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Site Condition Report – 10 Ardra Road, Enfield

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Executive Summary

Introduction	EHS Projects Limited (EHS) was commissioned by Ark Data Centres (the 'Client) to undertake a Site Condition Report for 10, Ardra Road, Enfield, N9 0BD (hereafter referred to as the 'Site'). The purpose of this report is to support an Environmental Permitting Regulations (EPR) permit application and provide information regarding the condition of the Site.
Subject Site	The Site comprises an approximate 2.04 ha plot of land centred on National Grid Reference 535704, 193014 approximately 3.5km south-east of Enfield town centre.
Surrounding Area	The surrounding land uses include: • North – the Site is bound to the north by Ardra Road and beyond that is a Lidl regional distribution centre. • East – the Site is bound to the east by a Biffa waste management facility. • South – the Site is bound to the south by Eley Business Park. • West – the Site is bound to the west by Pymmes Brook and a skip hire and recycling facility beyond that.
Site History	Earliest available mapping (1868-1879) shows that the Site is undeveloped and comprised fields. By 1914, the map shows the Site to be part of marshland and by the late 1960s the Site is occupied by part of a sludge lagoon associated with a sewage works. The Site largely remains the same and the current layout of the Site does not appear until the 2020 map. Historically, the surrounding areas largely comprised undeveloped land, with development occurring in subsequent years comprising various works, including a sewage works, clothing factory and furniture factory. There is also a railway line running in a north-east to south-west direction approximately 250m west of the Site.
Current Site Use	The Site is currently a construction site converting an existing warehouse that was used a distribution centre for Heal's furniture into a secure, highly resilient data centre facility.
Geology, Hydrogeology and Hydrology	British Geological Survey records indicate that the Site is underlain by superficial deposits comprising Alluvium, which is classified as a Secondary A Aquifer by the Environment Agency (EA), which in turn is underlain by bedrock geology comprising the London Clay Formation, which is classified as an Unproductive Strata by the EA. The database indicates that there are no surface water features on the Site. The nearest surface water feature is located 15m south-west of the Site, based on available mapping this is identified as Pymmes Brook which runs adjacent to the western border of the Site and curves around towards a south-easterly direction. The Site is located within a Flood Zone 1 (low probability). The database indicates that the Site is in an area that has potential for groundwater flooding to occur at the surface.
Summary of Site Walkover	EHS have noted the following potential sources of contamination during the walkover: • The Site currently comprises the construction of a data centre facility. • 12 Nr fuel tanks for associated standby generators are in place. • There appear to be no evidence of flooding or ponding on the external areas of the Site.

	• There were two electrical substation located at each end of the service yard, however these were still under construction. • There was no evidence of spills, staining or corrosion observed at the Site.
Summary of Environmental Risk	EHS consider the Site to be generally low to moderate risk with respect to contaminated land liability due to the Site's previous uses including as a sludge lagoon and surrounding areas comprising commercial and industrial use historically and therefore a moderate potential for soil and groundwater contamination. Previous investigations undertaken by Waterman in 2018 did not identify concentrations of chemical contamination exceeding the relevant screening values for a commercial end use. However, asbestos fibres were identified in three Made Ground samples tested. It is considered that the risks from asbestos and other potential contaminants will be mitigated by the presence of hard standing across the Site, which will act as a barrier between any residual contamination and site users and mitigate any potential pathways to controlled waters. Based on the findings, it is considered that the Site's future permitted use is unlikely to pose a risk to the baseline condition of the Site.

This Executive Summary is part of this complete report; any findings, opinions, or conclusions in this Executive Summary are made in context with the complete report. EHS recommends that the user reads the entire report for all supporting information related to findings, opinions, and conclusions

1 Introduction

1.1 Purpose

EHS Projects Limited (EHS) was commissioned by Ark Data Centres (the 'Client) to undertake a Site Condition Report for 10, Ardra Road, Enfield, N9 0BD (hereafter referred to as the 'Site').

