Site Condition Report - DP3442QV

Hayes Data Centre Emergency Back-up Generation Facility

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APPENDICES

1.0 INTRODUCTION

This Site Condition Report (SCR) or 'Site Baseline report' has been prepared by HDR on behalf of the operator, Amazon Data Services UK Ltd (ADS) in support of the application for a variation to existing Environmental Permit (ref: EPR/DP3442QV) for the following installation:

Hayes Data Centre Emergency Back-up Generation Facility
Bulls Bridge Industrial Estate
North Hyde Gardens
Hayes
UB3 4DG
Grid reference: TQ 10514 79252

Updates to the original Site Condition Report (submitted in 2022) are highlighted yellow.

This SCR is intended to provide the Environment Agency (EA) with a description of the baseline conditions prior to site operations commencing. The baseline data presented herein should be referred to upon surrender of the site's environmental permit (once issued) to demonstrate no deterioration of the land has occurred due to operations.

The Hayes Data Centre Emergency Back-up Generation Facility, or 'the site', is part of the larger Union Data Centre Campus (See Appendix A). The campus comprises of x3 data centres with x3 related energy centres. The original SCR for this site covered Energy Centre 1 (EC1), and this permit variation covers the addition of Energy Centre 2 (EC2). Energy Centre 3 (EC3) is covered under a separate permit (ref: ZP3527SS) as it is managed by a different operator.

Relevant site investigations and subsequent remediation works have been carried out across the whole campus prior to the decision that this would become a multi operator and multi permit campus. As such, a combination of reports is required to provide complete baseline data for EC1 + EC2.

This report has been prepared based on the information made available and the conditions at the time of writing. This report is only valid to the extent that the information provided was accurate and complete.

This SCR has been prepared in accordance with the EAs guidance for Applicants (H5) – Site Condition Report document with Sections 2-4 submitted with the application for a permit.

Sections 5-8 are to be maintained during the life of the permit.

Sections 9-11 are to be completed if / when the permit is surrendered.

2.0 BACKGROUND

2.1 Site details

Name of the applicant	Amazon Data Services UK Limited
Name of the site	Hayes Data Centre Emergency Back-up Generation Facility
Activity address	North Hyde Gardens, Bulls Bridge Industrial Estate, Hayes UB3 4DG
National grid reference	TQ 10514 79252
Document reference and dates for Site Condition Report at permit application and surrender	Application submitted: 29/06/2022 Permit reference: DP3442QV Permit issued: 28/09/2023 Permit surrendered: Not applicable
Document references for site plans (including location and boundaries)	Appendix A – Site Plan and Emissions Points Appendix B – Paragon Site Areas Plan

2.2 Site Development plans

The operator, Amazon Data Services UK Limited (ADS) had a permit issued for the EC1 data centre on 28th September 2023. The existing permit covers the 14 no. Emergency Standby Generators (ESG) with associated fuel and urea storage tanks.

At the time of writing, ongoing expansion works will see the development of another Energy Centre (EC2) and an additional 14 no. ESGs and associated fuel and urea storage tanks (See Appendix A). These are due to be commissioned in summer 2025.

2.3 Site activities

The installation is a data centre and utilises ESGs to provide emergency power in the event of grid failure. The ESGs are on site solely to support the data centre when the main electricity supply is not available and will run on Diesel / Hydrotreated Vegetable Oil (HVO).

The total rated thermal input of the 28 no. ESGs is approximately 224.25 MWth (refer to Thermal Schedule in supporting information).

The location of the generators, fuel tanks, emissions points (flues / stacks) and surface water connections are shown in the Site Plan found in Appendix A. The installation boundary encompasses the listed activities only.

Further details can be found in the Environmental Risk Assessment (ERA) and the Non-Technical Summary (NTS) that accompanied the application for an Environmental Permit.

2.4 Site investigations

The relevant plots of land have been referenced by various names throughout the purchasing, planning, and permitting processes (see Appendix B). Throughout this document and supporting documentation, the land covered by the initial SCR is referred to as EC1 or the ‘British Airways & Vodaphone’ plots. The land covered by this variation

application is referred to as EC2 or the 'Abellio' plot and is shown in Appendix A and Appendix B .

