Environmental Permit Variation Application

Site Condition and Baseline Report

Telehouse International Corporation of Europe Limited

Coriander Ave, London E14 2AA

Prepared by:

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Appendix A Cundall Outline Planning Application, Land Quality Assessment report, October 2018.

Appendix B Cundall Phase II Geotechnical and Geoenvironmental Assessment report, 24 October 2024

Appendix C MSDS's

1.0 Introduction

SLR Consulting Limited (SLR) has been commissioned by Telehouse International Corporation of Europe Ltd. (TIE) to prepare a Site Condition and Baseline Report in support of an environmental permit (EP) variation application for their proposed Telehouse West2 (TW2) Data Centre, located at Coriander Ave, London E14 2AA (hereafter referred to as 'the Site').

This report combines both the requirements of a Site Condition Report and Baseline Report into a single document.

The following sections of this report introduce the Site, the assessment works undertaken and reporting of the baseline soil and groundwater conditions at the Site.

1.1 Scope of Work and Study Limitations

This Site Condition Report (SCR) aims to record and describe the condition of the land prior to the commencement of any operations within the proposed EP installation boundary. It has been prepared in accordance with the Environment Agency's (EA) Site Condition Report H5 guidance with regards to the requirements of a baseline report to meet the requirements of Article 22 (2) of Industrial Emissions Directive (IED).

This SCR will provide a point of reference and baseline environmental data so that when the EP is surrendered it can be demonstrated that there has been no deterioration in the condition of the land as a result of the Installation operations and ensure that the condition of the land is in a 'satisfactory state'.

Additionally, where an environmental permitted activity produces, uses or releases Relevant Hazardous Substances (RHS) (as detailed in Article 3(128) of the IED), a risk assessment is required in accordance with Article 22(2). This SCR also includes an assessment of potential risk from RHS.

The location of the site is illustrated in Drawing 001. The site layout; site boundary and proposed EP boundary and emission points are presented on Drawing 002.

Sections 1 to 3 of the EA's SCR template[1] (have been completed within this document and comprise the following aspects:

- Site details (Chapter 2);
- Condition of the land at permit issue(Chapter 2);
- Geology (Chapter 2);
- Hydrology (Chapter 2);
- Hydrogeology (Chapter 2);
- Pollution history (Chapter 2);
- Evidence of historic contamination (Chapter 2); and
- Permitted activities (Chapter 3).

Sections 4 to 7 of the SCR template will be maintained during the life of the EP and Sections 8 to 10 will be completed and submitted in support of the application to surrender the EP.

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[1] EA Environmental Permitting Site Condition Report Guidance https://www.gov.uk/gov7ernment/publications/environmental-permitting-h5-site-condition-report accessed January 2026.

1.2 Sources of Information

SLR has collected and reviewed various reports and drawings to characterise the Site and its surrounds. These sources are as follows:

- Multi Agency Geographical Information for the Countryside[2] (MAGIC) map
- Landmark Envirocheck Report
- British Geological Survey[3]
- EA. Flood map for planning[4]
- ECHA: European Chemicals Agency Substance Information[5]
- Water Framework Directive Environmental Agency Confirmed Hazardous Substances List[6]

The following reports were also reviewed and are referred to, and should be read in conjunction with this version of this SCR:

- Appendix A: Cundall Outline Planning Application, Land Quality Assessment report, October 2018; and

Appendix B: Cundall Phase II Geotechnical and Geoenvironmental Assessment report, 24 October 2024.Information from the above sources is included within the following sections of this report.

2.0 Site Condition Report

The aim of this SCR is to describe and record the condition of the land and groundwater at the site at the point of applying for an environmental permit. This SCR will enable TIE to demonstrate that they have protected the land and groundwater by updating the SCR during the lifetime of the permit as appropriate.

Sections 1 to 3 of this SCR have been updated and completed for TW2 using an Envirocheck Report as presented in '*Outline Planning Application, Land Quality Assessment*', (October 2018) (Appendix A).

Throughout the lifetime of the site, records will need to be maintained for the purposes of completing Sections 4-7 of this SCR.

Upon cessation of the activities at the site, Sections 8-10 are to be completed to support an application to surrender the site's environmental permit.

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[2] Multi-Agency Geographical Information for the Countryside Map, available at www.magic.defra.gov.uk, accessed in April 2026.

[3] British Geological Survey, available at http://www.bgs.ac.uk, accessed April 2026.

[4] Flood map for planning, available at https://flood-map-for-planning.service.gov.uk/, accessed April 2026.

[5] ECHA: European Chemicals Agency Substance Information. Accessed at: Homepage - ECHA (europa.eu). Accessed April 2026.

[6] Water Framework Directive Environmental Agency Confirmed Hazardous Substances List. Accessed at '2018 01 31 Confirmed hazardous substances list_0.pdf (wfduk.org)'.

2.1 Site Details

Name of the applicant	Telehouse International Corporation of Europe Limited
Activity address	Coriander Ave, London E14 2AA
National grid reference	NGR TQ 38770 81090
Document references for site plans (including location and boundaries)	Drawing 001 – Site Location, July 2025 Drawing 002 – Site Layout and Emission Points, January 2026 Drawing 003 – Sources, Pathways and Receptors, July 2025 Drawing 004 – Cultural and Natural Heritage, July 2025

2.2 Condition of the Land at Permit Issue

2.2.1 Telehouse North

Environmental setting including: • geology • hydrogeology • surface waters	**Geology** British Geological Survey (BGS) data[7] indicates the following general geological sequence beneath the site: • Fluvial sedimentary deposits of alluvium (clay, silt, sand, peat) that is normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel. A stronger, desiccated surface zone may be present; and • The bedrock beneath the site is a sedimentary combination of clay, silt and sand of the London Clay Formation. **Hydrogeology** The EA's What's In Your Backyard (WIYBY) website shows: The superficial geology beneath the site is classified as Secondary (undifferentiated) aquifer, such that it has not been possible to attribute that the bedrock comprises of either permeable layers capable of supporting water supplies at a local level or predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type. The bedrock is classified as unproductive strata with low permeability that has negligible significance for water supply or river base flows (i.e. non-aquifer). **Source Protection Zone** The site is not located within, or near, any Groundwater Source Protection Zone. **Groundwater Vulnerability**

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[7] http://mapapps.bgs.ac.uk/geologyofbritain/home.html accessed July 2017

	The site is located within an area indicated as a "minor aquifer" with high vulnerability, such that the superficial geology is able to easily transmit pollution to groundwater, however the geology can provide only modest amounts of water due to the nature of the rock or the aquifer's structure. It is noted that the EA is updating the Groundwater Vulnerability mapping to reflect improvements in data mapping and understanding of the factors affecting vulnerability. The aforementioned superficial geology is classified as a Secondary (undifferentiated) aquifer that has previously been designated as both minor and non-aquifer in different locations throughout the area of Groundwater Vulnerability designated as "minor aquifer". **Hydrology** The River Lea, a tributary to the River Thames, is located approximately 130m east of the site (at its nearest point). An artificial pond is located circa 50m to the south west of the site, with further similarly artificial water features approximately 130m to the west of the site. **Flooding** The Environment Agency flood map for planning[8] identifies that the site is located within a Flood Zone 3. These are areas of land which the Environment Agency defines as '*land having a 1 in 100 or greater annual probability of river flooding or land having a 1 in 200 or greater annual probability of sea flooding*.' However, more detailed analysis of site location[9] shows that the flood risk at the site is low. The site does not benefit from protection by existing flood defences that are offered to neighbouring land. **2026 TW2 Expansion** This SCR has been reviewed in 2026 for the proposed TW2 site expansion. All of the above geology, hydrogeology and surface water details are also true for the land beneath where the proposed West2 building is situated.
Pollution history including: - pollution incidents that may have affected land - historical land-uses and associated contaminants - any visual/olfactory evidence of existing contamination - evidence of damage to pollution prevention measures	**Pollution History** The Environment Agency's What's In Your Backyard (WIYBY) application has been used to identify any pollution incidents recorded on-site and within the immediate surrounding area. - On site: There are no recorded pollution incidents within the site boundary that may have affected the land beneath the site. - Off site: Within 1km of the site there have been no significant/major recorded pollution incidents that could affect the land beneath the site. A review of the '*Outline Planning Application, Land Quality Assessment*', (*October* 2018) (Appendix A) has been undertaken in 2026 for the purposes of updating this SCR for

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[8] https://flood-map-for-planning.service.gov.uk/summary/538786/181095

[9] https://flood-warning-information.service.gov.uk/long-term-flood-risk/map?easting=538786&northing=181095

the TW2 expansion. The report indicates there has been no recorded pollution incidents within the proposed TW2 boundary, nor are there any recorded pollution incidents within 250m of the proposed Site boundary. The report identifies the closest incident is recorded 373m east associated with a Petrol Filling Station and was recorded as a Category 3 ‘Minor Incident’ associated with ‘Oils-unknown’.

Historical Land-Uses

Section 2.4 (Site History) of the Project Indigo Preliminary Land Quality Risk Assessment (SLR, May 2013) (submitted with the original EP application for this data centre in 2018), summarises the history/former uses of the site prior to the construction and operation of the data centre:

- The general area has historically comprised of industrial uses associated with shipping (Eastern Docks) and road and rail warehousing;
- The site formed the eastern end of the East Dock between approximately 1803 and the mid 1980’s;
- The 28-feet deep (8.5m) East Dock was partly filled from the west after World War II, with infilling completed in 1987-8 (the nature of material used to infill the former dock is unknown);
- Construction of the 350m long East India Dock Tunnel commenced in 1989 and was completed in May 1993. The top and base elevation of the tunnel is not known although possibly extended down to the London Clay;
- The North building at the site was constructed in 1989 and the site was developed in successive stages since this date.

The Baseline Site Investigation Report 2018 (SLR ref. 425.04438.00005/SI) reveals the following additional details regarding the Site’s history:

- The dock ceased trading in 1967;
- The Site was developed in four phases. The north was developed in the 1990s, the east and supporting areas were developed in the early 2000s, the west was developed in the late 2000s and the second northern development occurred in 2014.

2026 TW2 Expansion

As the proposed TW2 expansion is adjacent to the existing TN land, the surrounding land use / historical summary listed above is considered relevant for the proposed new land for TW2. Historic land use specific for the land beneath the proposed TW2 building is as follows:

- The land is occupied by North Quary of the East India Dock from 1869-1899 and comprises infrastructure including some warehouses and mooring posts.
- 1916-1946 the warehouses have been replaced with a single Transit Shed with a railway immediately beyond.
- By 1990 the Transit shed on the TW2 proposed land is no longer recorded.

	• From 1991-1999 the site is recorded as being undeveloped, • From 2006-2018 the land is recorded as being occupied by a hotel and associated car park.
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	The Cundall Indigo Geotechnical and Geoenvironmental Assessment (Cundall, March 2014) (submitted with the original EP application for this data centre in 2018) which covers the area currently occupied by North 2 Building, states that: “No significantly elevated hydrocarbon or heavy metals concentrations have been identified within the shallow depth soil materials at the site with respect human health in the context of a commercial end use.” The report continues, “Slightly elevated leachable concentrations of TPH and dissolved phase TPH within groundwater samples have been identified at the site. However, these elevated concentrations are not considered to represent a significant risk to controlled waters due to the presence of an aquiclude (London Clay) above the principal aquifer, and the anticipated significant reduction in infiltration due to the proposed hard-surfacing and construction proposed for the site.” The Conceptual Site Model in the above report notes that there is a negligible likelihood of a pollutant linkage between leachable mobile contamination (e.g. TPH) and controlled waters (including the River Lea and the River Thames). However, it is noted that new pathways could be created by the creation of newly constructed piled foundations. The Site Investigation Report for Telehouse West (Subadra, July 2008) (submitted with the original EP application for the data centre in 2018) was undertaken, in part, to characterise potentially contaminative substances in the shallow soil and groundwater in the area of the site occupied by West building. The report, which summarises the findings of the site investigation, states that observed contamination within the soil was limited to clay in two boreholes which was observed to contain “variable quantities of brick, clinker/slag, wood, metal and/or plastic” which was noted as being “generally dark grey or black wet, with an organic odour” and also that olfactory and visual evidence in one borehole that was interpreted to be hydrocarbons. During the initial purging of groundwater from three boreholes, the groundwater from one borehole was initially noted to have an organic odour and one had an “eggy” odour; no such odours of the purged groundwater were observed during the subsequent monitoring round. The Site Investigation undertaken by SLR in May 2018 (submitted with the original EP application for this data centre in 2018) provided a baseline report for the Site prior to development, inclusive of the fuel storage and generator operations that were proposed for the site. Previous investigations had been limited to the development of new buildings only. Intrusive ground investigation was conducted between 19th April 2018 and 24th April 2018. Groundwater and gas monitoring was then carried out on 30th April 2018, with follow

up gas monitoring rounds conducted on 8th May 2018 and 16th May 2018. Six boreholes were investigated.

The Site Investigation revealed that there were no significantly elevated concentrations of any of the determinands in soil samples, with the exception of asbestos which was found in boreholes BH1, BH2 and BH5. In the laboratory the levels of asbestos in samples from these boreholes were found to be below the limit of detection.

The groundwater monitoring revealed that BH2 and BH6 exhibited exceedances of arsenic and petroleum hydrocarbons. The average concentrations of petroleum hydrocarbons, arsenic, and naphthalene were also in exceedance of Water Quality Standards.

Methane and carbon dioxide concentrations were recorded at low levels during ground gas monitoring.

TW2

The Cundall Phase II Geotechnical and Geoenvironmental Assessment report (October 2024) covers the area of the proposed TW2 building. The report states:

"*a hydrocarbon odour and sheen were noted within the infilled dock made ground material in BH03 between 10.90 and 11.10m bgl and a strong organic and hydrocarbon odour was recorded within WS05 between 1.10 and 2.0m bgl*".

Samples of made ground taken from WS05 at a depth of 2.5m bgl within the area of infilled dock in the south of the Site recorded the following:

- exceedances of PAHs, namely, naphthalene, phenanthrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene and benzo(g,h,i)perylene.
- The made ground at this location is described as dark brown gravelly, slightly clayey sand and underlies a layer of made ground described as having a strong hydrocarbon odour between 1.10 and 2.0m bgl.

Two additional samples of made ground taken from within the infilled dock in the south of the Site (WS04 at 0.2m bgl and WS05 at 1.5m bgl) also recorded exceedances of dibenzo(a,h)anthracene. The material is described as dark brown gravelly, slightly clayey sand in WS04 and as dark grey slightly sandy, slightly gravelly clay within WS05. The samples from WS05 consisted of made ground described as having a strong hydrocarbon odour.

Full analytical results from the site investigation can be found within this report, which is presented in Appendix B.

Remediation of identified contamination has not been undertaken at the Site. As such, the hydrocarbon and PAH concentrations identified in soil and groundwater samples from the Site are considered to represent baseline reference data for the TW2 site.