A Site location plan is presented as Figure 1 in Annex A.

The purpose of this report is to support an Environmental Permitting Regulations (EPR) permit application and provide information regarding the condition of the Site.

1.2 Scope of Services

This report presents the findings of a desk study based on the following information:

- Historical uses of the Site and surroundings;
- Current use and condition of the Site;
- Environmental setting in terms of geology, hydrogeology, hydrology and surrounding land uses;
- Relevant publicly available environmental records.

The Environmental Desk Study assessment was conducted with due regard to the following guidance:

- Environment Agency: H5 Site Condition Report guidance
- The National Planning Policy Framework.
- BS5930 (2015) Code of Practice for Ground Investigations; and,
- BS1075 (2013) Investigation of Potentially Contaminated Sites – Code of Practice;
- Contaminated Land Report (CLR) 11 Model Procedures for the Management of Land Contamination.

1.3 Significant Assumptions

This report presents EHS's observations, findings, and conclusions as they existed on the date that this report was issued. This report is subject to modification if EHS becomes aware of additional information after the date of this report that is material to its findings and conclusions.

The reliability of information provided by others to EHS cannot be guaranteed to be accurate or complete. Performance of this Site Condition Report is intended to reduce, but not eliminate, uncertainty of environmental conditions associated with the subject site; therefore, the findings and conclusions made in this report should not be construed to warrant or guarantee the subject site, or express or imply, including without limitation, warranties as to its marketability for a particular use. EHS found no reason to question the validity of information received unless explicitly noted elsewhere in this report.

1.4 User Reliance

This report was prepared for Ark Data Centres. Reliance on the Report by any other third party is subject to requesting and fully executing a reliance letter between EHS and the third party that acknowledges the EHS Standard Terms and Conditions with the Client, to the same extent as if they were the Client thereunder.

EHS has been provided with information from third parties for information purposes only and without representation or warranty, express or implied as to its accuracy or completeness and without any liability on such third parties part to revise or update the information. Where reliance has been provided by third parties to potential purchasers this is noted in our report.

2 Site Description

2.1 Location

The Site comprises an approximate 2.04 ha plot of land centred on National Grid Reference 535704, 193014 approximately 3.5km south-east of Enfield town centre.

The Site location is presented as Figure 1 in Annex A.

2.2 Subject and Surrounding Area

The Site is located off Ardra Road within an area of mixed light industrial and commercial land uses. The closest residential land use is located approximately 310m to the northwest beyond third party light industrial / commercial properties.

The Site is currently a construction site converting an existing warehouse that was used a distribution centre for Heal's furniture into a secure, highly resilient data centre facility.

The Site layout is presented as Figure 2 in Annex A.

Land uses in the immediate vicinity include the following principal features:

Table 1: Summary of Surrounding Land Use

Direction	Land Use
North	The Site is bound to the north by Ardra Road and beyond that is a Lidl regional distribution centre.
East	The Site is bound to the east by a Biffa waste management facility.
South	The Site is bound to the south by the London Energy EcoPark.
West	The Site is bound to the west by Pymmes Brook and a skip hire and recycling facility in Eley Industrial Estate beyond that.

The Site benefits from a private wire connection to the London Energy, Energy from Waste Plant, providing renewable energy to the data centre facility.

3 Review of Publicly Accessible Information

3.1 Environmental Setting

The environmental setting of the Site can influence the susceptibility to, and relative magnitude of, environmental impacts and liabilities associated with on and off-site sources of contamination. The following section presents a summary of environmental reviews conducted on publicly available records.

3.1.1 Geology and Hydrogeology

British Geological Survey (BGS) geological mapping and Environment Agency (EA) hydrogeological mapping indicate the following geological progression beneath the Site:

Table 2: Summary of Geology and Hydrogeology

Geology	Geological Description	Aquifer Status	Aquifer Description
Superficial: Alluvium	Clay, Silt, Sand and Gravel	Secondary A Aquifer	These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.
Bedrock: London Clay Formation	Clay, Silt and Sand	Unproductive Strata	These are layers with low permeability that have negligible significance for water supply or river base flow.