Preliminary information on the soil and groundwater quality was provided by Colliers (previously Paragon) for EC1 and EC2 (Appendix E and Appendix F). These were analysed against industry accepted screening values and Site Specific Acceptance Criteria (SSAC) respectively.

Phase 1 and 2 investigations for the BA/Vodafone (EC1) plots identified hazardous contamination that required development of Quantitative Risk Assessments, Monitoring regimes and, finally, a Verification Report. The verification report (Appendix D) has been supplied to conclude the EC1 works. These have all been presented and accepted as part of the Permit for EC1 and are reproduced here again for convenience.

Additional Phase 1 and Phase 2 investigations for the Abellio (EC2) plot, completed by Colliers (previously Paragon), did not identify any potential contamination and therefore no additional work has been carried out. The Phase 1 and Phase 2 investigation reports for the EC2 site are included as Appendix G, Appendix M and Appendix N.

The following site investigations were completed as part of planning requirement for the development of the site.

- Phase 1 Preliminary Risk Assessment Report – British Airways and Vodaphone (Paragon, 2021). Covers the EC1 Site (Superseded by Appendix E).
- Phase 1 Environmental Risk Assessment Report (Paragon, 2020). Covers both EC1 and EC2 (Appendix E).
- Phase 2 Ground Investigation Report – British Airways and Vodaphone (Paragon, 2021). Covers the EC1 Site (Appendix F).
- Phase 2 Ground Investigation Report – Abellio (Paragon, 2021). Covers the EC2 Site (Appendix G).

Supplementary reports to these have also been completed as follows:

- Block 1 and Abellio Preliminary Risk Assessment Overview (Colliers, 2024) (Appendix C). Covers EC1 & EC2 sites
- Verification Report for Data Centre 1 (Union Park 1/UP1), Energy Centre 1 (EC1) and Visitor Reception 1 (Paragon, 2023) (Appendix D). Covers EC1.
- Groundsure Reports (Appendix H). Covers EC1 & EC2 sites.
- Detailed Quantitative Risk Assessment (Paragon, 2021) (Appendix I). Covers EC1 site.
- Remediation Strategy (Paragon, 2021) (Appendix J). Covers EC1 site.
- Groundwater Monitoring Report 4 (Paragon, 2022) (Appendix K). Covers EC1 site.
- Paragon Piling Works Risk Assessment – BA and Vodaphone (Paragon, 2021) (Appendix L). Covers EC1 site.
- Paragon Piling Works Risk Assessment – Abellio (Paragon, 2022) (Appendix M). Covers EC2 site
- Paragon Environmental Letter Report - Abellio (Paragon, 2022) (Appendix N). Covers EC2 site.

The Phase 1 Environmental Risk Assessment (preliminary report superseded by Appendix E to include the Abellio EC2 plot) and Phase 2 reports for the former British Airways and Vodaphone plots of land were completed by Colliers in 2019 for due diligence purposes and were updated and submitted to planning in 2021. These reports identified the presence of some degree of contamination associated with the historical land use. As such, recommendations were made for additional assessments prior to redevelopment. Additional boreholes were completed by Colliers in 2020 (updated and submitted to planning in 2021). This identified that Detailed Quantitative Risk Assessment (DQRA) was required to understand the risks to the River Crane/Yeading Brook. The DQRA showed that the site does not pose any significant risks to Controlled Waters (River Crane).

In addition to this, as agreed with the London Borough of Hillingdon, a Remediation Strategy was prepared to state the mitigation measures required to be put in place to reduce the risks to human health and Controlled Waters. This report was submitted to discharge multiple conditions associated with the planning application ref. 75111/APP/2020/1955. Monitoring associated with this planning condition has been completed and currently there is no further ground water monitoring required to discharge this condition.

A Groundwater Monitoring Report (Appendix K) was prepared by Colliers to demonstrate that the construction activities have not impacted the River Crane. This report demonstrates that the demolition and groundworks have been carried out in accordance with Planning requirements. A report was submitted to the LPA discharging Condition 33, thus demonstrating that the site is free from potentially hazardous contamination and that remediation was successful.