Baseline soil and groundwater reference data	• Section 10 of the Cundall Indigo Geotechnical and Geoenvironmental Assessment (Cundalls, March 2014) • SLR Baseline Site Investigation Report 2018 (SLR ref. 425.04438.00005 SI) (see 'Supporting Information' section below) • Cundall Phase II Geotechnical and Geoenvironmental Assessment report (October 2024)
Supporting information	• Project Indigo Preliminary Land Quality Risk Assessment (SLR, May 2013) • Cundall Indigo Geotechnical and Geoenvironmental Assessment (Cundall, March 2014) • Site Investigation Report Telehouse West, Coriander Avenue, London, E14 (Subadra, July 2008) • Environmental Risk Assessment (SLR Ref: 410.06577.00001 ERA) • Baseline Site Investigation Report 2018 (SLR ref. 425.04438.00005 SI) These supporting documents were submitted with the SCR prepared for the original EP application for this data centre in 2018 (SLR ref. '04062018 410.04438.00003 SCR'). These documents have not been included with this SCR. Documents included with this EP variation application for TW2 include: • Cundall Outline Planning Application, Land Quality Assessment report (October 2018) • Environmental Risk Assessment (SLR Ref: 410.066261.00001 ERA)

2.2.2 Telehouse South

Environmental setting including: • geology • hydrogeology • surface waters	A SCR was completed in May 2018 by Thomson Reuters Group Ltd for the original EP application (ref: EPR/CP3339DZ/A001) for the Docklands Technical Centre 'Docklands South'. More recently, a Tier 1 Contamination Risk Assessment (Tier 1 Contamination RA) has been completed by Sweco in May 2021 (included as Appendix 06 of this SCR). **Geology** The SCR revealed that the underlying geology of the site is London clay overlain by Langley Silt Member. The Tier 1 Contamination RA noted that: '*Previous ground investigation on site has proven deep made ground (including the presence of buried relict dock structures, overlying the natural soils.'* **Hydrogeology** The SCR revealed that the site is located on a minor aquifer classed as high vulnerability. The bedrock aquifer designation is "unproductive strata." Permeable layers at the site are capable of supporting water supplies at a local rather than strategic scale. **Source Protection Zone**

	The SCR revealed that the site is not located within, or near, any Groundwater Source Protection Zone. **Groundwater Vulnerability** The SCR revealed that the superficial aquifer designation is "secondary undifferentiated". The superficial aquifer has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type (as illustrated on the Site Sensitivity Context Map included as Appendix 01). **Hydrology** A search of the Multi Agency Geographical Information for the Countryside (MAGIC)[10] revealed: • The River Thames immediately adjacent to the site, along the southern boundary. • The Bow Creek tidal estuary of the River Lea, which is a tributary to the River Thames, is located approximately 125m east of the site (at its nearest point). • The River Lea, a tributary to the River Thames, is located approximately 130m east of the site (at its nearest point). • East India Dock Basin, an artificially constructed water basin is located circa 200m to the south east, which is a wetland habitat with a number of historic Grade II Listed features. **Flooding** The site is in close proximity to the River Thames which is a Marine Nature Reserve. In addition, the Environment Agency flood map for planning[11] identifies that the site is located within a Flood Zone 3. These are areas of land which the Environment Agency defines as '*land having a 1 in 100 or greater annual probability of river flooding or land having a 1 in 200 or greater annual probability of sea flooding*.' However, more detailed analysis of site location[12] shows that the flood risk at the site with regard to surface water is low, which means that this area has a chance of flooding of between 0.1% and 1% each year, whilst flood risk with regard to rivers and the sea is very low which means that this area has a chance of flooding of less than 1% each year.
Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination	**Pollution History** The SCR revealed there has been one pollution incident to controlled waters recorded within 1,000m of the site, however no other sensitive land uses have been identified (as illustrated on Site Sensitivity Map A included as Appendix 02). **Historical Land-uses** The history/former uses of the site prior to the construction and operation of the data centre historically comprised of

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[10] Multi Agency Geographical Information for the Countryside, www.magic.gov.uk, accessed February 2023.

[11] https://flood-map-for-planning.service.gov.uk Accessed February 2023

[12] https://flood-warning-information.service.gov.uk/long-term-flood-risk/map? Accessed February 2023

• evidence of damage to pollution prevention measures	industrial uses associated with shipping (Eastern Docks) and road and rail warehousing to the north and east. Historic mapping shows that in 1873 to 1882, most of the site was located on a Ship Building Yard with road and rail warehousing to the north and east (historic land uses are shown on the Historic Land Use map included as Appendix 03). According to the SCR submitted with the original EP application in 2018, '*the site is located on an area of land that was once part of East India Docks. The docks were closed in 1967 and gradually infilled until the mid-1980s. The docks are now classified as a historic landfill site'.* Historic maps show that in 1950 to 1955 the northern part of the site was situated on land annotated as a 'Goods and Coal Yard'. This northern part became a 'Goods Depot' by 1962 and by 1974 was no longer present. At this time historic maps show that the west of the site was a 'Dock'; the eastern part of the site was also labelled as a 'Dock' by 1981. According to the 2018 SCR *'The site and surrounding area were part of the Blackwall Ship Building Yard, which was used for ship building and repairs up until around 1987. The land associated with this may therefore have historic contamination.'* Construction of the 350m long East India Dock Tunnel, located to the northeast, commenced in 1989 and was completed in May 1993. The top and base elevation of the tunnel is not known although possibly extends down to the London Clay. In addition, the Tier 1 Contamination RA noted the following for potential contamination sources: *'The following potential sources of contamination have therefore been identified from the desk study and site reconnaissance:* • *Made ground and infilled land from previous development* • *On site historical industrial activities (including dock yard, ship building, rail sidings and fuel storage)* • *Organic superficial deposits* • *Off site historical industrial activities including a fuel depot and tanks, coal yard and scrap yard* • *Off site infilled land'*
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	Historic site investigation information is not available for the site. However, the SCR submitted with the original EP application in 2018 noted that: 'The site and surrounding area were part of the Blackwall Ship Building Yard, which was used for ship building and repairs up until around 1987. The land associated with this may therefore have historic contamination.' The soil geochemistry maps for the area (included as Appendix 04) indicate the following heavy metal concentrations for the corresponding land use i.e. the Site: • Arsenic concentrations 15 - 25 mg/kg • Cadmium concentrations < 1.8 mg/kg • Chromium concentrations 40–60 mg/kg

	• Lead concentrations 150 – 600 mg/kg • Nickel concentrations 15-30 mg/kg.
Baseline soil and groundwater reference data	None currently available. However, the Tier 1 Contamination RA that was carried out by Sweco in May 2021 in order to support the planning submission for the proposed changes to TS by Telehouse, recommended the following: • ‘Carry out ground investigation and Tier 2 generic quantitative risk assessment in line with the requirements of LCRM and to meet planning conditions. A scope of work is described in the report.’ Therefore, the SCR will be updated with relevant baseline environmental data as it becomes available.
Supporting information	• Supporting information, as included in the original SCR completed in May 2018 by Thomson Reuters Group Ltd for the EP application (ref: EPR/CP3339DZ/A001) , included: • Site Sensitivity Context Map (Appendix 01) • Site Sensitivity Map A (Appendix 02) • Historic Land Use Map (Appendix 03) • Geo Chemistry Map (Appendix 04) • Geology Map (Appendix 05) • A review of the EA “What’s in your backyard” maps and guidance tool including review of the following interactive maps: o Ground water source protection zones map o Nitrate Vulnerable Zones map o Aquifers map o Groundwater vulnerability map. In addition, supporting information from a Tier 1 Contamination Risk Assessment carried out by Sweco in May 2021 (Appendix 06).

2.3 Permitted activities

2.3.1 Telehouse North

Permitted activities	Part A(1), Section 1.1, Part 2, Schedule 1: “Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts” Directly-associated activities (DAA): • Storage and handling of raw materials, including fuels (fuel oil storage) • Surface water drainage
Non-permitted activities undertaken	None

Document references for: - Plan showing activity layout; and - Environmental risk assessment.	Drawing 002 – Site Layout and Emission Points, January 2026. Drainage Plans (submitted with EP application in 2019): - MW.SLD.F00312.C3 (Drainage North Building) - MW.SLD.F00312.C3.1 (Drainage East & West Buildings) - MW.SLD.F00312.C3.2 (Drainage North 2 Building) Environmental Risk Assessment (reference 410.064698.00001 ERA) Environmental Risk Assessment (reference 410.066216.00001 ERA)

2.3.2 Telehouse South

Permitted activities	Part A(1), Section 1.1, Part 2, Schedule 1: “Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts” “Medium combustion plant (MCP1-3) (3 natural gas boilers)” Directly-associated activities (DAA): - Gas oil storage - Surface water drainage
Non-permitted activities undertaken	None
Document references for: - Plan showing activity layout; and - Environmental risk assessment.	Drawing 002 – Site Layout and Emission Points Environmental Risk Assessment (reference 410.064698.00001 ERA)

2.4 Changes to the Activity

2.4.1 Telehouse North

Have there been any changes to the activity boundary?	Yes – this variation application is for the addition of TW2 and includes for an extension to the permit boundary for Telehouse North to include the building and land proposed for TW2.
Have there been any changes to the permitted activities?	**TN** Since issue of the original EP, five ‘future SBGs’, which are included on the original TN EP, have been installed. These SBGs are different models and sizes to those stated in the original EP application. In accordance with the TN EP pre-operational condition, formal notification was provided to the EA of the

	installation and operation of these SBGs. Telehouse have installed the following SBGs: 3 SBGs (MTU 20V4000G23) in West Building in September 2018, each being 5.37MWth (total thermal rated input 16.11MWth); and 2 SBGs (MTU 20V4000G34F(EO)) in North (N2) Building in December 2021, each being 6.805MWth (total thermal rated input 13.61MWth). 2 SBGs (MTU 20V4000 G34F) in N2 Building April 2024, each being 6.805MWth (total rated thermal input 13.61MWth) Based on the existing and additional SBGs as summarised above, the aggregated total installed combustion capacity at TN is now 125.61MWth. Also, since the issue of the original EP, a new oil interceptor has been installed on the surface water runoff around the North Building, in accordance with Improvement Condition (IC3). Also, the fuel transfer system in the East building has been upgraded and replaced as required by the EA. Refer to Appendix 07 for the Fuel Project Design Summary. The SGB's at TN began using HVO as a fuel in 2026. **2026 TW2** An application has been made in 2026 to vary the environmental permit to include the TW2 data centre to the TN campus. TW2 will introduce 13 new SBGs (Cummins C3750 D5e), each being 7.506 MWth (97.6 MWth in total). These TW2 SBGs will be installed in phases; Phase 1 will involve the installation of 6 SBGs. Based on the existing and additional SBGs as summarised above, the aggregated total installed combustion capacity at TN will be 242.6 MWth. The SGB's at TW2 will each be served by a fuel day tank (13 tanks in total, each with a 3,750L capacity) (designed to provide 4 hours' worth of fuel supply for the SBG the tank serves), and an associated SCR abatement dosing system which will be located inside the ground floor generator rooms internal to the TW2 data centre building. TW2 will also benefit from 4 bulk fuel storage tanks (each with a capacity of 54,000L). These tanks will be located on the ground floor of the TW2 data centre building, the tanks will be located in one of two dedicated rooms (2 tanks per room). The tanks will be sized to provide 24 hours of fuel to the SBGs during a blackout event.
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	No
Checklist of supporting information	• Best Available Techniques and Operating Techniques Assessment (reference 410.064698.00001 BATOT, July 2023)

	• Best Available Techniques and Operating Techniques Assessment (reference 410.066261.00001 BATOT, April 2026)

2.4.2 Telehouse South

Have there been any changes to the activity boundary?	No
Have there been any changes to the permitted activities?	TS is undergoing refurbishment and the EP variation application includes details of the planned changes. These changes include: • Removal of all 10 existing SBGs and replacement with 10 diesel-fired SBGs (MTU 20V4000G94LF), fitted with selective catalytic reduction (SCR) abatement to reduce emissions of nitrous oxides (NO_x); • Installation of 2 AdBlue bulk storage tanks in the SSB which will feed AdBlue to the SCR abatement systems; • Changing of the existing horizontal SBG stacks to vertical stacks; • Removal of the 3 natural gas-fired boilers and calorifiers; and • Decommissioning and future removal of the 2 diesel bulk storage tanks. The 10 existing SBGs and associated fuel systems, including the 2 bulk diesel tanks, along with the 3 natural gas-fired boilers and calorifiers will be removed from the Main Datacentre Building (DTC) and Energy Utility Building (EUB) (note that the EUB is now referred to as the South Support Building (SSB)). 10 new containerised SBGs will be installed in the SSB; these will be externally housed on Level 2 of this building (i.e. roof level). Each new SBG will be designed with an individual diesel belly tank (18,000 litre capacity per SBG) which will be located under each SBG within the container unit. Each SBG will be fitted with SCR abatement to reduce NO_x emissions to air as a result of the combustion of diesel by the SBGs. A new fuel and AdBlue distribution network will be installed within the SSB, including a new fuel fill point and AdBlue fill point which will be located at ground level of the SSB; this will enable the delivery by bulk tanker of diesel to the SBGs and AdBlue to the 2 AdBlue bulk tanks (to be located on level 1 of the SSB). In addition, all existing horizontal SBG stacks will be replaced with vertical stacks. Based on the changes, the total rated thermal input (under standby power operating conditions) of the TS data centre will be circa 88.16MWth. In addition, in the EP application submitted by the previous data centre operator Thomas Reuters, it was stated that uncontaminated surface water discharged to sewer. Uncontaminated surface water in fact discharges to the River Thames via an outfall located off site (see paragraph below), in accordance with the Port of London Authority consent. Uncontaminated surface water runoff from the SBG roof area and the fuel/AdBlue delivery area will drain to the on-site surface

	water drainage system, where it will be directed via a newly installed full retention Class 1 forecourt petrol interceptor and Vortex separator, prior to discharge into the River Thames via the existing outfall. These changes are outlined in the document Drainage Strategy ref. TSX002-SWE-ZZ-XX-RP-C-000001_P01 (Sweco, Dec 2021) (Telehouse South), included as Appendix 08 of this SCR. There will be no changes in the nature or composition of the surface water runoff at TS as a result of the proposed changes. The SGB’s at TS began using HVO as a fuel in 2026.
Have any ‘dangerous substances’ not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	No
Checklist of supporting information	Best Available Techniques and Operating Techniques Assessment (reference 410.064698.00001 BATOT). Drawing 002B. Drainage Strategy ref. TSX002-SWE-ZZ-XX-RP-C-000001_P01 (Sweco, Dec 2021) (Telehouse South) (Appendix 08 of this SCR).

2.5 Measures Taken to Protect Land

2.5.1 Telehouse North

5.0 Measures taken to protect land	
Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can’t, you need to collect land and/or groundwater data to assess whether the land has deteriorated.	
Checklist of supporting information	• Inspection records and summary of findings of inspections for all pollution prevention measures • Records of maintenance, repair and replacement of pollution prevention measures

2.5.2 Telehouse South

5.0 Measures taken to protect land	
Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can’t, you need to collect land and/or groundwater data to assess whether the land has deteriorated.	
Checklist of supporting information	• Inspection records and summary of findings of inspections for all pollution prevention measures • Records of maintenance, repair and replacement of pollution prevention measures

2.6 Pollution Incidents That May Have Had an Impact on Land, and Their Remediation

2.6.1 Telehouse North

6.0 Pollution incidents that may have had an impact on land, and their remediation

This section was updated in May 2021 to document a spill of diesel which occurred during a diesel delivery in December 2020 and the subsequent remedial actions taken.

31st December 2020 – gas oil spill:

On the 31st December 2020, the site ordered a diesel fuel delivery to the N2 Building underground storage tank. The tank gauge indicated that the tank was holding 28,000 litres of fuel out of a maximum capacity of 59,000 litres. A third party fuel supplier delivered approximately 200 litres of gas oil to the tank before filling was halted as the gauge increased rapidly to indicate that the tank was filled to 56,000 litres. The tank and gauge were left to settle following which the level gauge settled read 32,000 litres, therefore filling recommenced. Approximately 427 litres of gas oil were delivered on this second attempt prior to filling being halted due to gas oil flowing out through the tank vent pipe.

The site estimated that up to 400 litres of gas oil was lost during the incident. The gas oil spilt onto the paving stones and grassed area, specifically in the area adjacent to the tank breather vent pipework. At the time of the incident, spill kits were deployed by the Telehouse's M&E team to contain the spill and diesel impacted surface stones were removed and bagged up.

Telehouse's fuel delivery subcontractor attended site on the day of the incident to undertake initial remedial work to minimise the environmental impact of the spill. This included the containment of excess product, a surfactant scrub of impacted hardstanding and the removal of approximately 340kg of soil visibly impacted by the gas oil spill. Drainage runs were also inspected within the area and it was reported that no impact had occurred as a result of the spill. Refer to report for details: *OHES Environmental Investigation Initial Report, 16th January 2021, report reference FJ_6997*.

Telehouse, on the day of the incident, contacted the EA (Duty Manager Mr. Andreas Holden) to report the incident. Mr Holden said this level of response and information was more than required to close out the event and mitigate any public complaint should any arise. The reference number provide by the EA was 1875289.A formal Schedule 5 notification was issued to the Environment Agency on 28th January 2021.

On 7th January 2021 an initial site investigation of the area surrounding the point of gas oil spill was undertaken by the OHES environmental. The investigation comprised the advancement of shallow hand locations in soft landscaping surrounding the point of loss, with on-site photo ionisation detector (PID) screening of soils for presence of VOCs and collection of samples for laboratory analysis. A total of 7 shallow soil samples were submitted for laboratory chemical analysis, specifically UKAS certified analysis for hydrocarbons. The report concluded that there was a risk associated with a location near to the tank vent with regards to the underlying sensitive groundwater receptor and that further investigation to delineate the vertical extent was recommended. Full details are presented in the OHES report (*OHES Environmental Investigation Initial Report, 16th January 2021, report reference FJ_6997*).

Following the initial investigation OHSE undertook additional remedial works in February 2021 (refer to OHES report OHES_FJ6997 Final) and SLR Consulting Limited completed the sampling and analysis of groundwater from all boreholes installed at the Installation:

The remedial work resulted in the removal of approximately 10 tonnes of contaminated soils, which were disposed of to an appropriate waste disposal facility. Visibly impacted grass and stained areas were removed and backfilled with soils suitable for use to ground level. Following remedial activities validation sampling and analysis of soil samples was completed. Based on the remedial works and results of the validation sampling and testing, it was concluded that there was a low risk of adverse impact to sensitive receptors.