There is one BGS record of a borehole located on the western part of the Site (TQ39SE23). The record reported 'sludge' encountered down to a depth of 1.22m overlying a grey Clay to a depth of 2.13m, which in turn overlies ballast to a depth of 6.10m, followed by a blue Clay down to the base of the borehole at 11.81m below ground level (bgl).

The database identifies four groundwater abstractions within a 500m radius of the Site. The nearest one is located 424m east of the Site and is operated by Thames Water Utilities Limited for a public potable water supply.

The Site is located within an EA designated groundwater Source Protection Zone (SPZ). The majority of the Site is within a Zone II (Outer Protection Zone) and a small area located in the south-eastern part of the Site is located within a Zone I (Inner Protection Zone).

3.1.2 Coal Mining

The database indicates that the Site is not within an area affected by coal mining.

3.1.3 Radon

BGS records indicate that the Site is in a lower probability radon area where less than 1% of homes are estimated to be at or above the Action Level. On this basis, the BGS states that "no radon protective measures are necessary in the construction of new dwellings or extensions".

3.1.4 Hydrology

The database indicates that there are no surface water features on the Site. The nearest surface water feature is located 15m south-west of the Site, based on available mapping this is identified as Pymmes Brook which runs parallel to the western border of the Site, before flowing towards a south-east then southerly direction for approximately 3.7km where it discharges into the River Lea Navigation.

Th database indicates that there are two surface water abstractions within a 500m radius of the Site. Both are located 334m south of the Site, one is operated by London Energy Limited and the other is operated by London Waste Limited and they abstract from Salmons Brook.

The Site is located within a Flood Zone 1 (low probability).

The database indicates that the Site is in an area that has potential for groundwater flooding to occur at the surface.

3.1.5 Sensitive Land Uses

The Site is in a Nitrate Vulnerable Zone (NVZ), records show it to be a surface water and is called Lee NVZ.

3.1.6 Summary of Site Sensitivity

The Site is considered to be of moderate environmental sensitivity, based on the following key factors:

- The published geology indicates that the Site is underlain by Alluvium followed by the London Clay Formation.
- The EA has classified the Alluvium as a Secondary A Aquifer and the London Clay as an Unproductive Strat.
- The Site is located within an EA designated SPZ.
- There are groundwater and surface water abstractions within 500m of the Site.
- The Site is located within a NVZ.

3.2 Environmental regulatory Database Review

The following environmental data has been obtained from a Landmark Envirocheck Report (Annex B), which includes a search of databases held by regulatory bodies including the EA, BGS, the Department for the Environment, Food and Rural Affairs (DEFRA), City, District and Borough Councils and County Councils. The table below summarises key features identified on-site and within the 500m search radius.

Table 3: Summary of Environmental Regulatory Database Review

Database	On-site	0-500m	Description
Contaminated land register entries	0	0	Not applicable (N/A)
Current registered landfills	0	1	This is located 357m east of the Site. The type of waste it receives is unknown and the current status of the landfill is unknown.
Closed landfills	0	9	The nearest historical landfill is located 80m east of the Site. The landfill received household waste, with its last input date in 1971.
Current registered waste transfer facilities	0	7	The nearest waste transfer facilities is located 120m north-east of the Site. Authorised waste included construction and demolition, household and commercial, incinerator residues, sawdust/bark and gulley emptyings. The licence for this is either cancelled or lapsed and the licence holder was London Waste Limited.
Current registered waste treatment/disposal facilities	0	6	The nearest waste treatment/disposal facilities is located 179m north-east of the Site. Authorised waste included vegetation and tyres were permitted by licence. The licence holder is London Waste Limited.
Closed waste transfer/ treatment facilities	0	0	N/A
Contemporary Trade Directory Entries	0	103	A large number of trade directory entries within 500m of the Site are inactive. The active ones include a scrap metal merchants, a damp and dry rot control company, tyre dealers and road haulage services.
Licensed radioactive substances	0	0	N/A
Enforcements, prohibitions or prosecutions	0	4	The nearest enforcement is located 176m south-west of the Site and was an Air Quality Control Enforcement Notice issued on the 25th January 1996.
Active Discharge Consents	0	7	The nearest active discharge consent is located 64m north-west of the Site. The operator is Thames Water Utilities Limited and the consent was for sewage discharges.

