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Attachment-7-1-3-2

Surface Water and Ground Emissions Impact Assessment

Report Prepared For

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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 data storage facilities 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 process emissions to ground, groundwater, or surface water.

The emission to storm sewer consists of stormwater runoff from building roofs, yards and the road network. Residual cooling water, associated with the evaporative cooling process, is also discharged from the cooling systems to the storm sewer.

The Site stormwater discharges offsite at 1 no. Emission Point (SW1). The Site drainage is shown on Drawing 21_123C-CSE-00-XX-DR-C-1100 Surface Water Layout Plan included with this application.

The existing 450mm storm sewer outfalls into the Tymon River connect to the River Poddle in Tymon Park to the east; and ultimately connect to the River Liffey and Dublin Bay. The public stormwater sewer discharges to a culverted stretch of the Tymon River where it has been straightened, it flows through an area of light industrial development and runs to the north of the Technological University Dublin and passes Tallaght Athletics track before going through Bancroft Park. The small river goes on through Tymon North, turning northeast. It flows into the River Liffey as the Poddle River at Wellington Quay in central Dublin 10.2 km downstream of the Site.

Further detail on the storm water network and emissions is set out in Attachment 4-8-1 Operational Report.

Domestic effluent arising from occupation of the Installation will be collected in foul drains within the Site and discharged to the existing foul drainage network. The foul network ultimately discharges into a regional pumping station before final treatment and disposal at Ringsend Wastewater Treatment Plant (WWTP) in Dublin.

Further detail on the foul water network and emissions is set out in Attachment 4-8-1 Operational Report.

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;
- Jacob Site Due Diligence Report , CSEA (20 March 2015)
- Project Phases II Intrusive Ground Investigation Report, ERM (February 2015)

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 in Section 7.3 of the Baseline Report (Attachment 4-8-3).

The area is drained by the Tymon River which runs approximately 200m south of the site flowing in an easterly direction toward Tymon Park. The River then flows northwards through Tymon Park crossing the beneath the M50 where it feeds into the River Poddle. The Poddle passes through Willington, Templeogue, Kimmage in a north-easterly direction towards the River Liffey.

There are no streams on the site itself or along its boundaries. Stormwater run-off will be collected and discharged to the public storm sewer which eventually discharges to the Tymon River c. 200 meters to the south. The nearest downstream EPA monitoring station on the River Poddle at ‘the Priory’ Kimmage Road (RS09P030400) obtained a Q rating of 3 - Poor Status (in 2007).

Currently, the EPA classifies the WFD Ecological Status for the Poddle and Dodder waterbodies as having ‘*Poor Status’* (Cycle Status 2007-2009 and Cycle Status 2013-

2018 respectively) with a current WFD River Waterbody risk of '*At risk of not achieving good status' for both rivers.*

Figure 2.1 Hydrological Environment, illustrating the River Poddle and the River Dodder flowing in a easterly direction.

2.2.1 Sensitive areas or areas of special interest

An Appropriate Assessment (AA) Screening Report (Attachment 6-3-4) has been prepared by Moore Group and has been submitted with the licence application. Figure 2.2 below presents the Site in relation to nearby European sites.

This analysis found that the nearest European sites to the Project are Glenasmole Valley SAC, approximately 3.82km to the south, and the two Wicklow Mountains sites, Wicklow Mountains SAC and SPA, both over 6km to the south. However, these three European sites are located on elevated ground to the south of the development and that there is no connectivity to the proposed Project. The closest sites with potential connectivity to the Project are those associated with Dublin Bay, which are located approximately 11 km to the east of the Project and indirectly liked via Ringsend WWTP. There is no connectivity to any other European sites.