Groundwater sampling was undertaken on 19th January 2021 by SLR Consulting Limited. Analytical results confirmed that there has been no observable impact to groundwater as a result of the gas oil spill. Telehouse post event investigation into the cause of the incident identified a faulty tank level gauge. Telehouse replaced the tank gauge following this incident and the EA accepted closure of this incident. Additional measures taken by Telehouse to prevent reoccurrence included the following: • Staff inductions/training for fuel delivery; • Bult tank pressure test following replacement of level gauge; and • Overfill prevention valve replacement.	
Checklist of supporting information	Appendix 09: 31st December 2020 oil spill supporting documents: • Telehouse schedule 5 notification – EPR/SP3237JU – 31st December 2020. • OHES Environmental, Investigation Initial Report, 16th January 2021, report reference FJ_6997. • OHES Environmental, Investigation Final Report, 5th March 2021. • SLR Consulting Limited Groundwater Monitoring and Analysis, 16th February 2021 • EPR Compliance Assessment Report SP3237JU/0389835, 8th April 2021.

2.6.2 Telehouse South

6.0 Pollution incidents that may have had an impact on land, and their remediation	
Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you can't, you need to collect land and /or groundwater reference data to assess whether the land has deteriorated while you've been there.	
Checklist of supporting information	• Records of pollution incidents that may have impacted on land • Records of their investigation and remediation
• **There have been no pollution incidents that may have had an impact on land.**	

2.7 Soil Gas and Water Quality Monitoring (where undertaken)

2.7.1 Telehouse North

7.0 Soil gas and water quality monitoring (where undertaken)	
This section was updated in May 2021 to document a spill of diesel which occurred during a diesel delivery in December 2020 and the subsequent remedial actions taken. 31st December 2020 - gas oil spill: • On the 7th January 2021 an initial site investigation of the area surrounding the point of the gas oil spill was undertaken by the OHES environmental. The investigation comprised the advancement of shallow hand locations in soft landscaping surrounding the point of loss. It was concluded that further investigation was required to delineate the vertical extent of some residual contamination. Full details are provided in the OHES Environmental, Investigation Initial Report, 16th January 2021, report reference FJ_6997 presented in Appendix 5 of this SCR. • Groundwater sampling and analysis was undertaken in January 2021 following a gas oil spill in December 2020. The results indicated that there has been no observable impact to groundwater from the gas oil spill. The results also indicated consistent to improved groundwater conditions on-site compared with the established baseline conditions. Appendix 5 of this SCR provides the sampling and analysis report (SLR Consulting Limited Groundwater Monitoring and Analysis, 16th February 2021). • In February 2021 further remedial work was undertaken by OHES, following which validation sampling was completed to demonstrate that gas oil impacted soils had been successfully removed. Based on the remedial works and results of the validation sampling and testing, it was concluded that there was a low risk of adverse impact to sensitive receptors. Full details are provided in the OHES Environmental Investigation Final Report, 5th March 2021 presented in Appendix 5 of this SCR.	
Checklist of supporting information	Appendix 09: 31st December 2020 oil spill supporting documents: • Telehouse schedule 5 notification – EPR/SP3237JU – 31st December 2020. • OHES Environmental, Investigation Initial Report, 16th January 2021, report reference FJ_6997. • OHES Environmental, Investigation Final Report, 5th March 2021. • SLR Consulting Limited Groundwater Monitoring and Analysis, 16th February 2021 • EPR Compliance Assessment Report SP3237JU/0389835, 8th April 2021.

2.7.2 Telehouse South

7.0 Soil gas and water quality monitoring (where undertaken)	
Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.	
Checklist of supporting information	• **Not relevant for this EP variation. There have been no pollution incidents that may have had an impact on land.**

3.0 Baseline Soil and Groundwater Reference Data

The European Commission Guidance concerning baseline reports under *Article 22(2) of Directive 2010/75/EU on industrial emissions 2014/C 136/03*[13], outlines that a number of key tasks should be undertaken to both determine whether a baseline report needs to be produced for a particular situation and in order to produce the baseline report itself. Eight stages have been identified in this process, covering the following main elements:

- Stages 1-3: to decide whether a baseline report is required;
- Stages 4-7: to determine how a baseline report has to be prepared;
- Stage 8: to determine the content of the report

Where during stages 1-3 it is demonstrated on the basis of the available information that a baseline report is not required, the IED state the '*there is no need to progress to the later stages*'. However, a record of this decision should be provided to the competent authority.

3.1 Stages 1-3

- Stage 1: Identify which hazardous substances are used, produced or released at the installation and produce a list of these hazardous substances.
- Stage 2: Identify which of the hazardous substances from Stage 1 are 'relevant hazardous substances' (RHSs). Discard those hazardous substances that are incapable of contaminating soil or groundwater. Justify and record the decisions taken to exclude certain hazardous substances.

  Relevant hazardous substances' *are those substances or mixtures defined within Article 3 of Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) which, as a result of their hazardousness, mobility, persistence and biodegradability (as well as other characteristics), are capable of contaminating soil or groundwater and are used, produced and/or released by the installation.*
- Stage 3: For each relevant hazardous substance brought forward from Stage 2, identify the actual possibility for soil or groundwater contamination at the site of the installation, including the probability of releases and their consequences, and taking particular account of:
  - the quantities of each hazardous substance or groups of similar hazardous substances concerned;
  - how and where hazardous substances are stored, used and to be transported around the installation;
  - where they pose a risk to be released; and
  - in the case of existing installations also the measures that have been adopted to ensure that it is impossible in practice that contamination of soil or groundwater takes place.

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[13] Communication from the Commission — European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions (europa.eu)

3.1.1 Stages 4-7

Stages 4 to 6 involves the collation of site-specific data to outline the site history and environmental setting to outline the sensitivity of the site to potential risk from accidental releases of RHS.

Stage 7 outlines the requirement to collect intrusive soil and groundwater data to characterise the land at the start of permitted activities and set the ‘baseline’ land quality data.

3.1.2 Stage 8

Stage out outlines the requirement for a baseline report in line with Article 22(2) of the IED.

3.1.3 IED Baseline Assessment for the Site

Set out below in Table 1 are details of how Telehouse will meet the baseline data requirements for the TW2. It should be noted that RHS requirements were not in place at the time of the environmental permit application and subsequent variation with respect to TN and TS.

Table 1 Industrial Emissions Directive Baseline Data Requirements

Stage	Activity	Objective	How The Requirements Have Been Met
1	Identify which hazardous substances are used, produced or released at the installation.	Determine whether hazardous substances are used, produced or released in view of deciding whether a baseline report is required. If yes: produce a list of all potential hazardous substances.	A list of potentially hazardous substances used or produced on-Site that will be stored externally at TW2 and / or have the potential to result in the contamination of soil and groundwater are presented below: • AdBlue; • Gas oil; and • Hydrotreated Vegetable Oil (HVO). The material safety data sheets (MSDS) for these raw materials have been included as Appendix C with this SCR. The MSDS for the AdBlue used on Site demonstrates that it is not considered to be hazardous or have any hazardous environmental effects. Furthermore, AdBlue at TW2 will be stored in 10,000 litre above ground level stainless steel tanks. Each of these tanks will be single skinned and located in individual concrete bunds designed to contain 110% of the tank’s contents. Each tank will be fitted with level sensors and a tank level gauge with high/low alarms. Due to the pollution controls in place for the AdBlue tanks, and that the risk of pollution of soil and groundwater as a result of accidental release is considered to be negligible; AdBlue has not been considered further in this assessment. Gas oil and HVO have both been taken further in this assessment as they are considered to have hazardous properties.
2	Identify which of the hazardous substances from Stage 1 which, according to the	To restrict further consideration to only the relevant hazardous substances (RHS) that	A review of the raw materials that will be present at the Site that are considered to be a hazardous substance are presented below:

<table>
<tr><th>Stage</th><th>Activity</th><th>Objective</th><th>How The Requirements Have Been Met</th></tr>
<tr>
<td></td>
<td>evaluation by a suitably qualified and experienced person, and because of their hazardous potential (toxicity, mobility, persistence and biodegradability, as well as other characteristics), are capable of contaminating soil or groundwater.
Discard those hazardous substances that are incapable of contaminating soil or groundwater. Justify and record the decisions taken to exclude certain hazardous substances.</td>
<td>are capable of contaminating soil or groundwater in view of deciding on the need to prepare and submit a baseline report.</td>
<td>
<table>
<tr><th>Hazardous Substance</th><th>Use of Material</th><th>MSDS Hazard Statement</th></tr>
<tr><td>HVO</td><td>Fuel for the generators</td><td>H304</td></tr>
<tr><td>Gas oil</td><td>Fuel for the generators</td><td>H226, H304, H315, H332, H351, H373, H411</td></tr>
</table>
<p>The hazardous statements (H-statements) included within the HVO MSDS include only the following:</p>
Asp. Tox. 1; H304 (May be fatal if swallowed and enters airways).
<p>This hazardous code indicates that HVO would not cause harm to the environment and is only a risk to human health. As such, HVO has not been brought further forward in this assessment to Stage 2 and is not considered an RHS.</p>
<p>The H-statements included within the Gas oil MSDS include the following:</p>

H226: Flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H332: Harmful if inhaled.
H351: Suspected of causing cancer.
H373: May cause damage to organs through prolonged or repeated exposure. Bone marrow, Liver, Thymus.
H411: Toxic to aquatic life with long lasting effects.

<p>Due to the H411 code and indication that the gas oil could be harmful to the environment, gas oil will be taken to Stage 2 in this assessment and is considered an RHS.</p>
<p>Mitigation measures proposed for TW2 will ensure that no contamination occurs as a result of the proposed activities. Environmental protection measures proposed for gas oil storage, off-loading and delivery are as detailed in the following documents submitted with this EP variation application:</p>
410.066261.00001_Environmental Risk Assessment
</td>
</tr>
</table>

Stage	Activity	Objective	How The Requirements Have Been Met
			• 410.066261.00001_Best Available Techniques and Operating Techniques The facility will be managed by technically competent personnel in accordance with Site procedures and the Environmental Management System (EMS). This will ensure good environmental practices on Site which will minimise the risk of potentially polluting incidents during the operation of the data centre.
3	Identify the possibility for soil or groundwater contamination at the site for each relevant hazardous substance brought forward from Stage 2 of the installation, including the probability and the consequences of releases, including - the quantities of each hazardous substance concerned; - how and where they are stored; - how they are to be transported around the installation; - how they are used - where they are emitted - measures that have been and, for new installations, will be adopted to protect soil and groundwater at the installation.	To identify which of the hazardous substances from Stage 2 represent a potential pollution risk at the site based on the likelihood of emissions of such substances occurring. **These are the 'relevant' hazardous substances for which information must be included in the baseline report.** Note: Where it is found that there is **no possibility of soil and groundwater contamination, then a baseline report does not need to be prepared or submitted** (due to the quantities of the hazardous substances used, produced or released). However, in these cases it is expected that	As detailed in Stage 2, the probability of release of gas oil from the facility is low due to the proposed mitigation measures for the TW2 site. Gas oil will be stored in the following quantities and with the following environmental protection measures at the facility: • Installation of 13 new SBGs on the ground level of the new TW2 data hall. Each SBG will be served by a day tank (3,750 litre capacity per SBG) located inside the ground floor generator rooms internal to the proposed TW2 data centre building. A shallow steel bund will be provided around each SBG and the fuel and AdBlue delivery pipework located in the generator rooms, to allow for the containment of any leaks or spills. There will be an automatic shut off valve on the day tanks to prevent the continuous supply of fuel from the bulk tanks in the event of a leak. • There will be 4 x bulk fuel storage tanks (agl) (each 54,000 litres in capacity). These tanks will be located on the ground floor of the TW2 data centre building. The tanks will be located in one of two dedicated rooms (2 tanks per room). The tanks will be sized to provide 24 hours supply to the SBGs during a black out event. The bulk fuel tanks will be double skinned; the bulk fuel tank rooms will be designed to provide 110% containment. • The fill points for the bulk fuel tanks will be located externally on the wall of the room in which the tanks will be located. These fill points will be located in a lockable cabinet; the cabinet will be provided with a drip tray. • A fuel discharge mains ring (located internal to the data centre building) will deliver fuel from the bulk tanks to the SBGs, with the fuel pumped from the bulk tanks to the SBGs by fuel pumps located in an Oil Pump Room. The Oil Pump Room will be provided with 110% containment. The fuel delivery pipework will have leak detection.

Stage	Activity	Objective	How The Requirements Have Been Met
		a record of such a decision, including the reasons for the decision, will be made and held by the competent authority.	The mitigation measures proposed for the gas oil stored on Site, including containment and pollution prevention measures for filling and transportation around the Site are considered to be adequate to prevent loss of potential pollutants to the soil and groundwater underlying the Site. Therefore, these protection measures will offer protection the groundwater, surface water and soil within the installation permit boundary from contamination from the proposed Site activities at TW2. As such, this RHS assessment has concluded that there is no credible risk potential pollution impacting on soil and groundwater as a result of the activities proposed to be regulated under the EP at TW2.
4	Provide site history	Identify potential sources which may have resulted in the relevant hazardous substances identified in Stage 3 being already present on the site of the installation.	Please refer to Section 2 of this SCR for details of past land use and historic pollution incidents.
5	Identify the site’s environmental setting	Determine where hazardous substances may go if emitted and where to look for them. Also identify the environmental media and receptors that are potentially at risk and where there are other activities in the area which release the same hazardous substances and may cause them to migrate onto the site.	Refer to the ERA included with this EP variation application for details of the Site’s surroundings and details of present environmental settings.

Stage	Activity	Objective	How The Requirements Have Been Met
6	Use the results of Stages (3) to (5) to describe the site, in particular, demonstrating the location, type, extent and quantity of historic pollution and potential future emissions noting the strata and groundwater bodies likely to be affected by those emissions – making links between sources of emissions, the pathways by which pollution may move and the receptors likely to be affected.	Identify the location, nature and extent of existing pollution on the site and determine which strata and groundwater bodies might be affected by such pollution. Compare with potential future emissions to see if areas are coincident.	For information on existing historic pollution underlying the TW2 facility, please refer to Section 2 of this SCR, and the following documents: • Appendix A: Cundall Outline Planning Application, Land Quality Assessment report, October 2018; and • Appendix B: Cundall Phase II Geotechnical and Geoenvironmental Assessment report, 24 October 2024.
7	If there is sufficient information to quantify the state of soil and groundwater pollution by relevant hazardous substances on the basis of Stages (1) to (6) then go directly to Stage 8. If insufficient data exists, then intrusive investigation of the site will be required in order to gather such information.	Collect additional data as is necessary to allow a quantified assessment of soil and groundwater pollution by relevant hazardous substances.	There is no credible risk from ongoing pollution incidents from the proposed onsite activities due to the combination of existing containment and environmental management procedures that are currently in place, and measures proposed to be in place at TW2. However, intrusive Site investigations have been undertaken to establish a baseline for the TW2 facility. For information of this baseline, please refer to the following documents; • Appendix A: Cundall Outline Planning Application, Land Quality Assessment report, October 2018; and • Appendix B: Cundall Phase II Geotechnical and Geoenvironmental Assessment report, 24 October 2024.
8	Produce a baseline report for the installation that quantifies the state	Provide a baseline report in line with the IED.	This report ‘416.066261.00001_SCR_TW2’ provides a baseline report in line with Article 22(2) of the IED.

Stage	Activity	Objective	How The Requirements Have Been Met
	of soil and groundwater pollution by relevant hazardous substances		

3.1.4 RHS Assessment Conclusion

There is no credible risk from the RHS's to be stored and used on Site for the proposed environmental permitted activities at TW2, given the containment measures and environmental management procedures that will be in place. Despite this, soil and groundwater data has been obtained to establish the baseline condition for the permitted activities at TW2.

Appendix A Cundall Outline Planning Application, Land Quality Assessment report, October 2018.