An updated Preliminary Risk Assessment Overview (Appendix C) has been produced to provide information about soil and groundwater quality following the building works on site for EC1 and EC2.

The Phase 1 and 2 investigation works for the British Airways and Vodafone Plots (containing EC1) identified the potential for some contamination arising from historical land use on these portions of the site. As a result, a Detailed Quantitative Risk Assessment (DRQA) (Appendix I), Remediation Strategy (Appendix J) followed by the necessary Groundwater Monitoring (Appendix K) and Verification (Appendix D) Reports have been prepared. These demonstrate that the mitigation measures put in place to reduce the risks to human health and Controlled Waters have been successfully implemented and no further works are required.

The Phase 1 and 2 investigation works for the Abellio Plot (containing EC2) did not identify any contamination on this portion of the site. As a result, no DRQA, Remediation Strategy or Groundwater Monitoring was necessary. A Verification Report for EC2 is therefore not required and no further mitigation measures or remediation works are warranted (see Appendix C, page 10).

An anomaly was identified during an Unexploded Ordnance (UXO) spot-check of a borehole as part of the Ground Investigation by Colliers. The anomaly was excavated in February 2022 and an Environmental Letter was provided including a clearance letter of the UXO (Appendix N).

2.5 Proposed monitoring

The sole risk to soil and groundwater is regarded to be the limited use of liquid fuels such as diesel/HVO. The installation of boreholes to facilitate ongoing soil and groundwater monitoring is going to increase the risk to the environment as it will present a potential pathway to ground for pollutants e.g. in the unlikely event of a spillage.

To mitigate the risks of spillages and fuel entering the environment, the site has primary, secondary and tertiary containment systems, with leak detection in place along with comprehensive spill control Site Operating Procedures (SOPs) and Emergency Operating Procedures (EOPs) in place, to prevent and contain pollution at source before it enters the environment.

Given the above, we are proposing that there is no requirement to complete ongoing soil and groundwater monitoring unless there is a pollution incident that warrants further investigation, e.g., significant spillage which has led to pollution of the environment.

3.0 CONDITION OF THE LAND AT PERMIT ISSUE

Table 3.1 – Environmental setting

Condition area	Description
Geology Data source: • Appendix F– Phase 2 Environmental Site Investigation Report • Appendix G – Phase 2 Ground Investigation Report (Abellio) • Appendix H– Groundsure Report • Appendix C– Preliminary Assessment	The geology of the site is London Clay Formation, overlain by Lynch Hill Gravel, Alluvium and Langley Silt. Portions of the site are classified as made or infilled ground, although the rock description in these areas are unknown/unclassified. This information is taken from the Groundsure maps and the 2019 ground investigation report. Site investigations completed in 2019 (Appendix F), which included 36 exploratory holes, found that the made ground comprised of black sandy gravel of fine to coarse, angular to sub-angular brick, flint and clinker to a depth of circa 5mbgl. The site investigation report (Appendix G) for the former Abellio plot found that the site geology is comprised of Lynch Hill gravel, Langley silt and London Clay. The Preliminary Assessment (Appendix C) states that for EC1 the Soil Organic Matter (SOM) content within Made Ground ranged between 1.1% and 1.5% (average 1.36%). For the Abellio site (EC2), the SOM content for the Made Ground was 2.5% and 1% for the natural soil. Stability maps indicate that the site is very low risk for collapsible ground stability hazards, landslide ground stability hazards and negligible for ground dissolution stability hazards and running sand ground stability hazards. The site is low risk for running sand conditions and for shrinking or swelling ground stability hazards. The site is very low and moderate risk (moderate risk across most of the site) for compressible and uneven settlement hazards.
Hydrogeology Data source: • Appendix A – Site Plan • Aquifer designation and Soilscape mapping available at www.magic.gov.uk • Appendix C – Preliminary Assessment	The shallow superficial deposits (Lynch Hill Gravel, Alluvium and Langley Silt) are classified as Secondary and Principal Aquifers. These were formally known as minor and major aquifers respectively. The principal aquifer can provide a high level of water storage and can support water supply/river base flow strategically. The Secondary A aquifer is similar but capable of these tasks on a local level. The underlying London Clay Formation is an Unproductive Stratum and therefore is in an area of low permeability with negligible significance for water supply and river base flow. The DQRA (Appendix I) completed permeability testing which identified that the risks to the underlying aquifer are low. Due to the aquifers that the site sits upon, there is a high level of groundwater vulnerability, meaning pollutants are easily transmitted within the near surface groundwater. The soil can be described as high leaching with absence of low permeability superficial deposits. There is no soluble rock risk within this site. There are no sensitive potable abstraction points within 1km of the site. The site is not in a Source Protection Zone. The Department for Environment Food & Rural Affairs (DEFRA) “MAGIC map” tool shows that the soil scape has loamy soils with naturally high groundwater.