Database	On-site	0-500m	Description
Pollution incidents	0	17	The nearest incident was located 47m north of the Site where oil entered an unspecified watercourse. The incident was classified as Category 3 (Minor Incident).
Petrol station entries	0	0	N/A

3.3 History of the Site and the Surrounding Area

The history of development on the Site and immediate surrounding area was investigated with reference to historical Ordnance Survey (OS) mapping and aerial photographs. The findings are presented in subsequent sections below.

3.3.3 Historical Mapping

A summary of the development history of the Site and immediate surrounding area obtained from historic OS mapping and aerial photographs (Annex B) is detailed in the table below.

Table 4: Summary of Historical Mapping

Edition and Scale	On-site Activities	Off-site Activities (within ~ 250m)
1868-1879 (1:10,560)	The Site appears to be undeveloped and comprises fields.	The immediate surrounding area is undeveloped and comprises fields. There is a railway line running north-east to south-west approximately 250m west of the Site.
1881 (1:2,500)	No significant changes other than a footpath running through the northern half of the Site.	No significant change.
1896 to 1898 (1:2,500 and 1:10,560)	No significant change.	No significant change.
1914 (1:2,500)	The Site area is mapped as marshland.	The areas directly south and east of the Site are recorded as marsh. Directly to the west of the Site is a leather cloth works. Approximately 100m north-west of the Site are filter beds.

Edition and Scale	On-site Activities	Off-site Activities (within ~ 250m)
1936 to 1938 (1:2,500 and 1:10,560)	No significant change.	There are multiple tanks and filter beds directly north of the Site associated with a sewage pumping station. There is a wireless works approximately 250m south-west of the Site. There are further works south-west of the Site including a wireless works, zinc rolling works, a furniture factory and a clothing factory.
1952 (1:10,000)	No significant change.	No significant changes.
1960 to 1968 (1:1,250, 1:2,500 and 1:10,000)	The northern half of the Site appears to be occupied by some trees and there is a drain running along the southern boundary of the Site.	No significant changes.
1968 to 1976 (1:1,250 and 1:10,000)	The Site appears to be part of the sewage works that was initially directly north of the Site and is now occupied by part of a sludge lagoon.	The sewage works that was initially north of the Site has expanded across the Site and to the south and east of the Site.
1990 to 1993 (1:1,250 and 1:10,000) Partial mapping of 1992 to 1993 map showing only southern half of Site and surrounding area	No significant change.	There is a refuse disposal depot located approximately 250m north-west of the Site, otherwise there are no other significant changes.
1999 (1:10,000)	No significant change.	No significant change.

Edition and Scale	On-site Activities	Off-site Activities (within ~ 250m)
1999 (Aerial Photograph)	Aerial photographs shows the Site as vacant and no longer comprises part of a sludge lagoon.	Sludge lagoons associated with the sewage works located south and east of the Site no longer appear to be present and the land appears to be vacant.
2005 (Aerial Photograph)	There appears to be developed and the Site is recorded in its current layout comprising a large building with a smaller one located in the north-eastern corner.	Part of the sewage works directly north of the Site has now been replaced by a warehouse type building. There is also a warehouse directly east of the Site.
2009-2019 (Aerial Photograph)	No significant change.	No significant change.
2020 (1:10,000)	No significant change	No significant change.