Environmental Permit Variation Application

Site Condition and Baseline Report

Telehouse International Corporation of Europe Limited

SLR Project No.: 410.066261.00001

CUNDALL

PROPOSED REDEVELOPMENT OF SITE 3
CORIANDER AVENUE - EAST INDIA DOCK E14 2AA

TELEHOUSE
PROJECT - T

OUTLINE PLANNING APPLICATION

Land Quality Assessment

October 2018 (rev P1)

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Report title	Preliminary Land Quality Assessment	1016734

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23/10/2018

X

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23/10/2018

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Executive Summary

Executive Summary	
The Site	The site comprises a roughly rectangular shaped parcel of land located in the Docklands area of London bounded by the A13 road to the north and Coriander Avenue to the south. It is presently occupied by an operational hotel with associated car parking and managed external areas.
The Scheme	Telehouse International Corporation of Europe Ltd (the Client) propose to redevelop the site with a new data centre, together with vehicular access and a service yard.
Objectives and Scope	Cundall was commissioned by the Client to prepare and issue a Preliminary Land Quality Assessment (Phase I Desk Study) in the context of the proposed development to support a future Planning Application and to assist in the design of future intrusive ground investigation
Historical Land Use	The development historically formed part of the East India Dock with only the far southern and south eastern extents of the site forming the wet dock. It is understood the dock was infilled between the 1960s and 1980s with the site recorded as occupied by the existing hotel by 1999.
Unexploded Ordnance (UXO)	There is a very high risk of UXO encounter at the site and control / mitigation measures must be implemented during any intrusive works as part of any site surveys or subsequent construction works.
Geology and Ground Conditions	The anticipated ground conditions at the site comprise: • General made ground (up to 5m thick) in the majority of the site or dock infill in the far southern part of the site (about 11m thick) • Alluvium to between approximately 9m to11m bgl • London Clay to approximately 25m bgl • Harwich Formation and Lambeth Group to approximately 42m to 45m bgl • Thanet Sand to approximately 58m bgl • Lewes Chalk from approximately 58m bgl It is considered likely that two groundwater bodies will be encountered at the site, a shallow groundwater table located within the deep made ground and/or alluvium, likely to be in hydraulic continuity with the Rivers Thames and Lea and a deeper groundwater table within the Lambeth group hydraulically confined under sub-artesian pressure by the overlying London Clay
Preliminary Geoenvironmental Risk Assessment	Based on the historical development of the site and the proposed redevelopment of the site for a commercial end use it is considered that the geoenvironmental risk to human health is generally moderate once the scheme is constructed but potentially high during construction. The risk to controlled waters and from hazardous gas is also considered potentially high.
Development Considerations	• Prior to further assessment being carried out, it is recommended that at this stage allowance is made for ground gas protection measures for the new structures. • An assessment of waste soils arising during construction will be required but at this stage an allowance to dispose of some soils that classify as hazardous would be prudent. • Relict foundations / structures from previous development on site may remain in situ and present obstructions to construction • At this stage, piled foundations and a suspended ground floor slab should be allowed for
Recommendations for Further Work	Subject to planning permission being granted, an intrusive ground investigation will be required to further assess and quantify the potential geoenvironmental risks and also to inform scheme design.
This Executive Summary is intended as a summary of the geotechnical and geoenvironmental assessment of the site in the context of the current development proposals based on information received by Cundall at the time of production and should be read in conjunction with the main Report text.	

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Appendix D	Detailed UXO Risk Assessment
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1.0

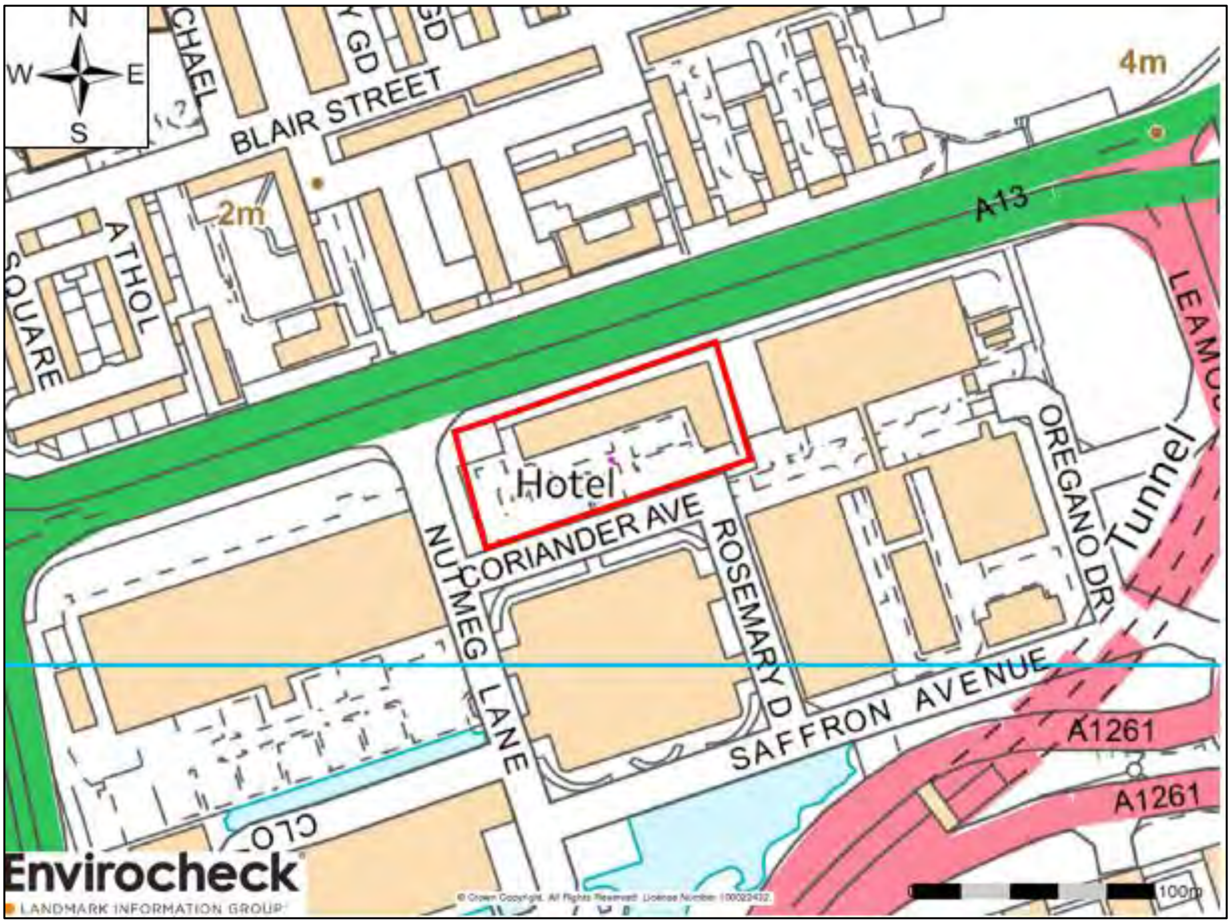
Introduction

1.0 Introduction

1.1 The Site

The site comprises a roughly rectangular shaped parcel of land (0.01ha) located in the Docklands area of London. Figure 1 shows the development site location and its boundaries (delineated in red).

Figure 1: Site Location Plan


N
W
E
S
CHAEL
GD
GD
BLAIR STREET
4m
2m
A13
ATHOL
SQUARE
LEAMOU
OREGANO DR
Tunnel
Hotel
CORIANDER AVE
NUTMEG LANE
ROSEMARY D
SAFFRON AVENUE
A1261
A1261
CLO
Envirocheck
LANDMARK INFORMATION GROUP
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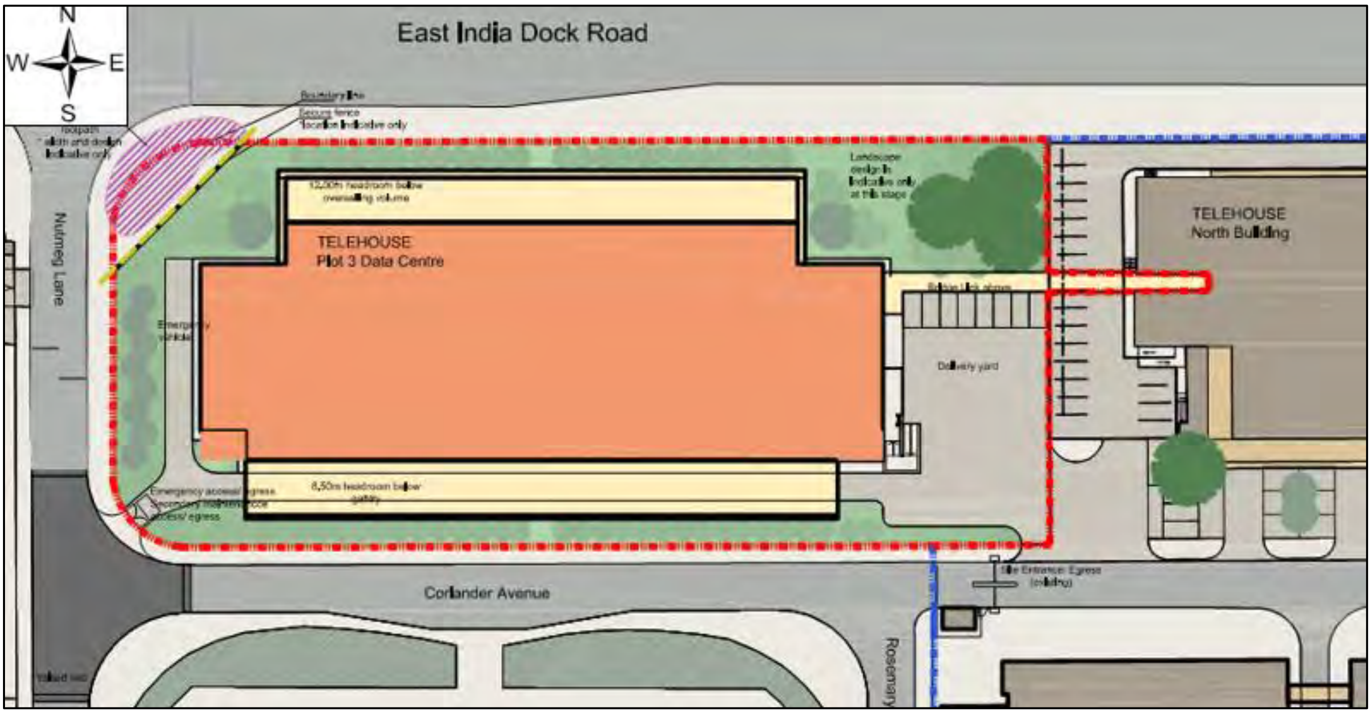
100m

1.2 The Scheme

Telehouse International Corporation of Europe Ltd (the Client) propose to redevelop the site of an existing hotel and car parking with a new data centre, together with vehicular access and a service yard. The illustrative proposed development plan is presented in Figure 2.

Figure 2: Illustrative Proposed Development Plan


N
W
E
S
East India Dock Road
Boundary line
Secure fence
location indicative only
Footpath
width and design
indicative only
Nutmeg Lane
12.00m headroom below
oversailing volume
TELEHOUSE
Plot 3 Data Centre
Emergency
vehicle
Landscape
design is
indicative only
at this stage
Bridge Link above
TELEHOUSE
North Building
Delivery yard
Emergency access/ egress
Secondary maintenance
access/ egress
8.50m headroom below
gantry
Coriander Avenue
Site Entrance/ Egress
(existing)
Rosemary

1.3 Objectives and Scope of Assessment

Cundall was commissioned by the Client to prepare and issue a Preliminary Land Quality Assessment (also known as a 'Phase I Desk Study') in the context of the proposed development to support a future Planning Application and to assist in the design of future intrusive ground investigation.

1.4 Sources of Information

This assessment has been based on a review of readily available published information and background research, including, but not limited to, the sources described below. Where additional sources of background information have been used, these are stated in the text.

1. Cundall, 03rd August 2018, Detailed UXO Threat and Risk Assessment, Project T, reference 1016734.RPT.GL.002 Rev A.
2. Landmark Information Group / 6 Alpha Associates (3 May 2018) Detailed Unexploded Ordnance (UXO) Risk and Threat Assessment, reference. P6593
3. Concept Site Investigations, 12th March 2014, Site Investigation Report, Project Indigo, reference 13/2591-FR02.
4. Cundall, 24th March 2014, Geotechnical and Geoenvironmental Assessment, Project Indigo, reference 1007895-RPT-00082.
5. Landmark Information Group. 21th February 2018. Envirocheck Report, reference 157608383_1_1.
6. British History Online, reviewed February 2018.
7. BGS – Geology of Britain Viewer (Borehole Scans), reviewed February 2018

1.5 Limitations

The findings and opinions conveyed in this report are based on information obtained from a variety of readily available sources as detailed within the report and which Cundall believes are reliable. The information contained in this report is to the best of our knowledge accurate at the date of issue. If new information comes to light pertaining to the site or proposed development, Cundall reserves the right to review the information and revise the recommendations made in the report.

2.0

Site Description

2.0 Site Description

2.1 Site Details

A summary of the site's key features is given in Table 1.

Table 1: Site Description

Site Area and Shape	The site comprises a roughly rectangular parcel of land with its long axis roughly orientated west to east.
Site Boundaries and Adjacent Land Use	The site is bound by adopted highways on three sides; namely East India Dock Road (A13) to the north, Nutmeg Lane to the west and Coriander Avenue to the south To the east the site is bound by existing Telehouse campus.
Site Topography	The site is generally flat lying.
Existing Land Uses/Features	The site is currently occupied by a hotel (in the northern and eastern extents) and associated hard-surfaced car parking and paving elsewhere. Limited perimeter landscaping (comprising semi mature trees) is present particularly along the southern boundary.
Evidence of Contamination	None noted – housekeeping was generally observed to be of a good standard.

2.2 Site Reconnaissance and Key Features

A site inspection was undertaken by an Engineer from Cundall on the 28st February 2018 and all safely accessible areas of the site were inspected. The key features identified as part of the walkover are as described below.

1. The northern site boundary to the A13 road is formed by a brick wall approximately 1.5m high topped with metal railings. This wall retains site levels approximately 0.5m above that of the A13 road
2. The existing travel lodge consists of an 'L' shaped 5 storey structure with the long axis extending west to east along the northern part of the site and the based of the 'L' extending south from the north east of the site.
3. Pedestrian walkways surround the hotel building and these areas are generally formed by block paving.
4. The majority of the site located south of the hotel is used as car parking and the site surface in this area consists of tarmacadam.
5. Limited soft planting areas are present around the site's boundaries and also as localised beds within the car park.
6. Plant rooms / facilities were noted as a collection of small, single storey structures located immediately west of the western extent of the hotel in the north west of the site. the structures consisted of:
    a. An electricity sub-station
    b. Air conditioning units
    c. An apparent refrigeration store
    d. Other electrical cabinets
    e. Waste storage skip
    f. Waste bins
7. Housekeeping in area 6 (above) was observed to be generally good with no spillages or loose deposited waste noted.

3.0

Historical Development

3.0 Historical Development

3.1 Historical Review

The historical plans forming part of the Envirocheck report were reviewed alongside anecdotal information and independent research by Cundall to determine the relevant recorded historic development and land uses both on and around the site and their relevant implications on the proposed development site (such as potential contaminant sources). Much of the focus of this review is based upon the site and its immediate (within about 100m) environment.

The findings are summarised subsequently, and the historical mapping associated with the Envirocheck report is presented in Appendix A. Note that where distances are cited, they are taken from the site centre and should be treated as approximate.

Table 2 presents a summary of the historic map review, with a more detailed discussion presented subsequently.

Table 2: Historic Mapping Review

Epoch	On-site Features	Off-site Features
1869 to 1899	The site is occupied by North Quay of the East India Dock. Much of the site is occupied by a series warehouses and mooring posts, with the far south-eastern corner (bisected by the quay wall) occupied by the 'wet dock'.	The western, southern and eastern aspects of the site are dominated the respective West Quay, South Quay and East Quay of the East India Docks with associated warehouses and mooring points. Barking Road is immediately beyond the site's northern boundary (trending west-south-west to east-north-east) with residential housing beyond.
1916 to 1946	The warehouses are recorded to have been replaced by a single Transit Shed with a railway immediately beyond orientated west-south-west to east-north-east.	The numerous warehouses associated with each quay are recorded to have been replaced with fewer but much larger Transit Sheds (one each on the West Quay and East Quay, two on the South Quay, and one either side of the site on the North Quay.
1949-1952	No significant changes recorded.	Barking Road is now known as East India Dock Road. A bus depot is recorded 100m to the north of the site. Notably, ruins are recorded between 75 and 100m north of the site. Additionally, numerous ruins are recorded within 250m of the site to all aspects and there are multiple 'zones' where buildings are no longer recorded in otherwise developed areas – all indicative of significant bomb damage during the Second World War. Additionally, the Transit sheds on the West Quay are no longer recorded however it is not clear if this is associated with bomb damage.
1953-1965	No significant changes recorded.	The West Quay of the dock is now recorded as 'disused'.
1975-1982	No significant changes recorded.	The bus depot is no longer recorded and appears to be replaced with housing.
1985	The south-eastern extents of the site are no longer recorded to oversail the wet dock – indicating it has been infilled.	Much of the dock is indicated to be infilled, with only the eastern extents shown as being 'wet'.
1990	The Transit Shed and railway is no longer recorded.	The Transit Sheds are no longer recorded.
1991-1999	The site is recorded as undeveloped (assumed to have been cleared in advance of redevelopment)	New roads and infrastructure are recorded to the west, south and east oversailing all of what was the East India Dock. East India Dock House is recorded 75m to the west-south-west and unnamed buildings are recorded both 50m east-north-east and 150m to the south-west.
2006-2018	The site is recorded to be wholly occupied by a hotel and associated car park.	Further un-named buildings are recorded 50m to the south and 100m to the south-east of the site.