Condition area	Description
Hydrology Data source: • Appendix H - Groundsure Report • Environmental Agency Flood map for planning	The River Crane runs along the Eastern site boundary and the Grand Union Canal is located South of the industrial estate. The River Crane leads into the Yeading Brooke and contains water year-round in normal circumstances. The river achieves a chemical rating of 'Fail' and an overall rating of 'Moderate. The risk of flooding from this source is reported as medium/high near the river source at the edge of the site boundary (1 in 30-year return), but non-existent within the permit boundary (greater than a 1 in 1000-year return). There have been 0 records of historical flood events within 250m of the river. The river is not thought to benefit from any flood defences and currently does not have any in place. In addition, the river is some 5m below the site level. There is a high risk of surface water (pluvial) flooding in some areas on site, with a 1 in 30-year return for 0.3-1.0m flooding. Extreme rainfall events can lead to this type of flooding. Surface water attenuation has been provided to accommodate all storms up to and including the 1 in 100-year return period with an allowance for 40% climate change. Flooding from groundwater is expected to be low across the full site with potential for moderate levels encroaching on the Western site boundary.

Condition area	Description
Ecological Designated Sites Data source: • Appendix H– Groundsure Report • Pre-application Conservation Screening Report 19082024.	There are no Sites of Special Scientific Interest (SSSI), Ramsar sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA), National Nature Reserves (NNR), Local Nature Reserves (LNR), Designated Ancient Woodland, Biosphere Reserves, Forest Parks, Marine Conservation Zones, Nitrate Sensitive Areas, Nitrate Vulnerable Zones or proposed/potential Ramsar, SAC or SPA within 2000m of site. There are 12 Local Wildlife Sites (LWS) within 2,000m from the site. These are: • London's Canals • Yeading Brook, Minet Country Park and Hitherbroom Park. • Crane Corridor • Cranford Countryside Park and Open Space • Hartlands Wood and Lower Park Farm • Lake Farm Country Park • Cranford Lane Gravel Workings • Airlinks Ponds • Bolingbroke Way Sunken Pasture • St Mary's, Wood End • Thorncliffe Rough • Havelock Cemetery The closest SAC, SPA and Ramsar sites are within 10,000m of site. These are: • Richmond Park (SPA) • South West London Waterbodies (SPA and Ramsar) There are three non-statutory local planning authority designated conservation areas within 200m of the site. These are: • Botwell, Nestles (18m SW) (Hillingdon) • Bulls Bridge (83m SE) (Hillingdon) • Canalside (157m SE) (Ealing) There are 15 areas of Green Belt within 2000m of the site. These areas are protected to prevent urban sprawl, meaning that the potential for future additional sensitive human receptors is unlikely. These Green Belts are located in Hounslow, Hillingdon and Ealing local authorities.