3.3.2 Planning Department Records

The Enfield Council planning portal was searched to appraise the history of planning applications for the Site. The database shows two applications in the last 18 months:

- October 2018, Installation of plant and machinery involving external gantry, standby generators , switch room, substation, roof louvers gantry together with external alterations to include replacement cladding and installation of additional windows and doors. Ref. 18/04024/FUL.
- May 2019, Details submitted pursuant to planning application ref: 18/04024/FUL comprising material samples (5) in respect of installation of plant and machinery involving external gantry, standby generators , switch room, substation, roof louvers gantry together with external alterations to include replacement cladding and installation of additional windows and doors. Ref. 19/01624/CND.

3.3.3 Summary of the History of the Site and Surrounding Area

Based on the information obtained by EHS, the history of the Site and surrounding area can be summarised as follows:

- Earliest available mapping (1868-1879) shows that the Site is undeveloped and largely remains the same until 1914 where it becomes marshland.
- Development first appears on the Site in the late 1960s where it is occupied by part of a sludge lagoon associated with a sewage works.
- Aerial images show that the Site becomes vacant in 1999 and remains this way until 2005.
- Aerial images from 2005 shows the Site to be recorded in its current layout comprising a large building with a smaller one located in the north-eastern corner of the Site.

- Historically the surrounding areas largely comprised undeveloped land and subsequently various works including a sewage works, clothing factory and furniture factory. There is also a railway line approximately 250m west of the Site running in north-east to south-west direction.

3.4 Previous Environmental Assessments, Investigations or Remediation

The Client had provided EHS with a copy of a previous Due Diligence Preliminary Geo-Environmental Assessment that had been undertaken by Waterman Infrastructure & Environment Limited (Waterman) in February 2018. A summary of the report is presented below:

- A ground investigation was undertaken at the Site and comprised drilling of 8 window sample boreholes drilled to a maximum depth of 4.0m bgl, 4 hand excavated pits to a maximum depth of 1.2mbgl for current foundation inspection and 4 concrete slab cores to collect concrete samples for strength compressibility testing;
- Ground conditions encountered included Made Ground to a maximum depth of 1.70mbgl and comprised of a mixture of gravelly sand or clay with various anthropogenic fragments including concrete, brick, asphalt, clinker and wood. Underlying the Made Ground was Alluvium which comprised either gravelly Clay, gravelly Sand or Gravel. An organic / ammonia odour was encountered in one location adjacent to the north-western corner of the building;
- Environmental samples were collected and tested for a range of contaminants including asbestos screening, heavy metals, Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG), Polycyclic Aromatic Hydrocarbons (PAH) and benzene, toluene, ethylbenzene and xylenes (BTEX). No exceedances of contaminants were identified when screened against the generic assessment (GAC) for a commercial end use with the exception of three samples which had asbestos fibres identified at concentrations <0.1%;
- The report concluded that further testing should be undertaken at the Site to determine the distribution of asbestos fibres across the Site. Based on the Site being currently covered in hardstanding, it was determined that no direct action is recommended.

4 Site Assessment

4.1 Methodology

EHS was provided a virtual tour of the Site on Thursday 30th April 2020. Daniel Wright (Ark Construction Manager) was present during the walkover.

During the walkover every effort was made to access all areas of the Site. The drainage infrastructure and roofs of buildings could not be fully accessed and inspected.

A Site layout plan is presented as Figure 2 in Annex A and photographs of the site reconnaissance are presented in Annex C.

4.2 Site Overview

The Site is located off Ardra Road, within an area of mixed light industrial and commercial land uses. The closest residential land use is located approximately 310m to the northwest beyond third party light industrial / commercial properties. Drawing 1 Land uses in the immediate vicinity include the following features:

- North – The Site is bound to the north by Ardra Road and beyond that is a Lidl regional distribution centre.
- East – The Site is bound to the east by a Biffa materials recycling facility.
- South – The Site is bound to the south by the London Energy EcoPark, which will be the main supplier of electricity to the data centre facility, via a private wire power purchase agreement.
- West – The Site is bound to the west by Pymmes Brook and a skip hire and recycling facility in Eley Industrial Estate beyond that.