3.2 Historical Development Summary

3.2.1 On Site

Cundall research indicates that the site was first developed in about 1803 and formed part of what was known as the East India Dock (though the earliest historic mapping epoch included within the Envirocheck report to verify this is 1869). Based on the historic mapping only the far southern / south-eastern extents (probably about 10% of the subject site) oversails what was the ‘wet dock’, with much of the subject site oversailing what was mooring points and warehousing associated with the North Quay.

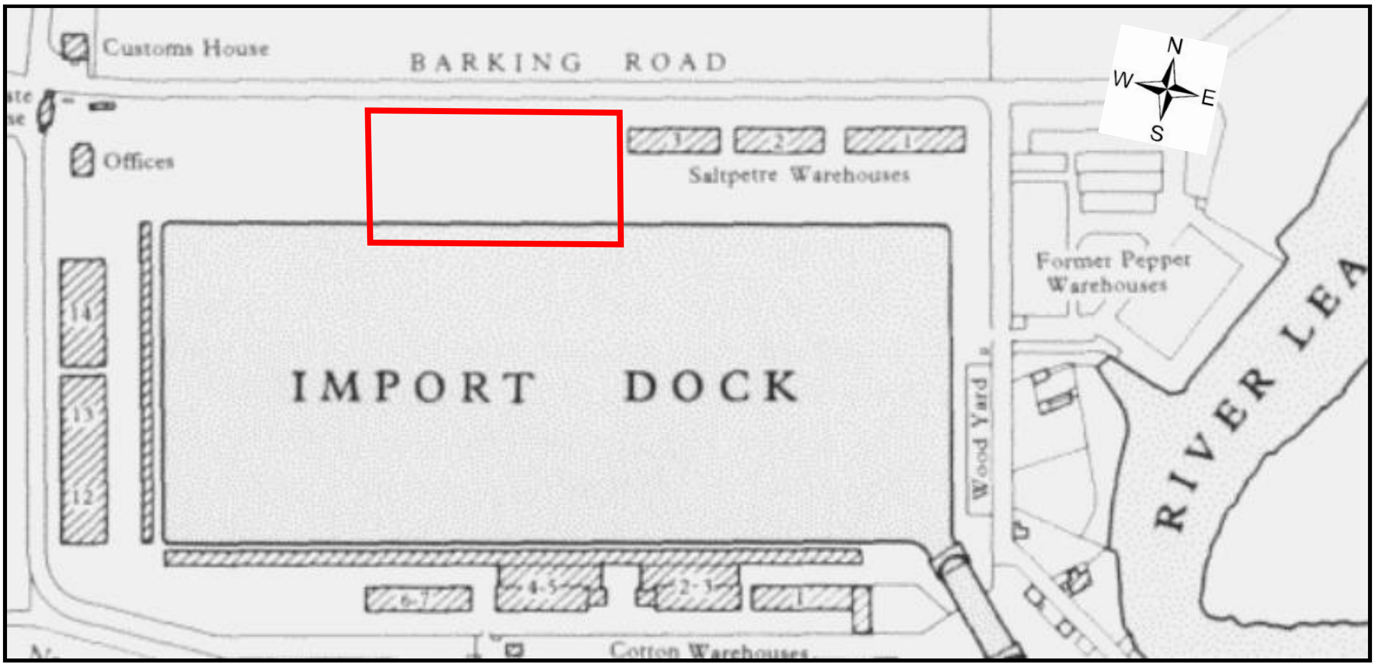
An ‘as built’ drawing of the former dock from between 1803 and 1806 and how it approximately relates to the subject site, from British History Online, is presented in Figure 3.

In 1912 it is known that the Port of London Authority redeveloped the North Quay with new warehousing and transit buildings. This is substantiated on the historic mapping which record a large number of small buildings in the1896 epoch, which are then indicated to be replaced by a smaller number of much large buildings (transit warehouses) by the 1916 epoch. Notably the town plans from 1933 record the office building to the immediate east of the site as ‘ASB’ – meaning it was either clad or constructed with asbestos.

East India Dock was closed in 1967, but history of the demolition of the former transit warehouses and infilling is less easily discernible from the historic mapping with the dock itself being recorded on the historic mapping up until the 1990 epoch. It is understood from further research that the infilling was an iterative process taking place gradually between the late 1960s and the mid-1980s though meaningful detail of this is limited (note that further detail on the potential nature of the dock infill material is given in Section 4 of this report.

The 1991 mapping no longer records the dock with the subject site area appearing to be undeveloped and bound by some limited infrastructure development (roads). By 1999, the subject site is recorded to be occupied by a hotel, which remains the case to the present day.

Figure 3: 1803-1806 as built drawing of the East India Dock and the subject site location



3.2.2 Surrounding Land Use

As the subject site is in the centre-north of the former East India Dock, the surrounding historical uses are dominated by the former dock as discussed in Section 3.2.1. Notably, the ‘wet dock’ dominated the subject site to the south.

Additionally, the East India Dock Road (formerly known as ‘Barking Road’) was first recorded on the historic mapping immediately beyond the site’s northern boundary in 1869, but further research suggests that Barking Road was in fact present from about 1803. This road is now also classified as the A13.

The historic mapping also indicates that by 1995, the land immediately to the east was redeveloped with a large unlabelled building, and to the west of the site (beyond Nutmeg Lane) redeveloped with a single large building labelled ‘East India Dock House’. By 2006 additional development had taken place to the south and south east comprising further unlabelled large buildings.

4.0

Geological & Environmental Setting

4.0 Geological & Environmental Setting

4.1 General

The geological and geoenvironmental setting of the site has been determined primarily from the information contained within the references listed in Section 1.4 of this report. Where reference is made to other information sources with respect to the geoenvironmental setting of the site, the source used is stated in the text.

The Envirocheck Report obtained for the site is included in Appendix B.

4.2 Geology / Ground Conditions

4.2.1 Published Mapping

The BGS geological maps of the area indicate that much of the site is underlain by Alluvium (clay and silt) overlying London Clay. The far south-eastern corner of the site is recorded as being underlain by Made Ground (associated with dock infill materials) which in turn is underlain by London Clay (it is assumed in this area that the Alluvium was removed to facilitate the dock construction). However, given the site's development history made ground is anticipated at surface across the entire site, and this is expanded in the subsequent sub-sections.

4.2.2 BGS Borehole Records

The BGS holds about 20 boreholes records on the site, and more than 50 No. within a 50m radius. The relevant on-site records have been reviewed and the generalised downward sequence indicated comprises:

- General Made Ground (both cohesive and granular with inclusions of ash, flint, pottery, brick and concrete) to between 0.6 and 5 m below surface (outwith the area of the infilled dock).
- Dock Infill Made Ground (far southern / south-eastern extents only within the area of the infilled dock) comprising both cohesive and granular material with inclusions of ash, slag, wood, clinker, brick, metals and glass to about 11 m below surface.
- Alluvium (generally soft to firm silty clays and dense sands and gravel with peat locally recorded) to between 8.8 m and 11.1 m below surface. Note that alluvium was not recorded beneath the dock infill material.
- London Clay (recorded as stiff fissured clay, locally initially soft to firm, potentially indicating a weathered upper profile) encountered between 8.8 and 11.1 m below surface and proven to at least about 22.5 m.

Additionally, groundwater was locally recorded within both the alluvium and made ground materials (both general made ground and dock infill). At shallow depth this is likely to be perched and discontinuous, however, one of the historic boreholes cites the water level as at 'sea table' which would imply that water within the deeper made ground and alluvium may be in hydraulic continuity with the Rivers Lea and Thames and tidally influenced.

Additionally, the relict northern dock wall is considered likely to remain in situ below ground, trending west to east, located towards the south-eastern corner of the site dividing the shallower 'general' made ground north of this feature and the deeper dock in fill to the south.

4.2.3 Concept Site Investigations Ground Investigation

Concept Site Investigations undertook an intrusive ground investigation some 200 to 250m east of the site for the TN2 data centre development. This investigation flanked the eastern dock wall and former the basis for the subsequent Cundall geotechnical and geoenvironmental assessment (referenced in Section 1). This investigation recorded the following:

- General Made Ground varies in thickness between 4.8 and 6.3m in thickness.
- Made Ground (dock infill) varies in thickness of between 10.5 and 12.8m. Generally, this material was described as soft clays and loose gravel with local inclusions of decayed timber, wire, metal, brick, concrete and organic matter. Notably the deeper dock infill materials (below about 8m) was rich in organic material.
- To the east of the dock wall, the made ground is underlain by Alluvium and Kempton Park Gravel to about 10m.
- London Clay (recorded as stiff to very stiff high to very high strength) was recorded to depths of around 25m bgl. Notably this stratum locally recorded pyrite nodules.

- Beneath the London Clay the Harwich Formation was recorded (stiff slightly sandy clay some 3 to 5m thick) overlying the Lambeth Group (interbedded stiff to hard clay and dense to very dense sand to between 42 and 45 m bgl).
- The Lambeth Group is underlain by the Thanet Sand (very dense sand to about 58m) in turn underlain by the Lewes Nodular Chalk (proven to about 65m bgl).

It is also noted from this investigation that no elevated concentrations of heavy metals or hydrocarbons were identified in a human health context for a commercial development, nor were there widespread elevated leachable concentrations of heavy metals / hydrocarbons. This together with the mechanical nature of the dock infill (with inclusions such as rounded gravels, a high silt / clay content and local organic content) suggests that the origin of some of this material is likely to be river dredging from the River Thames.

In addition, one positive asbestos (as loose fibres) identification was made (out of 17 samples) within the shallow depth made ground soil. As only one sample screened positive it was not possible to discern a possible source (i.e. whether or not this was derived from asbestos containing materials from the former buildings).

4.3 Mineral Extraction

4.3.1 BGS Recorded Mineral Site (From Envirocheck Data)

There are no BGS recorded mineral sites within 250m of the site. The closest is recorded as 476m east and ceased, associated with the supply of crushed rock.

4.4 Ground Stability (Non-Mineral Extraction)

The site is within an area that has been designated as having the following hazard potentials:

- No hazard potential for collapsible ground or ground dissolution
- Very low hazard potential for running sand, collapsible ground or landslide
- Low hazard potential for shrinking or swelling clay.
- Moderate hazard for compressible ground.

It should be noted, however, that these hazard assessments are estimates only and intrusive ground investigation is needed to assess the actual risk posed.

4.5 Hydrology and Hydrogeology

The River Thames is about 250m to the south of the site at its closest point and the River Lea is about 250m east of the site at its closest point. Both are tidally influenced at these locations.

No surface water abstractions are recorded within 1km of the site. The nearest groundwater abstraction is recorded 162m east associated with water drawn from the shallow alluvium for remediation purposes.

The subject site is not within in a groundwater source protection zone.

There are no discharge consents recorded within 250m of the site. The closest discharge consent is recorded 372m east associated with the discharge of surface water and is now revoked.

The superficial geology beneath the site is classified as Secondary Undifferentiated Strata and the solid geology beneath the site is classified as Unproductive Strata. Given the likelihood of tidal influence, it is likely that the dominant water environment characteristic is that groundwater within the deeper made ground and alluvium south of the former dock wall may be in hydraulic continuity with the Rivers Lea and Thames. Areas of the site north of the relict dock wall are likely to be hydraulically isolated from the wider water environment due to the confinement / hydraulic separation caused by this buried structure.

Groundwater within the Lambeth Group, Thanet Sands and Chalk is hydraulically separated by the overlying relatively impermeable London Clay and Harwich Formation which will likely act as an aquiclude. However, based upon Environment Agency records and groundwater monitoring undertaken as part of the Concept ground investigation referenced in Section 4.2.3, the deeper groundwater table in the area of the site is likely to be confined by the London Clay and Harwich Formation under sub-artesian pressure with the piezometric head approximately 12m above the level of confinement or 18m below ground level.

4.6 Landfill & Waste

The former East India Dock is itself a recorded Historic Landfill and Local Authority Recorded Landfill Site associated with the infilling following the dock closure. No formal record of the material used in the landfilling is given.

In addition, none of the following recorded 500m of the site:

- Integrated Pollution Control Registered Waste Sites.
- Licenced Waste Management Facilities (Landfill Boundaries & Locations).
- Potentially Infilled Land (Water & Non-Water).
- Registered Waste Transfer Sites.
- Registered Waste Treatment or Disposal Sites.

4.7 Radon

The site does not lie within a Radon Affected Area. Under this scenario, no protection against radon gas would be required in new buildings.

4.8 Statutory Registers & Environmental Issues

4.8.1 Industrial Land Use

A total of 26 Contemporary Trade Directory Entries exist within 500m of the site, 20 of which are recorded as inactive. The six active records are not considered as a significant contaminative risk to the site as they relate to activities such as dry cleaners and commercial cleaners etc.

4.8.2 Fuel Station Entries

No active fuel station entries are recorded within 500m of the site, the closest being recorded 520m to the west. A single obsolete entry is recorded 318m to the east.

4.8.3 Pollution Incidents / Preventions / Controls & Prosecutions

Three Local Authority Pollution Prevention and Controls are located within 500m of the site. The closest is recorded 322m to the east associated with a Petrol Filling Station, however this is likely to be obsolete as noted in Section 4.8.2.

No pollution Incidents to Controlled Waters are recorded within 250m of the site. The closest is recorded 373m east and is recorded as a Category 3 ‘Minor Incident’ associated with ‘Oils-unknown’.

None of the following are recorded within 500m of the site:

- Integrated Pollution Controls.
- Integrated Pollution Preventions and Controls.
- Local Authority Integrated Pollution Prevention and Control.
- Prosecutions Relating to Controlled Waters.
- Local Authority Pollution Prevention and Control Enforcements.
- Enforcement and Prohibition Notices

4.8.4 Sensitive Land Uses

There are no sensitive land uses within 250m of the site. However, the Thames Estuary is recorded as a Natural England ‘Marine Nature Reserve’ and is located 485m south of the site, which would imply that this record is associated with the southern bank of the River Thames.

4.8.5 Hazardous Substances

No Control of Major Accident Hazard site (COMAH) sites are recorded within 250m. The closest is recorded 417m to the north, is active, and is registered to Transco, and, this is also recorded as the closest Notification of Installations Handling Hazardous Substances (NIHHS) site and the closest Planning Hazardous Substance Consents / Enforcements site.

No Explosive sites are recorded within 1km of the site.

4.9 Unexploded Risk Assessment (UXO) Risk Assessment.

A Preliminary UXO Risk Assessment has been obtained and it is presented in Appendix C. This indicates that there is a medium risk of UXO encounter.

Following the results of the Preliminary UXO Assessment, a Detailed UXO Threat and Risk Assessment has been obtained to quantify the risks posed by UXO's to the development and to determine what, if any, mitigation measures will be required during future intrusive survey work and subsequent construction work.

The Detailed UXO Assessment report is presented as Appendix D and indicates the site is classed as having a Very High Risk of UXO encounter and therefore mitigation measures must be implemented to reduce risk to ALARP (As Low As Reasonably Possible) during any intrusive works as part of any site surveys or subsequent preparatory / enabling works and construction. Table 3 presents the recommended mitigation / control measures to be undertaken during any ground investigation and / or construction works undertaken at the site.

Table 3: UXO Risk Mitigation Actions

Mitigating Action	Implementation
UXO Emergency Response Plan	For any penetrative / excavation works an on-site action plan should be prepared and made available. This response plan should set the required contingency measures and actions that need to be undertaken should a confirmed or suspected UXO be discovered on the site.
UXO Safety and Awareness Briefings	A briefing on the identification of UXO and what actions should be implemented if a hazard is identified should be incorporated into the site's Heath & Safety Plan and pre-start meeting to ensure that ground investigation contractors and groundworkers are adequality informed of the potential risks and how to react if a threat is found.
Non-Intrusive UXO survey and/or (Explosive Ordnance Clearer) EOD Banksman Support	Where 'open' intrusive works are proposed into previously undisturbed ground considered to be within the capabilities of UXO survey geophysical equipment, a non-intrusive geophysical survey should be trialled and if proven successful, should be implemented. If the survey proves ineffective an EOD Engineer should be present in the UXO banksman role to monitor ongoing open intrusive works and to identify any suspicious items that may be UXO related.
Intrusive UXO Survey	Where 'blind' intrusive works into previously undisturbed ground are proposed, an intrusive UXO survey (employing down-hole magnetometer or MagCone techniques) is strongly recommended.