Table 3.2 – Pollution history:

Condition area	Description
Pollution incidents Data source: • Appendix H – Groundsure Report	According to Groundsure's database there have been no historic pollution incidents on site. There are reports of 15 pollution incidents within 500m of the site. 14 of these have been classed as either 'No impact' or 'Minor'. The only Significant impact was in June 2020, and this was approximately 116m NE. This was pollution to water of an "unidentified oil". There was a licensed pollutant release on site by British Airways. The operator held a Part B permit. The pollutant was released through Surface Cleaning. British Airways were also authorised to use Mercury and Cadmium within their operations, with the receiving water noted as Thames Estuary. This occurred 150m South of the site.
Historical land-uses and associated contaminants Data source: • Appendix H – Groundsure Report	Historical land use maps show that the railway has boarded the north of the site since at least the mid 1800's, when the site was unoccupied. Between 1920 – 1935 there was major urbanisation of the surrounding area and also a Creosoting Works constructed on the northern half of the site. The Creosoting works remained onsite until sometime between 1964 – 1972, although it is not known if it continued to be in use for this full time period. By 1979 the Creosoting works had been demolished and a power station built, taking up most of the western portion of the site. The power station remained until around 2001 when the building was demolished and replaced with another building. This building has since been demolished and the new data centre complex constructed. The surrounding area has been used for several industrial purposes including a neighbouring Creosoting works to the east, various factory buildings to the east and west as well as joinery works, various railway works, and an asphalt plant to the north. The historical data maps suggest that there is potentially contaminative land from historical uses throughout the site. There is no evidence on the historical maps of the two Historical landfill sites which were located onsite.

Condition area	Description
Waste management facilities Data source: • Appendix H– Groundsure Report	**Landfill Sites** There are four Historical Landfill sites recorded within 500m of the site. Two of which were located on site. Details of these are shown below: • Unidentified Operator. Onsite. Inert, commercial, and household waste. Last recorded on 31/12/1936. • Unidentified Operator. Onsite. Inert, commercial, and household waste. Last recorded on 31/12/1936. • Unidentified Operator. 57m SE. Inert, industrial, commercial, household and special waste. Last recorded on 31/12/1949. • Unidentified Operator. 116m NE. No further details are provided on the above historic landfills. There are also no active landfill sites listed within 500m of the site. **Licensed Waste Management Facilities** There are nine Licensed Waste Management Facilities within 500m of the site: • 159m E, Operator: F M Conway Limited, Type of site: Physical treatment facility (>/=75,000 tonnes), Annual tonnage: 304999 tonnes, License issued: 03/02/2015. • 190m E, Operator: F M Conway Limited, Type of site: (>/=75,000 tonnes), Annual tonnage: 270,000 tonnes, License issued: 03/02/2015. • 219m N, Operator: Personal Hygiene Services Ltd, Type of site: Clinical waste transfer station (25,000 tonnes), Annual tonnage: 24,999 tonnes, License issued: 08/01/1999 and modified 13/09/2017. • 227m N, Operator: Personal Hygiene Services Ltd, Type of site: Clinical waste transfer station (25,000 tonnes), Annual tonnage: 0 tonnes, License issued: 08/01/1999. • 311m N, Operator: Rentokil Initial UK Ltd, Type of site: Special waste transfer station (25,000 tonnes), Annual tonnage: 0 tonnes, License issued: 27/09/1994 and modified 29/08/1997. • 321m N, Operator: Rentokil Initial UK Ltd, Type of site: Special waste transfer station (25,000 tonnes), Annual tonnage: 0 tonnes, License issued: 27/09/1994 and surrendered 23/12/2008. • 372m SE, Operator: Personal Hygiene Services Ltd, Type of site: Clinical waste transfer station (25,000 tonnes), Annual tonnage: 857 tonnes, License issued: 11/12/1991 and surrendered 31/07/2000. • 428m E, Operator: J Simpson Waste Management Ltd, Type of site: Household, Commercial & Industrial waste transfer station (unknown tonnes), Annual tonnage: unknown, License issued: 08/04/2021. **Waste Exemptions** There are 37 facilities within 500m of the site that have an exemption for waste activities such as storage, treatment, use or disposal of waste.