The Site is currently a construction site converting an existing warehouse that was used a distribution centre for Heal's furniture into a secure, highly resilient data centre facility.

The data centre facility, when complete, will comprise 7nr data halls capable of providing up to 16MW of secure, resilient IT cabinet space. LV electrical switchrooms are provided within the building, whilst the cooling system, which uses energy efficient Indirect Adiabatic Cooling units are supported on gantries on the eastern and western elevations of the original warehouse. Free cooling chillers to cool the internal switchrooms are currently located to the south of the warehouse.

The facility has two independent resilient energy supplies:

- The primary supply from the Energy from Waste to the south of the site, via a primary 11kV switchroom in the south east corner of the site.
- A secondary supply from the UKPN distribution system, via 33/11kV substation on the northern edge of the site.
- An emergency back-up diesel generator array, which when fully deployed will comprise of 15Nr 2.5MVA standby generators sets connected to the facility via the generator switchroom. The emergency generator back-up system is located along the eastern edge of the site.

At the time of the site inspection 52 No. IDACs were installed along the eastern and western sides of the facilities, capable of supporting 100% of the full data centre load. The ground floor IDAC were fully installed and the first floor units were in place awaiting their final connection ductwork and power connections. The switchrooms on the ground floor were fitted out and fitting out of the first floor switchrooms was in progress.

12 Nr standby generators, along with their standby fuel tanks were on site, in the process of being integrated into the overall electrical substation. The primary London Energy switchroom and secondary UKPN subs station were under construction.

The external surfaces of the Site and internal roadways are predominantly concrete hardstanding which is in the process of being repaired and reinstated to its original function. 84 No. parking spaces will be provided in the parking area to the north of the site, whilst the eastern hardstanding provides access for the equipment deliveries.

The drainage systems for the hardstanding areas have all been installed as per the drainage plans and resurfacing works are in progress.

The Site is serviced by a manned 24hour security and is fully enclosed by a perimeter fence. The roadways and perimeter are covered by CCTV cameras.

4.3 Above and Underground Ground Storage Tanks (AST/UST)

Each of the (up to 15) standby generators in place has its own dedicated above ground 'belly' fuel tank, which each have a capacity to hold up to 37,908 litres. Each tank is fitted with its own fill point and a detection system to for overfill and level warning.

4.4 Hazardous substances

At the time of the site visit during the construction phase, no hazardous materials were observed as being in use or in storage. The Principal Contractor for the construction works have a COSHH register available with a full history of materials used on the build and the applicable guidance on the required PPE and application of each material. When the building goes operational, the operations team will have a similar register and dedicated storage area for such applicable substances.

4.5 Waste Management

Currently for the construction waste, there are a number of different 40 yard skips placed on the hard standing of the service yard. Once the building becomes operational, it is thought that a similar operation will be in place for the both the general day to day waste of the building and also the large number of recyclable waste such as cardboard that comes out of a data centre.

4.6 Electrical Substations

As described in above, the facility will have two dedicated incoming HV power supplies to it. Both the primary substation from London Energy at southern end of the site and the backup from UKPN at the northern end of the site are both in place but remained under construction at the time of this report.

4.7 Soakaways

The service yard, car park and perimeters of the building are served by Aco drainage systems to collect the surface water run-off. The service yard that will host any generator refuelling, has two newly installed alarmed fuel interceptors. The overall surface water collection for the site goes south and joins a large culvert at the southern end of the site, which carries surface water from the neighbouring Biffa site. The culvert then outfalls at the neighbouring Pymmes Brook to the east of the site. This strategy appears to be the same as the original design at the time of the construction of the building 2005.

A surface and foul drainage plan for the Site is presented as Figure 3 in Annex A.

4.8 Asbestos Containing Materials (ACMs)

An asbestos survey was not conducted as part of this scope of works. The original warehouse building was fully constructed in 2005 and is deemed that ACMs are not present in materials of the building.