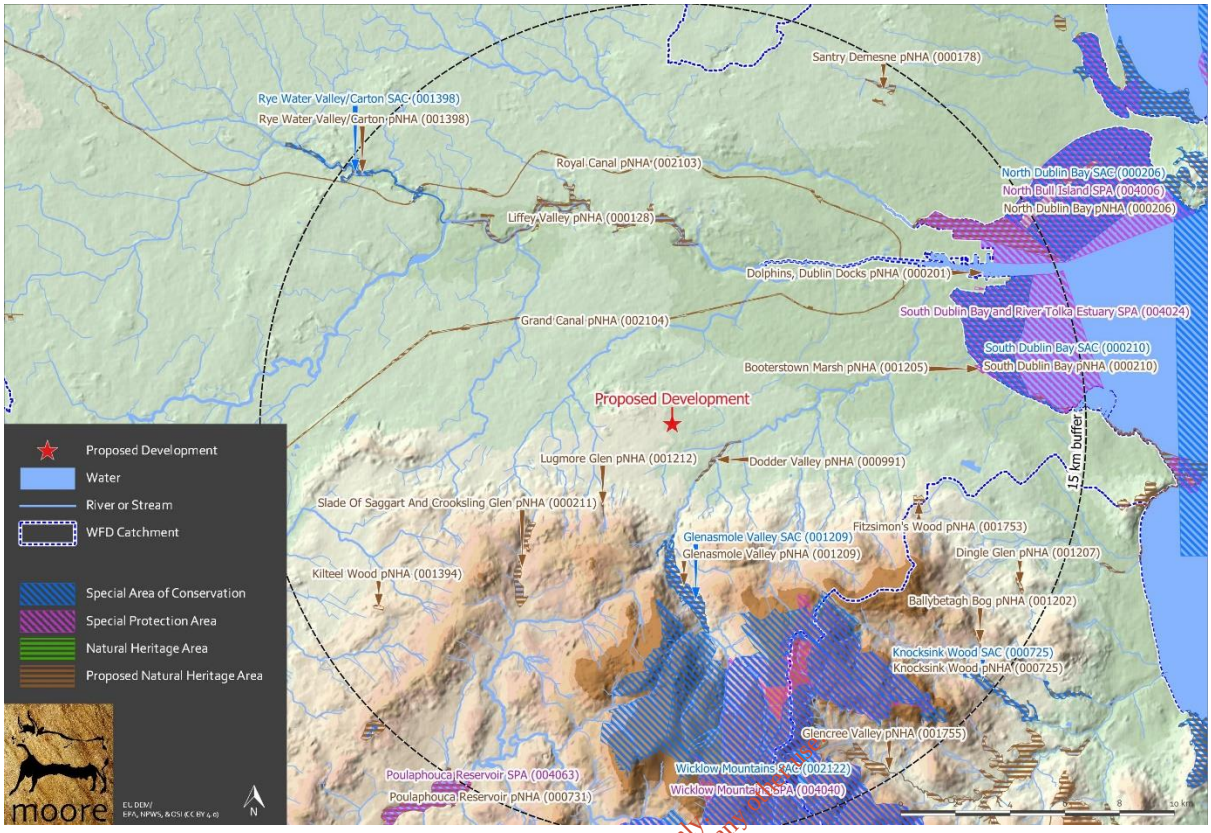

Figure 2.2 Site Location, Showing European sites and NHA's/pNHS'a in the vicinity of the Project

The lands in which the installation is located have no formal designations.

The AA Screening Report concluded that:

1. The Site is not directly connected with, or necessary to the conservation management of the European sites considered in the assessment.
2. The Site, alone or in combination with other projects, is not likely to have significant effects on the European sites considered in the assessment.
3. It is possible to rule out that the site is likely to have significant impacts on any European sites considered in the assessment.

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.

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.

- Bulk diesel is supplied to generators from 9 no. 69,000L tanks located in the tank farm facility in the northwest of the Site.
- Each of the 27 no. emergency backup generators at Buildings A are accompanied by a double skinned day tank (4,000 litres each).
- Each of the 26 no. emergency backup generators at Buildings B are accompanied by a double skinned day tank (4,000 litres each).

- The 2-no. diesel powered fire pumps have 1m^3 'day tanks'.
- Diesel fuel pipelines above ground are Carbon Steel, and below ground are Close Fit PLX (dual-contained pipe system).

There is a total diesel storage capacity on site of 835,000 litres, 835 m^3 or approximately 718 tonnes (assumed density of 0.85 l/kg). The tanks on site are filled to 80% capacity under normal conditions; therefore the total diesel storage on site is 668,000 litres, 668 m^3 or approximately 574 tonnes (assumed density of 0.85 l/kg).

In order to minimise any impact on surface water environment 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.

A standard operating procedure for fuel unloading is in place at the Site to reduce the risk of spills and an on-site Emergency Response Plan (ERP) is it place, the Site maintains spill kits at all storage areas.

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 interceptors are equipped with online hydrocarbon detection and alarm system that connect 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.

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 systems 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.

The only chemical stored onsite, that is hazardous to the environment, is diesel. Diesel will be prevented from entering the attenuation systems by the 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 systems prior to the discharge into the stormwater main (Emission Point SW1). The penstock will allow the outfall of the basin(s) to be closed off to inhibit the outflow in the event of a spill or a fire.

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*.

In the event of a fire at the facility, firewater will be contained to prevent contamination of receiving waters. The onsite attenuation storm cell(s) will be used for retention of potentially contaminated firewater in the event of a fire or accident and water subsequently treated on site or disposed of by a licenced contractor. The total available capacity afforded by the storm cells is more than sufficient to accommodate the maximum volume of contaminated fire water anticipated in the fighting of a fire at the installation.

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 from the site to the Tymon River; there is however, an indirect discharge of stormwater via the public stormwater drain on Airton Road, which subsequently discharges to the Tymon River. A flow control system is used to achieve the required discharge rate to the stormwater drain on Airton Road.

There is a negligible 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 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 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 report:

- 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
- Jacob Site Due Diligence Report, CSEA (20 March 2015)
- Project Phases II Intrusive Ground Investigation Report, ERM (February 2015)

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.

- Bulk diesel is supplied to generators from 9 no. 69,000L tanks located in the tank farm facility in the northwest of the Site.
- Each of the 27 no. emergency backup generators at Buildings A are accompanied by a double skinned day tank (4,000 litres each).
- Each of the 26 no. emergency backup generators at Buildings B are accompanied by a double skinned day tank (4,000 litres each).
- The 2-no. diesel powered fire pumps each have 1m^3 ‘day tanks’.
- Diesel fuel pipelines above ground are Carbon Steel, and below ground are Close Fit PLX (dual-contained pipe system).

There is a total diesel storage capacity on site of 835,000 litres, 835 m^3 or approximately 718 tonnes (assumed density of 0.85 l/kg). The tanks on site are filled to 80% capacity under normal conditions; therefore the total diesel storage on site is 668,000 litres, 668 m^3 or approximately 574 tonnes (assumed density of 0.85 l/kg).

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.

A standard operating procedure for fuel unloading is in place at the Site to reduce the risk of spills and an on-site Emergency Response Plan (ERP) is it 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 there areas is low, and permeable paving are a proven source control technique in handling surface water run off small amounts of hydrocarbons are bio-degraded 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 is 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 planned discharges to ground of processed or contaminated waters, 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.

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