Condition area	Description
	Licensed Industrial Activities (Part A(1)) There are 9 records of Part A(1) installations regulated by the Environmental Permitting (England and Wales) Regulations 2016 within 500m of the site. • 142m W, Nestle UK Ltd, Combustion (any fuel >/= 50MW), Permit no.: VP3332ST, Status: **Surrendered** • 343m SW, FM Conway Ltd, Temporary storage of hazardous waste not under S5.2 pending activities listed in S5.1, 5.2, 5.3 and paragraph (b) of this section with a total capacity > 50 tonnes, excl. temporary storage where generated, Permit no.: TP3503LL, Status: **Effective** • 343m SW, FM Conway Ltd, Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes/day involving recycling or reclamation of inorganic materials other than metals or metal compounds, Permit no.: VP3630WE, Status: **Superseded** • 343m SW, FM Conway Ltd, Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes/day involving recycling or reclamation of inorganic materials other than metals or metal compounds, Permit no.: TP3503LL, Status: **Effective** • 343m SW, FM Conway Ltd, Associated process, Permit no.: VP3630WE, Status: **Superseded** • 343m SW, FM Conway Ltd, Associated process, Permit no.: TP3503LL, Status: **Effective** • 343m SW, FM Conway Ltd, Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment, Permit no.: VP3630WE, Status: **Determination (not issued yet)** • 343m SW, FM Conway Ltd, Temporary storage of hazardous waste not under S5.2 pending activities listed in S5.1, 5.2, 5.3 and paragraph (b) of this section with a total capacity > 50 tonnes, excl. temporary storage where generated, Permit no.: VP3630WE, Status: **Superseded** **Licensed Pollutant Release (Part A (2)/B)** There are 14 records of Part A (2)/B installations regulated by the Environmental Permitting (England and Wales) Regulations 2016 within 500m of the site. One of these was located within the site boundary: *British Airway, Surface Cleaning, Part B Permit, No enforcement* **Licensed Discharges to Controlled Waters** There are 3 sites within 500m that have a permit issued under the Water Resources Act 1991 for discharges to controlled waters. **Pollutant Release to Public Sewer** There are 3 records of discharges of special category effluents to public sewers within 500m of the site. **List 1 Dangerous Substances** There is 1 record of discharge of a List 1 Dangerous Substance within 500m of the site. The authorised substances were Mercury and Cadmium and were received by the Thames Estuary.

Table 3.3 – Evidence of historical contamination

Condition area	Description
Evidence of Historical Contamination Data Source: • Appendix F– Phase 2 Environmental Site Investigation Report • Appendix G – Phase 2 Ground Investigation Report - Abellio • Appendix H– Groundsure Report	In addition to the Groundsure reports, windowless sample boreholes and trial pits were completed across the BA and Vodafone sites in June and July 2019 (See Appendix F). Extensive laboratory testing of the soils recovered from the intrusive locations identified Chrysolite asbestos fibre bundles within made ground, alongside exceedances for some metals, Polycyclic Aromatic Hydrocarbons (PAH) and Total Petroleum Hydrocarbons (TPH). It was recommended that the asbestos was removed or encapsulated. In addition, groundwater and Leachate testing identified various contaminants that existed above the limit of detection. Furthermore, low concentrations of heavy metals, PAH and petroleum derivatives were discovered in both the groundwater and leachate testing. The report stated that the presence of cyanide found in the groundwater is thought to be from an off-site source as it is not present within soil or leachate testing. Due to the site previously operating as a landfill site, the presence of heavy metals such as arsenic and hydrocarbons such as PAH, TPH, and benzene, are not unusual. The ground investigation report for the former Abellio plot (Appendix G), completed by Colliers (previously Paragon) in 2021, comprised of a cable percussive borehole, windowless sample boreholes and trial pits. Laboratory analysis identified historical uses of the site as part of a creosote works and landfill which were reported as a potential source of contamination. Contaminants of concern include Made Ground including asbestos from historical site uses and landfilling activities, total Petroleum Hydrocarbons from current vehicle use and historical site uses, biodegradable materials and other contaminants (heavy metals and Polycyclic Aromatic Hydrocarbons) within the infilled ground, and UXO and historical ammunition. The asbestos was quantified at <0.001% and as the site is to be almost entirely surfaced with hardstanding, the risks to future site users are considered to be low. The concentrations of contaminants within soil and groundwater are suitable for the proposed end use of the development, and no further investigation, monitoring or remediation is required on the Abellio (EC2) plot. A remediation strategy (Appendix J) was prepared to state the mitigation measures required to reduce the risks to human health and Controlled Waters arising from potential pollution on the BA and Vodafone (EC1) plot. The report was also produced to comply with Planning Condition 31(1c) & 33 (Planning application ref: 5111/APP/2020/1955). As per Appendix E, Appendix H and Appendix I, concentrations of PAH and TPH within the groundwater samples exceeded the Environmental Quality Standard (EQS) with respect to impacts on the River Crane. In addition, the Ammonia concentrations were also elevated. However, following the preparation of a DQRA (Appendix I), the risks to the River Crane were low. Furthermore, the conclusions of the report stated that remediation would not provide quantifiable benefits to Controlled Waters, particularly for Ammonia, as the concentrations within the river were already elevated. In addition, it was concluded that the levels of hydrocarbons present in soil and groundwater on this site would be unlikely to require remediation as the concentrations found within the River samples were low. Gas monitoring was also undertaken on site, which identified elevated levels of carbon dioxide (CO_2) and methane (CH_4). In addition, naphthalene was highlighted as a concern in relation to the SoBRA vapour assessment for the site. Nevertheless, the site is to be capped with hardstanding and gas and vapour resistant membranes are to be installed (see Appendix I, Appendix J).