4.9 Evidence of Spills, Staining or Corrosion

There was no evidence of spills, staining or corrosion to the external areas of the Site. Dedicated spill kits were in place around the construction site.

4.10 Non-Natural Mounds or Depressions, Excavations and Fill

At the southern end of the site there is a large earth bunded area that separates the site from the neighbouring London Energy Eco Park. There is a separate perimeter fence on both the Ark and the London Energy side of the bund. It is believed that this is a man-made bund that has been in place since the building was constructed in 2005.

4.11 Invasive Species

This assessment did not include an invasive species survey. No invasive plant species were observed to be growing at the Site during the walkover.

4.12 Summary of Site Walkover Observations

EHS have noted the following potential sources of contamination during the walkover:

- The Site currently comprises the construction of a data centre facility.
- 12 Nr fuel tanks for associated standby generators are in place.
- There appear to be no evidence of flooding or ponding on the external areas of the Site.
- There were two electrical substation located at each end of the service yard, however these were still under construction.
- There was no evidence of spills, staining or corrosion observed at the Site.

5 Preliminary Environmental Risk Assessment

5.1 Conceptual Site Model

The methodology of this risk assessment uses the source-pathway-receptor pollutant linkage to provide a qualitative appraisal of environmental risks and potential liabilities associated with soil and groundwater contamination at the Site.

The conceptual site model (CSM) is prepared based on the current continued food manufacturing use.

Table 5: Conceptual Site Model: Potential Contaminant Sources

Source	Pathway	Receptor	Risk
On-Site Sources			
Historical use of Site as sludge lagoon for sewage works. Potential for Made Ground at the Site from previous phases of development. Above ground storage tanks. A previous investigation undertaken by Waterman identified concentrations of heavy metals and hydrocarbons below screening values for a commercial end use. Asbestos fibres were encountered in a few Made Ground samples.	Dermal contact, ingestion and inhalation pathways	Current site users	**Low** The Site will be covered in concrete hard standing and would mitigate against contact with potential contaminants. AST on Site are fitted with own fill point and a detection system to for overfill and level warning.
		Neighbouring residents	**Low to Moderate** Presence of superficial deposits (Alluvium) which is classified a Secondary A Aquifer may allow for some migration of potential contamination off-site.
	Leaching of contaminants and vertical migration into groundwater	Controlled waters	**Low to Moderate** Presence of sensitive groundwater bodies underlying the Site (Secondary A Aquifer) may be sensitive to contaminant release at

Source	Pathway	Receptor	Risk
			surface or via contaminated infilled materials, if present. The presence of concrete hard standing will mitigate potential pathways.
Off-Site Sources			
Surrounding historical and current industrial / commercial land uses including former sewage works, various works including clothing factory, furniture factory. Potential contaminants such as heavy metals, hydrocarbons, ammonia and asbestos.	Dermal contact, ingestion and inhalation pathways	Current site users	**Low** The majority of the Site is covered in concrete hard standing which would mitigate against contact from any potential off-site contaminants.
	Migration via groundwater	Controlled waters	**Low to Moderate** Presence of sensitive groundwater bodies underlying the Site (Secondary A Aquifer) may be sensitive to contaminant release at surface or via contaminated infilled materials, if present. The presence of concrete hard standing will mitigate potential pathways.
	Leaching of contaminants and infiltration into groundwater	Controlled waters	**Low to Moderate** Presence of sensitive groundwater bodies underlying the Site (Secondary A Aquifer) may be sensitive to

Source	Pathway	Receptor	Risk
			contaminant release at surface or via contaminated infilled materials, if present. The presence of concrete hard standing will mitigate potential pathways.