4.10 Summary of Potential Contaminative Sources Affecting the Site

Based upon this desk-based assessment and the site walkover, the following potential sources have been identified on site:

- Made Ground, both associated with the infilling of the former East India Dock, and beneath the wider site associated with the former use as dock transit warehousing.
- Potential for asbestos containing materials (ACMs) or asbestos fibres in the made ground associated with the fabric of the former buildings.

5.0

Preliminary Conceptual Site Model

5.0 Preliminary Conceptual Site Model

5.1 Background Methodology

Reference should be made to the detailed information on the geoenvironmental risk assessment framework and methodology presented in Appendix E.

5.2 Preliminary Conceptual Site Model

A preliminary Conceptual Site Model (CSM) of the site has been generated in the context of existing development proposals and it is outlined in Table 4.

Table 4: Potential Sources, Pathways and Receptors

Potential Sources of Contamination
Made ground (both dock infill and general made ground). Asbestos containing materials. Alluvium. London Clay
Potential Contamination Migration Pathways
Direct Contact Ingestion Inhalation Lateral and vertical migration of ground gasses. Lateral and vertical migration of leachable contaminants or contaminated water.
Potential Contamination Receptors
Site end users. Site construction workers Adjacent site users during construction Water Environment (Thames Estuary)

5.3 Risk Assessment Considerations

Table 5 summarises the key considerations in this risk assessment.

Table 5: Risk Assessment Considerations

Human Health	Given that the proposed development will comprise hard surfacing and buildings, human health risks via inhalation, direct contact or ingestion are likely to be restricted to the construction phase where construction workers, and to a lesser extent adjacent site-users, are the higher risk receptors. The site end users are unlikely to subject to significant exposure post construction via these three pathways. Plausible sources of ground gas exist in the form of deep made ground and organic materials (including peat) within the alluvium.
Built Environment	Plausible sources of ground gas exist in the form of deep made ground and organic materials (including peat) within the alluvium. Sources of compounds (generally oxidizable sulphates) that are aggressive to buried concrete include the made ground, the peat within the alluvial deposits and the London Clay.
Controlled Waters	Given that the former dock wall is likely to be in situ beneath the site, much of the site is likely to be hydraulically separated from the wider water environment. Only the far south eastern extents of the site are likely to be in continuity with the wider water environment and therefore the magnitude of the source is likely to be limited. Additionally, impacts on the water environment are likely to be difficult to quantify given that all the remaining former wet dock area is also infilled.

5.4 Preliminary Risk Assessment

A preliminary risk assessment has been undertaken based on the reviewed information in this report. This is based upon the “source – pathway – receptor” conceptual risk model in accordance with the relevant UK legislation.

Potential sources, pathways and receptors identified as part of the preliminary desk based assessment are presented in Table 6 and a graphical representation is presented in 1016734.DWG.GL.002.

Table 6: Preliminary Risk Assessment

Contaminant Source	Pathway	Receptor	Consequence of Pollutant Linkage	Likelihood of Pollutant Linkage	Overall Risk
Made Ground (dock infill)	1.Ingestion	Site end users	Severe	Unlikely	**Moderate / Low Risk**
		Construction Workers	Severe	Likely	**High Risk**
		Adjacent site users (during construction)	Severe	Unlikely	**Moderate / Low Risk**
	2.Direct Contact	Site end users	Severe	Unlikely	**Moderate / Low Risk**
		Construction Workers	Severe	Likely	**High Risk**
		Adjacent site users (during construction)	Severe	Unlikely	**Moderate / Low Risk**
	3.Inhalation	Site end users	Severe	Unlikely	**Moderate / Low Risk**
		Construction Workers	Severe	Likely	**High Risk**
		Adjacent site users (during construction)	Severe	Low Likelihood	**Moderate Risk**
	4. Lateral & vertical migration of leachable contaminants / contaminated water	Water environment	Medium	High Likelihood	**High Risk**
	5. Lateral & vertical migration of ground gas	Site end users / Built Environment	Severe	Likely	**High Risk**
	6. Direct contact of buried concrete	Built environment	Mild	High Likelihood	**Moderate Risk**
Made Ground (general made ground)	7.Ingestion	Site end users	Severe	Unlikely	**Moderate / Low Risk**
		Construction Workers	Severe	Likely	**High Risk**
		Adjacent site users (during construction)	Severe	Unlikely	**Moderate / Low Risk**
	8.Direct Contact	Site end users	Severe	Unlikely	**Moderate / Low Risk**
		Construction Workers	Severe	Likely	**High Risk**
		Adjacent site users (during construction)	Severe	Unlikely	**Moderate / Low Risk**
	9. Inhalation	Site end users	Severe	Unlikely	**Moderate / Low Risk**
		Construction Workers	Severe	Likely	**High Risk**
		Adjacent site users (during construction)	Severe	Low Likelihood	**Moderate Risk**
	10. Lateral & vertical migration of leachable contaminants / contaminated water	Water environment	Medium	Unlikely	**Low Risk**
	11. Lateral & vertical migration of ground gas	Site end users / Built Environment	Severe	Likely	**High Risk**
	12. Direct contact of buried concrete	Built environment	Mild	High Likelihood	**Moderate Risk**
Alluvium	13. Lateral & vertical migration of ground gas	Site end users / Built Environment	Severe	Likely	**High Risk**
	14. Direct attack of buried concrete	Built environment	Mild	Likely	**Moderate / Low Risk**
London Clay	15. Direct attack of buried concrete	Built environment	Mild	High Likelihood	**Moderate Risk**

6.0

Development Constraints

6.0 Development Constraints

On the basis of the desk based assessment undertaken (including consideration of relevant existing ground investigation both on and near to the site) this Section summarises the anticipated geotechnical and geoenvironmental development constraints.

6.1 UXO Development Constraints

It is known that the former East India Docks was badly damaged during the Second World War. A Detailed UXO Risk Assessment has been obtained and this indicates that there is a very high risk of UXO encounter and the control / mitigation measures detailed in Section 4.9 will be required during both future intrusive survey work and subsequent construction works.

6.2 Geotechnical Development Constraints

Given the anticipated ground conditions and likely structural loads, piled foundations are anticipated to be required along with suspended ground floor slabs

Compounds aggressive to buried concrete may be present and assessment of an appropriate grade of sub-surface concrete will be required.

Relict structures and obstructions may remain in the ground at the site included the northern part of the East India quay wall and relict foundations of any associated infrastructure further north. If present, they may present obstructions to future construction and should be identified and mapped where possible.

It is understood that a basement level is proposed for the new data centre development, the presence of a potentially shallow groundwater table (in hydraulic continuity with the Rivers Lea and Thames) should be considered when undertaking the basement or other deep excavation design

A deeper groundwater table is present within the Lambeth Group confined under sub-artesian pressure by the overlying London Clay. The pezometric head of this water table is at approximately 18m bgl and should be taken into account in scheme design, particularly pile design.

6.3 Geoenvironmental Development Constraints

6.3.1 Human Health & Controlled Waters

It is likely that some of the dock in-fill is associated with dredging from the River Thames, and, based upon the Concept ground investigation close to the site significant contamination (hydrocarbons and heavy metals) is not anticipated from the dock in-fill.

Made ground beneath the areas of the former Transit Sheds has not been quantified however, and it may also contain Asbestos Containing Materials as the Transit Sheds were recorded to be locally clad with such material.

Allowances for working with soils impacted by asbestos fibres or asbestos containing materials should be allowed for.

The majority of the site is hydraulically confined with the former dock wall therefore the risk of the site impacting controlled waters is limited to the risks during piling where contaminated soils could in theory be introduced to the Principal Aquifer(s) beneath the London Clay. Piling methods will need to be designed cognisant of this risk and a Piling Risk Assessment will also be required.

6.3.2 Ground Gas

The made ground materials beneath the site are not wholly quantified and given their thickness and the local presence of organic materials there is a plausible risk of ground gas generation beneath the site.

At this stage allowances for ground gas protection should be made until the risks are fully quantified.

6.3.3 Waste

Although no significant risks were identified to human health in a commercial end use context there remains a risk that soils arising during construction (e.g. for pile or basement excavations) may contain Hazardous Properties and attract elevated rates of disposal. This results from the screening criteria and legislation for waste differing to that for human health and controlled waters.

It is not possible to quantify the amount of soil which may classify as Hazardous without a site-specific investigation and assessment, therefore at this preliminary stage allowances should be made for the disposal of soils that classify as Hazardous.

7.0

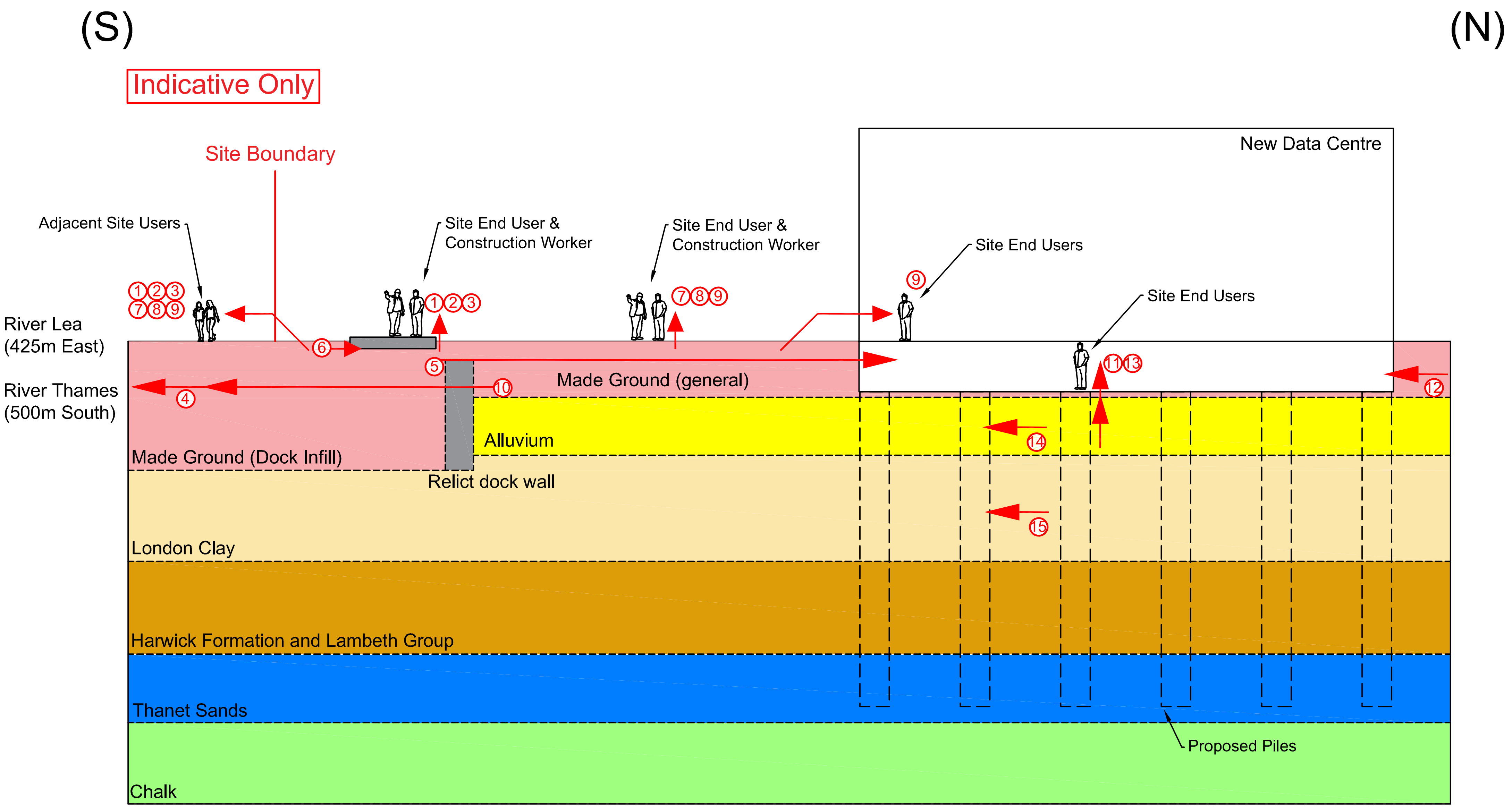
Recommendations for Further Works

7.0 Recommendations for Further Works

An intrusive site investigation to support an interpretive Ground Investigation Report further quantify the risks identified in Section 5 of this report. Although any future site investigation will include geotechnical investigation, this Section will focus on the geoenvironmental requirements only. The intrusive investigation should include the following:

- A geophysical survey to determine the location and extents of the former dock wall in the southern / south-eastern extents of the site.
- The advancement of at least three boreholes either side of the former dock wall to allow both groundwater and ground gas monitoring to take place, and, to allow groundwater sampling for subsequent laboratory assessment to take place.

Drawings


(S)
(N)
Indicative Only
Site Boundary
Adjacent Site Users
Site End User & Construction Worker
Site End User & Construction Worker
New Data Centre
Site End Users
Site End Users
River Lea (425m East)
River Thames (500m South)
①②③
⑦⑧⑨
①②③
⑦⑧⑨
⑨
⑪⑬
⑥
⑤
④
⑩
⑫
⑭
⑮
Made Ground (general)
Made Ground (Dock Infill)
Alluvium
Relict dock wall
London Clay
Harwick Formation and Lambeth Group
Thanet Sands
Proposed Piles
Chalk

Contaminant Source	Pathway	Receptor	Consequence of Pollutant Linkage	Likelihood of Pollutant Linkage	Overall Risk
Made Ground (dock infill)	1.Ingestion	Site end users	Severe	Unlikely	Moderate / Low Risk
		Construction Workers	Severe	Likely	High Risk
		Adjacent site users (during construction)	Severe	Unlikely	Moderate / Low Risk
	2.Direct Contact	Site end users	Severe	Unlikely	Moderate / Low Risk
		Construction Workers	Severe	Likely	High Risk
		Adjacent site users (during construction)	Severe	Unlikely	Moderate / Low Risk
	3.Inhalation	Site end users	Severe	Unlikely	Moderate / Low Risk
		Construction Workers	Severe	Likely	High Risk
		Adjacent site users (during construction)	Severe	Low Likelihood	Moderate Risk
	4. Lateral & vertical migration of leachable contaminants / contaminated water	Water environment	Medium	High Likelihood	High Risk
	5. Lateral & vertical migration of ground gas	Site end users / Built Environment	Severe	Likely	High Risk
	6. Direct contact of buried concrete	Built environment	Mild	High Likelihood	Moderate Risk
Made Ground (general made ground)	7.Ingestion	Site end users	Severe	Unlikely	Moderate / Low Risk
		Construction Workers	Severe	Likely	High Risk
		Adjacent site users (during construction)	Severe	Unlikely	Moderate / Low Risk
	8.Direct Contact	Site end users	Severe	Unlikely	Moderate / Low Risk
		Construction Workers	Severe	Likely	High Risk
		Adjacent site users (during construction)	Severe	Unlikely	Moderate / Low Risk
	9. Inhalation	Site end users	Severe	Unlikely	Moderate / Low Risk
		Construction Workers	Severe	Likely	High Risk
		Adjacent site users (during construction)	Severe	Low Likelihood	Moderate Risk
	10. Lateral & vertical migration of leachable contaminants / contaminated water	Water environment	Medium	Unlikely	Low Risk
	11. Lateral & vertical migration of ground gas	Site end users / Built Environment	Severe	Likely	High Risk
	12. Direct contact of buried concrete	Built environment	Mild	High Likelihood	Moderate Risk
Alluvium	13. Lateral & vertical migration of ground gas	Site end users / Built Environment	Severe	Likely	High Risk
	14. Direct attack of buried concrete	Built environment	Mild	Likely	Moderate / Low Risk
London Clay	15. Direct attack of buried concrete	Built environment	Mild	High Likelihood	Moderate Risk

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1016734 A3

DO NOT SCALE FROM THIS DRAWING

Notes

This Preliminary Conceptual Site Model is based upon the "Source - Pathway - Receptor" linkages identified by this report.