Table 3.4 - Baseline soil and groundwater reference data

Condition area	Description
Baseline soil and groundwater reference data Data Source: • Appendix F– Phase 2 Environmental Site Investigation Report • Appendix G – Phase 2 Ground Investigation Report	Extensive baseline soil and groundwater reference data has been obtained from the previously completed site investigation reports (See Appendices). In relation to the permittable activities, only hydrocarbons associated with the use and storage of diesel fuel/HVO and Urea are considered to be 'relevant hazardous substances' which will be in use at the site. These will be used to fuel the backup generators and the selective catalytic reduction technology and also will include any associated lubricant oil used during maintenance of the generators. The results of the soil and groundwater analysis completed by Colliers as part of the Preliminary Assessment (Appendix C) for the Environmental Permit identified the concentrations of ammoniacal nitrogen, TPH and vegetable oil. The results of the soil analysis for Ammoniacal Nitrogen and TPH were below their relevant Generic Assessment Criteria (GAC) and the results of the water samples are below the SSAC (TPH) or within the same order of magnitude as the results presented in the DQRA (ammoniacal nitrogen), which concluded the risks to the River Crane from the site were low. With reference to Vegetable Oil, there are no GAC or EQS values. Furthermore, it should be noted that although the analytical method might cover any vegetable oil present in the sample, we cannot say that there are not any other fats, oils or greases that have influenced the results. The results provided might be indicative of the presence of vegetable oil but do not exclusively show the quantity of vegetable oil that is present. Nevertheless, the concentrations identified are not considered to be significant. Appendix G results conclude that chemical tests for contaminants within the Made Ground and natural soil on the former Abellio plot were below the GAC for commercial land use. The results of groundwater analysis found marginal exceedance of the Environmental Quality Standards for PAH and Heavy Metals, however, exceedances were marginal and no gross contamination was encountered.

Table 3.5 - Supporting information sources

Condition area	Description
Supporting information and sources	Please see the following folders / documents that accompany the EPR application: • HAYES, Bulls Bridge - Phase 1 Environmental Risk Assessment REV D (Paragon, 2021) – EC1 & EC2 sites. • HAYES, Bulls Bridge - Phase 2 Ground Investigation Report Rev D BA and Vodafone Plots (Paragon, 2021) – EC1 site. • HAYES, Bulls Bridge – Phase 2 Ground Investigation Report Abellio Bus Garage (Paragon, 2021) – EC2 site. • HAYES, Bulls Bridge - Remediation Strategy - Rev E (Paragon, 2021) – EC1 site. • HAYES, Bulls Bridge - Paragon DQRA Report FINAL Rev C (Paragon, 2021) – EC1 site. • HAYES, Project Union – Colliers Block 1 and Abellio IED Assessment Letter – EC1 & EC2 site. • HAYES, Project Union - Paragon Piling Works Risk Assessment (Paragon, 2021) – EC1 site. • HAYES, Bulls Bridge – Paragon Piling Works Risk Assessment (Paragon, 2022) – EC2 site. • North Hyde Gardens, UXO Abellio – Paragon Environmental Letter Report (Paragon, 2022) – EC2 site. • HAYES, Union Park - Phase 1 Verification Report (Colliers, 2023) – EC1 site. • Site Plan and emission points – EC1 & EC2 sites. • Groundsure Insights – EC1 & EC2 sites. • Publicly available online geological mapping at www.bgs.ac.uk • Aquifer designations available at www.magic.gov.uk • Environmental Agency Flood map for planning • Pre-application Conservation Screening Report (EA, 2024) – EC1 & EC2 sites.