5.2 Other Property Related Environmental Issues

Table 6: Summary of Other Potential Environmental Issues

Issue	Detail
Coal Mining	Coal Authority records indicate that the Site is not located in an area that is probably not affected by coal mining.
Radon	BGS records indicate that the Site is in a lower probability radon area where less than 1% of homes are estimated to be at or above the Action Level. On this basis, the BGS states that "no radon protective measures are necessary in the construction of new dwellings or extensions".
Flood Risk	The Site is located within a Flood Zone 1 (low probability). The database indicates that the Site is not in an area that has potential for groundwater flooding to occur at surface.
Asbestos Containing Materials	An asbestos survey was outside of the scope of this assessment. However based on the age of the building circa 2005, it is unlikely that asbestos is present in the building. Asbestos fibres have been identified in the soils from the Waterman investigation, likely from previous phases of development.

6 Conclusions

6.1 Findings

Earliest available mapping (1868-1879) shows that the Site is undeveloped and comprised fields. By 1914, the map shows the Site to be part of marshland and by the late 1960s, the Site is occupied by part of a sludge lagoon associated with a sewage works until approximately 1999. The Site remains vacant until approximately 2005 when the Site is developed into its current layout.

Historically, the surrounding areas largely comprised undeveloped land, with development occurring in subsequent years comprising various works, including a sewage works, clothing factory and furniture factory. There is also a railway line running in a north-east to south-west direction approximately 250m west of the Site.

The Site will comprise a data centre, with associated car parking and infrastructure.

EHS consider the Site to be located in an area of low to moderate environmental sensitivity. The published geology indicates that the Site is underlain by superficial deposits comprising Alluvium which is classified as a Secondary A Aquifer which in turn is underlain by the London Clay Formation which is classified as an Unproductive Strata. The Site is located within an EA designated SPZ, there are groundwater and surface water abstractions within 500m of the Site and the Site is located within a NVZ.

6.2 Summary of Environmental Risk

EHS consider the Site to be generally low to moderate risk with respect to contaminated land liability due to the Site's previous uses including as a sludge lagoon and surrounding areas comprising commercial and industrial use historically and therefore a moderate potential for soil and groundwater contamination.

The previous investigation undertaken by Waterman in 2018 did not identify concentrations of chemical contamination exceeding the relevant screening values for a commercial end use. However, asbestos fibres were identified in three Made Ground samples tested.

It is considered that the risks from asbestos and other potential contaminants will be mitigated by the presence of hard standing across the Site, which will act as a barrier between any residual contamination and site users and mitigate any potential pathways to controlled waters.

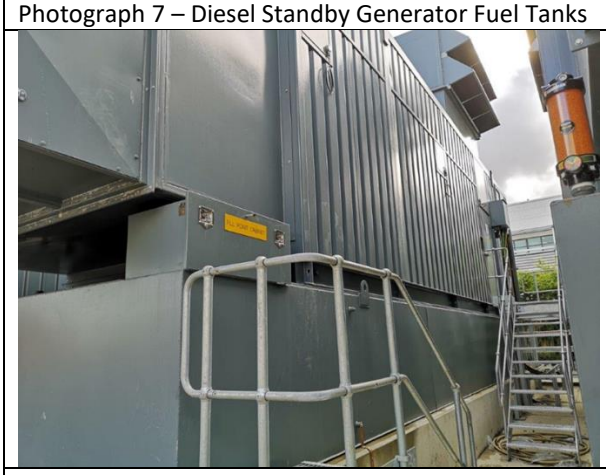
Based on the findings, it is considered unlikely that the Site's future permitted use is unlikely to pose a risk to the baseline condition of the Site.

Annex A: Figures

Annex B: Envirocheck Report

Annex C: Site Photographs

Photograph 1–Standby Generators	Photograph 2 First Floor Excool Units
Photograph 3 – Ground Floor Excool Units	**Photograph 4 – Adiabatic Chillers for EC Cooling**
Photograph 5 – Chiller Pumps and Vessels	**Photograph 6 – HV Switchgear**

Photograph 7 – Diesel Standby Generator Fuel Tanks	Photograph 8 – London Energy Substation
	
Photograph 9 – UKPN Substation	