- ■ Made Ground
- ■ Alluvium
- ■ London Clay
- ■ Harwick Formation and Lambeth Group
- ■ Thanet Sands
- ■ Chalk
- ↘① Potential Pollutant Linkage
- – – – Inferred Strata Boundary

Issue	Date	Description	By	Chkd	Verfd
A	03/08/18	Updated For Planning	LB	KM	KM
-	11/04/18	For Planning	RK	DS	JA

Project
Project - T
Plot 3 Coriander Avenue

Client
Telehouse International Corporation of Europe Ltd.

Architect
Nicholas Webb Architects plc

Title
Conceptual Site Model (CSM)

Drawing No.	Drawing Status
1016734.GL.DWG.001	Final
Job No.	Scale
1016734	NTS

Originator	Checked	Verified	Issue.
LB	KM	KM	A

CUNDALL

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Gosforth,
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Telephone: +44 (0)191 213 1515

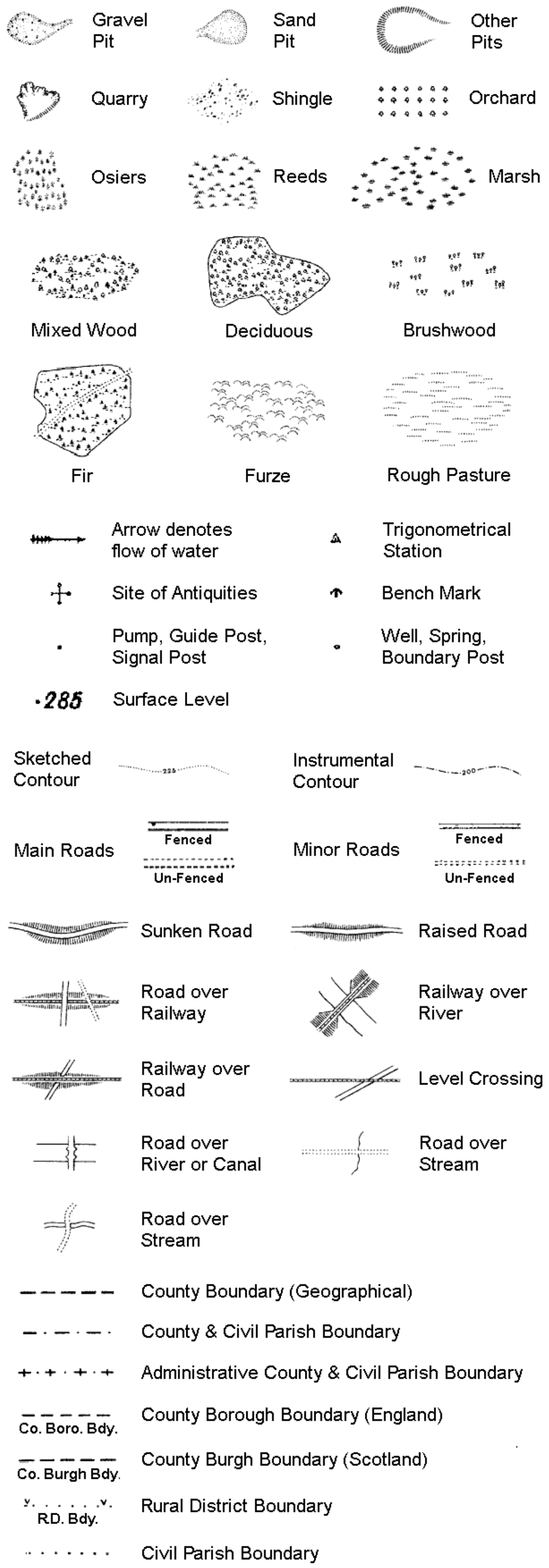
Website: www.cundall.com

Appendices

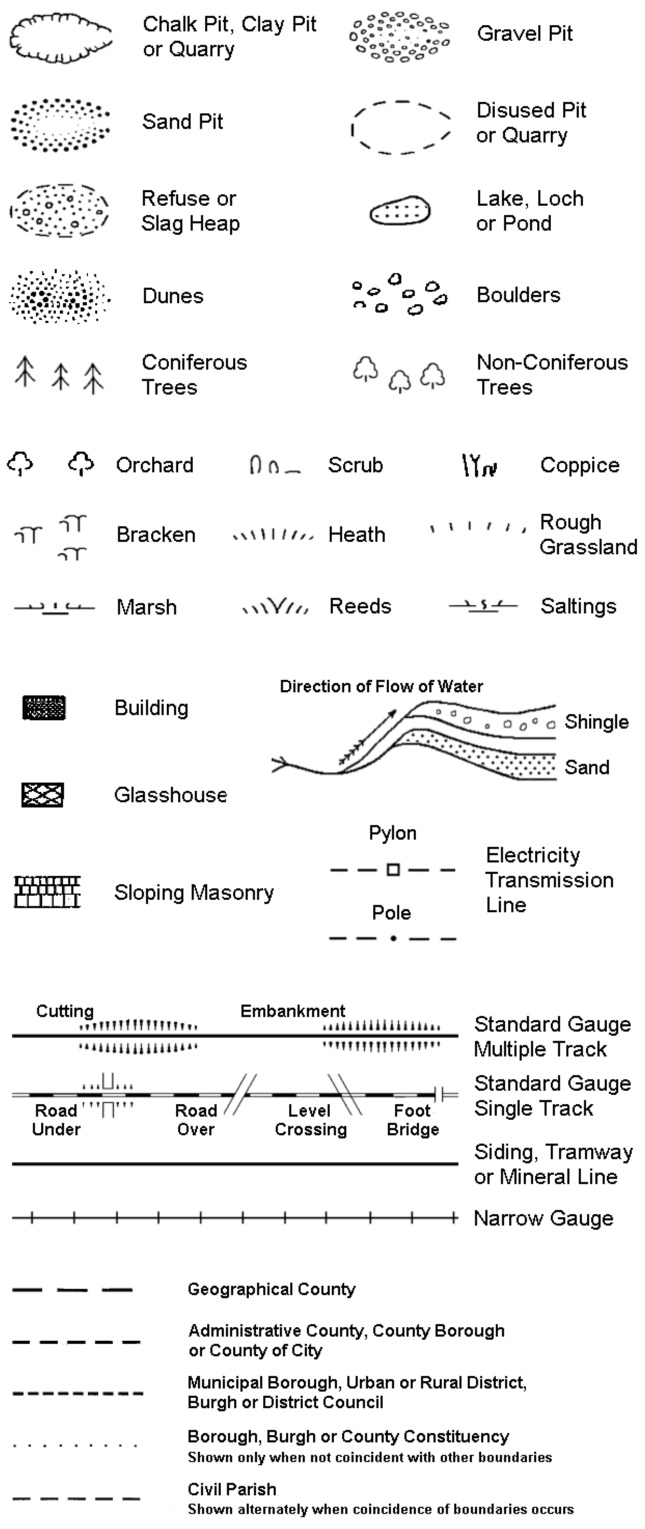
Appendix A: Historical Maps

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

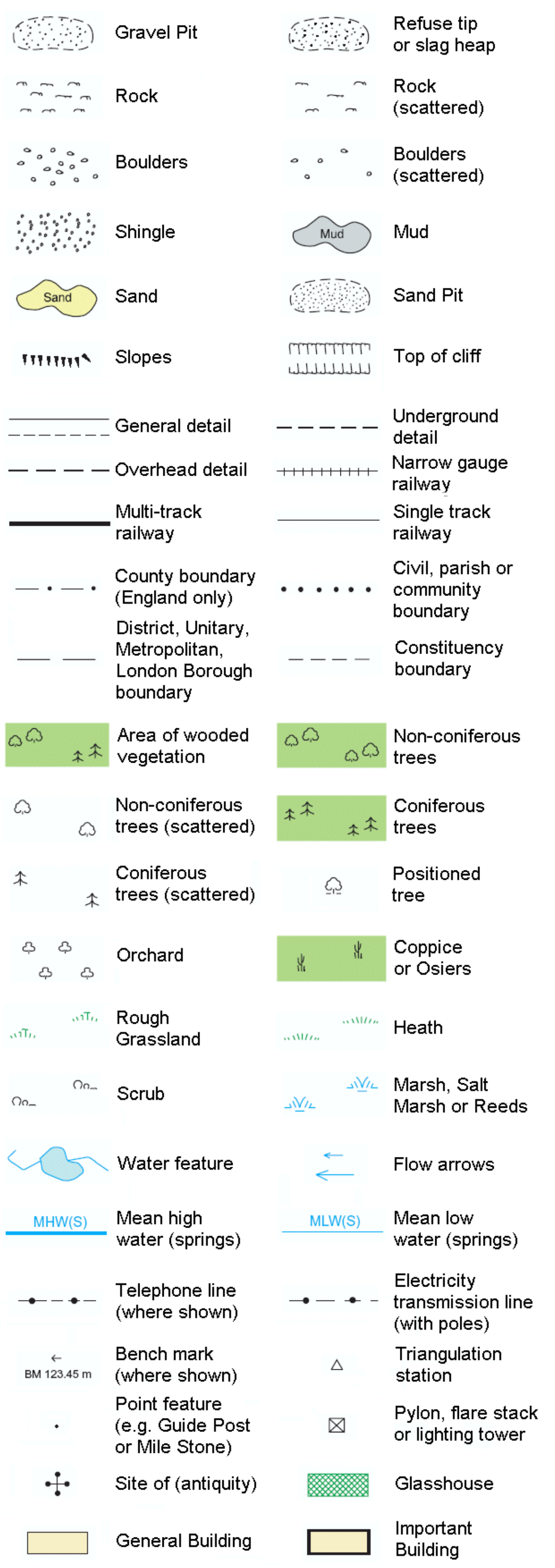

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285
Surface Level
Sketched Contour
225
Instrumental Contour
200
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy.
County Borough Boundary (England)
Co. Burgh Bdy.
County Burgh Boundary (Scotland)
R.D. Bdy.
Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000


Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Electricity Transmission Line
Pole
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

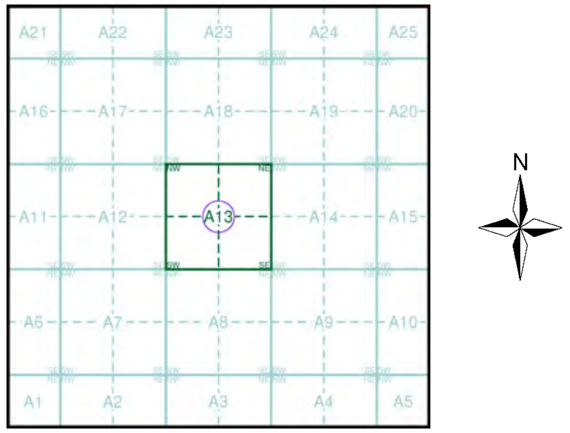

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S)
Mean high water (springs)
MLW(S)
Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m
Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

Envirocheck®
LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Middlesex	1:10,560	1873 - 1882	3
Essex	1:10,560	1873	4
Surrey	1:10,560	1880	5
London	1:10,560	1896	6
Essex	1:10,560	1898 - 1899	7
Surrey	1:10,560	1898	8
Kent	1:10,560	1899	9
Essex	1:10,560	1920	10
London	1:10,560	1920	11
London	1:10,560	1938	12
Essex	1:10,560	1938	13
Ordnance Survey Plan	1:10,000	1940 - 1951	14
Historical Aerial Photography	1:10,560	1948 - 1949	15
Ordnance Survey Plan	1:10,000	1955	16
Ordnance Survey Plan	1:10,000	1965 - 1967	17
Ordnance Survey Plan	1:10,000	1974 - 1975	18
Ordnance Survey Plan	1:10,000	1981 - 1982	19
London	1:25,000	1985	20
Ordnance Survey Plan	1:10,000	1990	21
Ordnance Survey Plan	1:10,000	1995	22
10K Raster Mapping	1:10,000	1999	23
10K Raster Mapping	1:10,000	2006	24
VectorMap Local	1:10,000	2018	25

Historical Map - Slice A


A21
A22
A23
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A12
A13
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A15
A6
A7
A8
A9
A10
A1
A2
A3
A4
A5
NW
NE
SW
SE
N

Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
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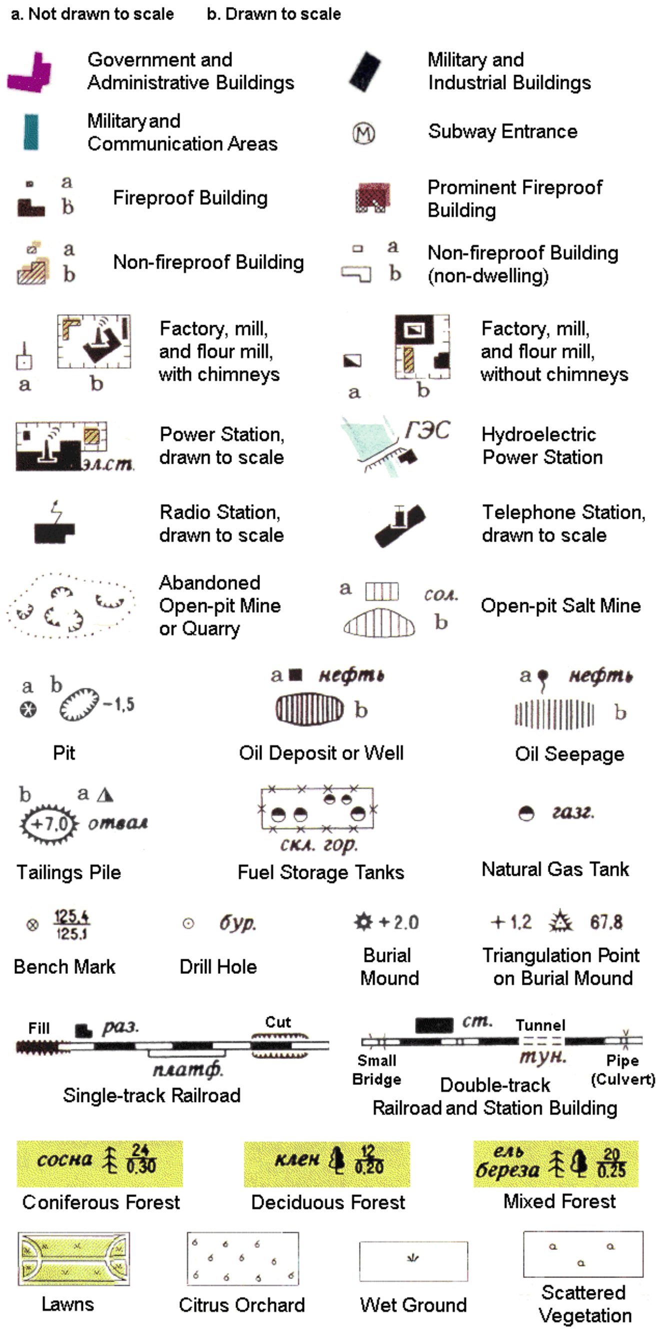
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