4.0 PERMITTED ACTIVITIES

Table 4.1 - Permitted activities

Permitted activities	Schedule 1 ref 1.1 Part A (1) a) (i) combustion plant >50 MWth. Operation of 14no emergency back-up generators totalling 112MWth, with Directly Associated Activities (DAA) including diesel / HVO fuel storage, urea storage and surface drainage system. **Updated Site Condition Report for variation application for EC2 2024.** An application to vary the permit is being submitted to account for the following changes: • 14no. new generators are being installed. These are to be located in an additional Energy Centre – EC2. • 14.no fuel tanks to installed. These will sit below each generator they serve and are referred to as 'belly tanks'. • 7no. Urea storage tanks are to be installed. These tanks will be located adjacent to each generator and will provide urea for the selective catalytic reduction system on each generator to mitigate NO_x emissions.
Non-permitted activities undertaken	The installation boundary is limited to the permitted activities. The internal data halls and office space are not part of the permitted activities. In normal conditions these will operate using electricity provided by the National Grid.
Document references for: • **plan showing activity layout; and** • **environmental risk assessment.**	Please see the following folders / documents that accompanied the EPR application. In addition to this, the following have been updated as part of the application to vary the existing Environmental permit. • Site Plan and emission points • Environmental Risk Assessment • BAT assessment • Drainage Plan

5.0 CHANGES TO THE ACTIVITY

Have there been any changes to the activity boundary?	There are changes to the permitting boundary due to the EP variation including EC2, however, there are no changes to the site boundary as a result of this EP variation application.
Have there been any changes to the permitted activities?	The updated SCR is to support the EP variation application (DP3442QV) to reflect the installation of an additional 14no. generators and associated fuel tanks.
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	n/a - To be completed if there are changes to the activity / on decommissioning.
Checklist of supporting information	Description of the changes to the permitted activities (within this document: • Appendix A.

6.0 MEASURES TAKEN TO PROTECT LAND

Checklist of supporting information	The measures for the 14no. new generators for EC2, their fuel and urea tanks have been outlined in the updated BAT assessment submitted with application to vary existing environmental permit.

7.0 POLLUTION INCIDENTS AND REMEDIATION

Checklist of supporting information	The site condition of the data centre has not changed since the original EP application was submitted, as there has been no change to the site boundary and no ground pollution incidents have been reported. No additional baseline data / site investigation has been undertaken for the EP variation application.

8.0 SOIL GAS AND WATER QUALITY MONITORING

Checklist of supporting information	n/a - To be completed on decommissioning and permit surrender.

9.0 DECOMMISSIONING AND REMOVAL OF POLLUTION RISK

Checklist of supporting information	n/a - To be completed on decommissioning and permit surrender.

10.0 REFERENCE DATA AND REMEDIATION

Checklist of supporting information	n/a - To be completed on decommissioning and permit surrender.

11.0 STATEMENT OF SITE CONDITION

n/a - To be completed on decommissioning and permit surrender.

APPENDIX A

SITE PLAN AND EMISSION POINTS (EC1, EC2)

APPENDIX B

PARAGON SITE AREAS PLAN (EC1, EC2)

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PRELIMINARY RISK ASSESSMENT OVERVIEW STATEMENT (EC1, EC2)

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PILING WORKS RISK ASSESSMENT (BA & VODAPHONE, EC1)

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PILING WORKS RISK ASSESSMENT (ABELLIO, EC2)

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UNEXPLODED ORDNANCE SURVEY LETTER (ABELLIO, EC2)

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PRE-APPLICATION CONSERVATION SCREENING REPORT (EC1, EC2)