October 2018).

For inspection purposes only and not for use.
Consent of copyright owner required for other use.