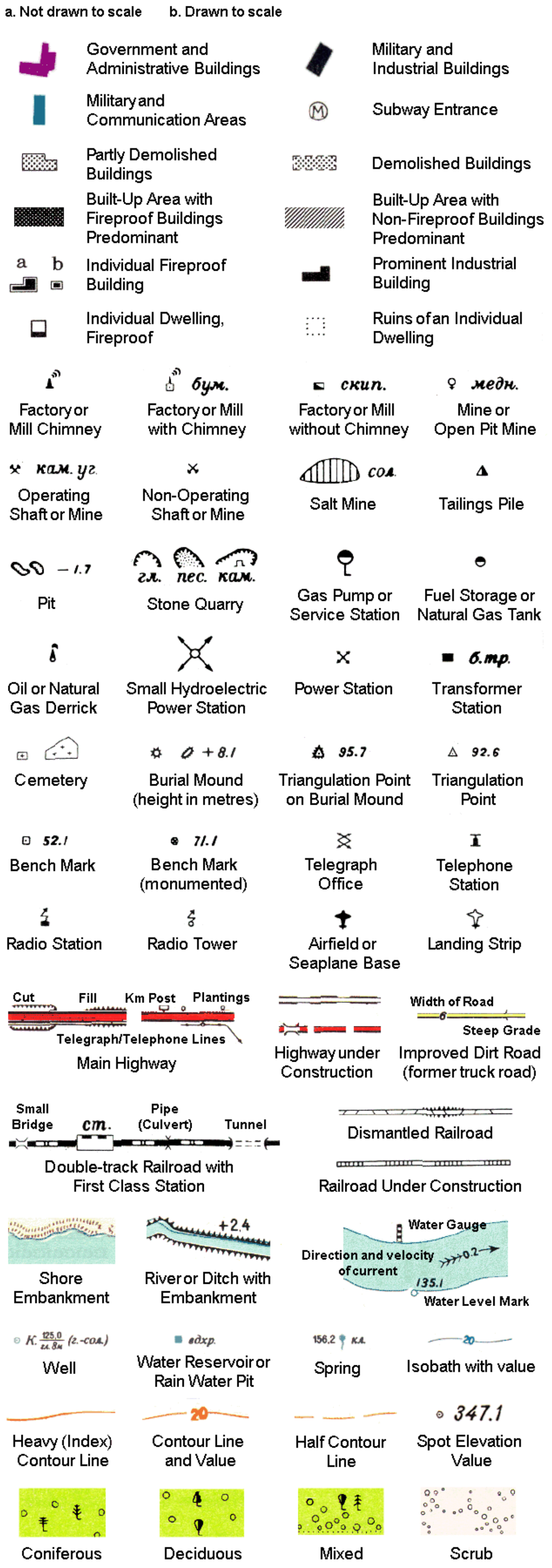

a. Not drawn to scale
b. Drawn to scale
Government and Administrative Buildings
Military and Industrial Buildings
Military and Communication Areas
Subway Entrance
a
b
Fireproof Building
Prominent Fireproof Building
a
b
Non-fireproof Building
a
b
Non-fireproof Building (non-dwelling)
a
b
Factory, mill, and flour mill, with chimneys
a
b
Factory, mill, and flour mill, without chimneys
эл.ст.
Power Station, drawn to scale
ГЭС
Hydroelectric Power Station
Radio Station, drawn to scale
Telephone Station, drawn to scale
Abandoned Open-pit Mine or Quarry
a
соль
b
Open-pit Salt Mine
a
b
−1,5
Pit
a
нефть
b
Oil Deposit or Well
a
нефть
b
Oil Seepage
b
a
+7,0
отвал
Tailings Pile
скл. гор.
Fuel Storage Tanks
газг.
Natural Gas Tank
125,4
125,1
Bench Mark
бур.
Drill Hole
+ 2.0
Burial Mound
+ 1,2
67,8
Triangulation Point on Burial Mound
Fill
раз.
Cut
платф.
Single-track Railroad
ст.
Tunnel
Small Bridge
тун.
Pipe (Culvert)
Double-track Railroad and Station Building
сосна
24
0,30
Coniferous Forest
клен
12
0,20
Deciduous Forest
ель
береза
20
0,25
Mixed Forest
Lawns
Citrus Orchard
Wet Ground
Scattered Vegetation

243,8	Values for prominent elevations
186,0	Numbers for spot elevations, depth soundings, contour lines, etc.
0,2	Velocity of the current, width of river bed, depth of river
$\frac{180}{12}$ $\frac{180}{12}$	Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (–)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping


a. Not drawn to scale
b. Drawn to scale
Government and Administrative Buildings
Military and Industrial Buildings
Military and Communication Areas
Subway Entrance
Partly Demolished Buildings
Demolished Buildings
Built-Up Area with Fireproof Buildings Predominant
Built-Up Area with Non-Fireproof Buildings Predominant
a
b
Individual Fireproof Building
Prominent Industrial Building
Individual Dwelling, Fireproof
Ruins of an Individual Dwelling
Factory or Mill Chimney
бум.
Factory or Mill with Chimney
скип.
Factory or Mill without Chimney
медн.
Mine or Open Pit Mine
кам. уг.
Operating Shaft or Mine
Non-Operating Shaft or Mine
соль
Salt Mine
Tailings Pile
− 1.7
Pit
гл.
пес.
кам.
Stone Quarry
Gas Pump or Service Station
Fuel Storage or Natural Gas Tank
Oil or Natural Gas Derrick
Small Hydroelectric Power Station
Power Station
б.тр.
Transformer Station
Cemetery
+ 8.1
Burial Mound (height in metres)
95.7
Triangulation Point on Burial Mound
92.6
Triangulation Point
52.1
Bench Mark
71.1
Bench Mark (monumented)
Telegraph Office
Telephone Station
Radio Station
Radio Tower
Airfield or Seaplane Base
Landing Strip
Cut
Fill
Km Post
Plantings
Telegraph/Telephone Lines
Main Highway
Highway under Construction
Width of Road
6
Steep Grade
Improved Dirt Road (former truck road)
Small Bridge
ст.
Pipe (Culvert)
Tunnel
Double-track Railroad with First Class Station
Dismantled Railroad
Railroad Under Construction
Shore Embankment
+2.4
River or Ditch with Embankment
Water Gauge
Direction and velocity of current
0.2
135.1
Water Level Mark
К. 125.0 / гл. 8м (г.-соль)
Well
вдхр.
Water Reservoir or Rain Water Pit
156.2
кл.
Spring
20
Isobath with value
Heavy (Index) Contour Line
20
Contour Line and Value
Half Contour Line
347.1
Spot Elevation Value
Coniferous
Deciduous
Mixed
Scrub

Key to Numbers on Mapping

TQ38_London

No.	Description
86	Factory (Gas)
177	Factory (Ship Building)
363	Power Station (Thermo-Electric)
365	Power Station (Thermo-Electric)

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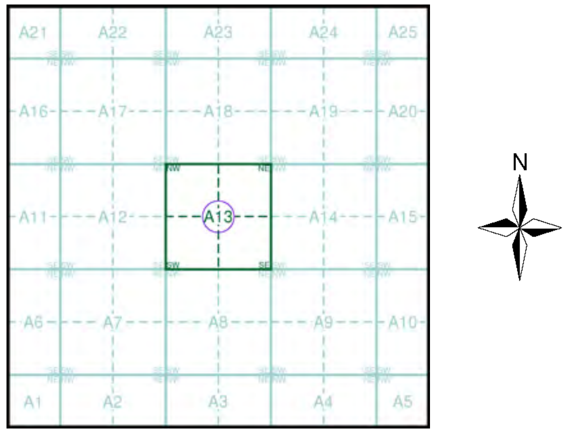
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Middlesex	1:10,560	1873 - 1882	3
Essex	1:10,560	1873	4
Surrey	1:10,560	1880	5
London	1:10,560	1896	6
Essex	1:10,560	1898 - 1899	7
Surrey	1:10,560	1898	8
Kent	1:10,560	1899	9
Essex	1:10,560	1920	10
London	1:10,560	1920	11
London	1:10,560	1938	12
Essex	1:10,560	1938	13
Ordnance Survey Plan	1:10,000	1940 - 1951	14
Historical Aerial Photography	1:10,560	1948 - 1949	15
Ordnance Survey Plan	1:10,000	1955	16
Ordnance Survey Plan	1:10,000	1965 - 1967	17
Ordnance Survey Plan	1:10,000	1974 - 1975	18
Ordnance Survey Plan	1:10,000	1981 - 1982	19
London	1:25,000	1985	20
Ordnance Survey Plan	1:10,000	1990	21
Ordnance Survey Plan	1:10,000	1995	22
10K Raster Mapping	1:10,000	1999	23
10K Raster Mapping	1:10,000	2006	24
VectorMap Local	1:10,000	2018	25

Russian Map - Slice A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A2
A3
A4
A5
N

Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

- Quarry
- Gravel Pit
- Sand Pit
- Clay Pit
- Shingle
- Refuse Heap
- Sloping Masonry
- Flat Rock
- Marsh
- Reeds
- Osiers
- Rough Pasture
- Furze
- Wood
- Mixed Wood
- Brushwood
- Orchard
- Fir
- Ford
- Stepping Stones
- Ferry
- Waterfall
- Lock
- Trig. Station
- 507 Altitude at Trig. Station
- B.M.325·9 Bench Mark
- 342 Surface Level
- Arrow denotes flow of water
- Antiquities (site of)
- Cutting
- Embankment
- Railway crossing Road
- Level Crossing
- Road crossing Railway
- Railway crossing River or Canal
- Road over single stream
- Road over River or Canal

B.R.

- County Boundary (Geographical)
- County & Civil Parish Boundary
- Administrative County & Civil Parish Boundary
- Co. Boro. Bdy. County Borough Boundary (England)
- Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	*P.C.B*	Police Call Box
B.R.	Bridle Road	*P*	Pump
E.P	Electricity Pylon	*S.P*	Signal Post
F.B.	Foot Bridge	*Sl.*	Sluice
F.P.	Foot Path	*Sp.*	Spring
G.P	Guide Post or Board	*T.C.B*	Telephone Call Box
M.S	Mile Stone	*Tr.*	Trough
M.P M.R	Mooring Post or Ring	*W*	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

- or Inactive Quarry, Chalk Pit or Clay Pit
- Active Quarry, Chalk Pit or Clay Pit
- Rock
- Boulders
- Cliff
- Slopes (Top)
- Roofed Building
- Glazed Roof Building
- Top Sloping Masonry
- Archway
- Non-Coniferous Tree (surveyed)
- Coniferous Tree (surveyed)
- Non-Coniferous Trees (not surveyed)
- Coniferous Trees (not surveyed)
- Orchard Tree
- Scrub
- Bracken
- Coppice, Osier
- Reeds
- Marsh, Saltings
- Rough Grassland
- Heath
- Culvert
- Direction of water flow
- B M Bench Mark
- Antiquity (site of)
- Cave Entrance
- Triangulation Station
- Electricity Pylon
- ETL Electricity Transmission Line
- County Boundary (Geographical)
- County & Civil Parish Boundary
- Civil Parish Boundary
- Admin. County or County Bor. Boundary
- L B Bdy London Borough Boundary
- FF RH Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250

- Cliff
- Slopes (Top)
- Rock
- Rock (scattered)
- Boulders
- Boulders (scattered)
- Positioned Boulder
- Scree
- Non-Coniferous Tree (surveyed)
- Coniferous Tree (surveyed)
- Non-Coniferous Trees (not surveyed)
- Coniferous Trees (not surveyed)
- Orchard Tree
- Scrub
- Bracken
- Coppice, Osier
- Reeds
- Marsh, Saltings
- Rough Grassland
- Heath
- Culvert
- Direction of water flow
- Triangulation Station
- Antiquity (site of)
- ETL Electricity Transmission Line
- Electricity Pylon
- BM 231.60m Bench Mark
- Buildings with Building Seed
- Roofed Building
- Glazed Roof Building
- Civil parish/community boundary
- District boundary
- County boundary
- Boundary post/stone
- Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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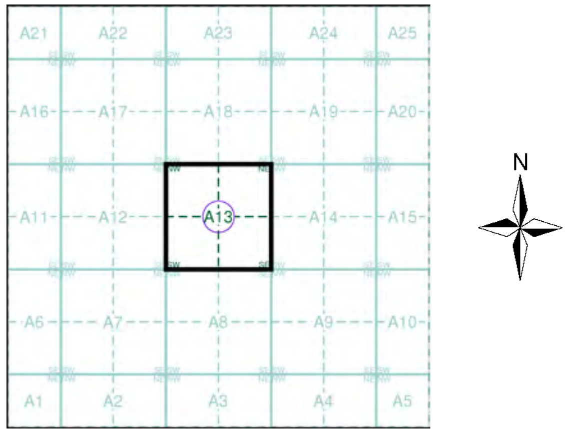
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
London	1:2,500	1869	2
London	1:2,500	1896	3
Essex	1:2,500	1916	4
Historical Aerial Photography	1:1,250	1946 - 1947	5
Ordnance Survey Plan	1:1,250	1949 - 1950	6
Ordnance Survey Plan	1:2,500	1951 - 1952	7
Ordnance Survey Plan	1:1,250	1951 - 1962	8
Ordnance Survey Plan	1:2,500	1954 - 1964	9
Ordnance Survey Plan	1:1,250	1955 - 1971	10
Ordnance Survey Plan	1:2,500	1964	11
Ordnance Survey Plan	1:1,250	1969	12
Supply of Unpublished Survey Information	1:1,250	1974	13
Additional SIMs	1:1,250	1977	14
Large-Scale National Grid Data	1:1,250	1991	15
Large-Scale National Grid Data	1:1,250	1991 - 1992	16
Large-Scale National Grid Data	1:1,250	1992 - 1995	17
Large-Scale National Grid Data	1:1,250	1992	18
Large-Scale National Grid Data	1:1,250	1992 - 1993	19
Large-Scale National Grid Data	1:1,250	1993 - 1994	20
Large-Scale National Grid Data	1:1,250	1994	21
Large-Scale National Grid Data	1:1,250	1996	22
Historical Aerial Photography	1:2,500	1999	23

Historical Map - Segment A13



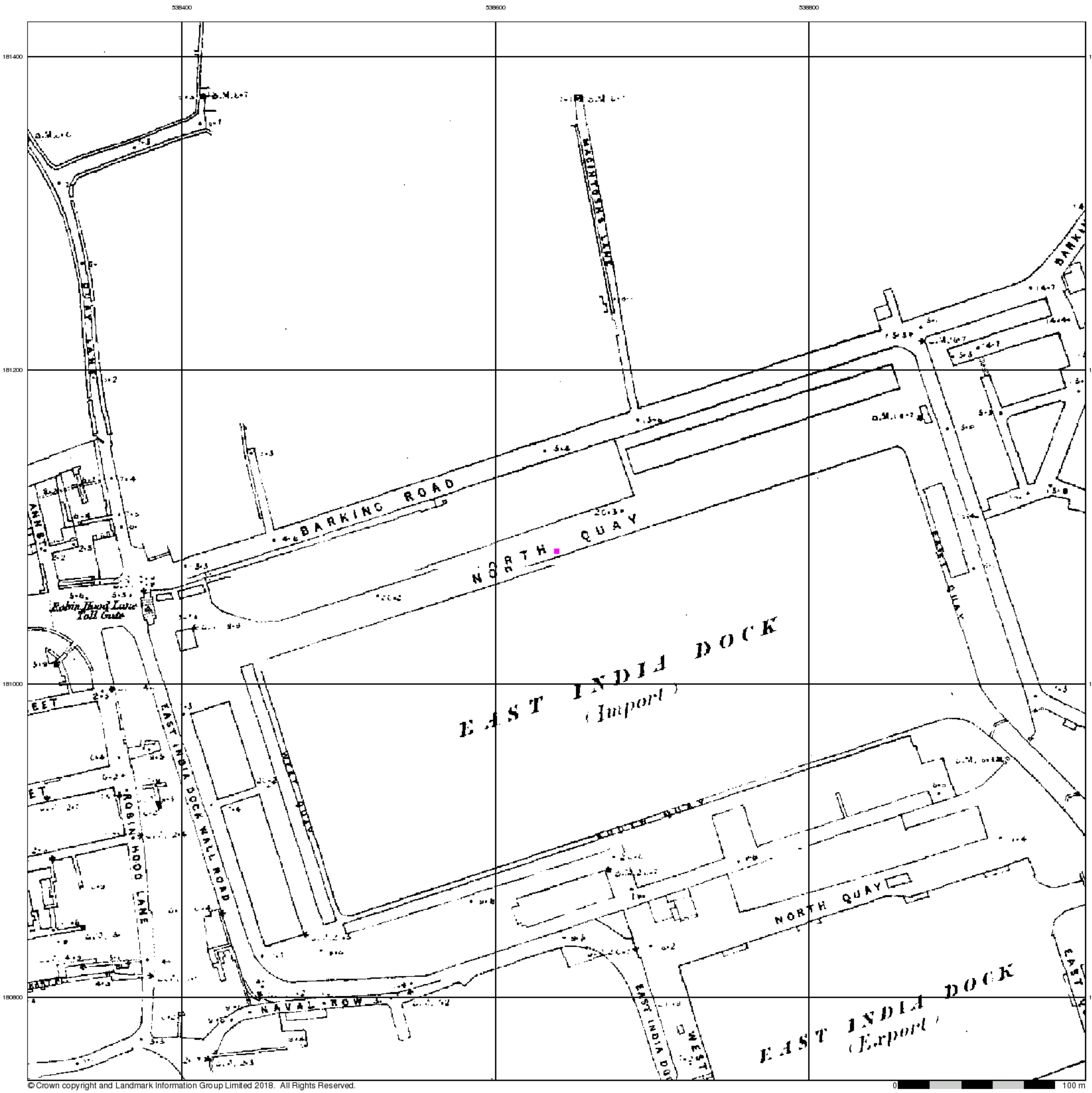
Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Coriander Avenue, London

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk


538400
538600
538800
181400
181200
181000
180800
BARKING ROAD
NORTH QUAY
EAST INDIA DOCK
(Import)
EAST INDIA DOCK
(Export)
EAST INDIA DOCK WALL ROAD
ROBIN HOOD LANE
Robin Hood Lane Toll Gate
NAVAL ROW
EAST QUAY
WEST QUAY
SOUTH QUAY
NORTH QUAY
0
100 m

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Envirocheck®

LANDMARK INFORMATION GROUP®

London

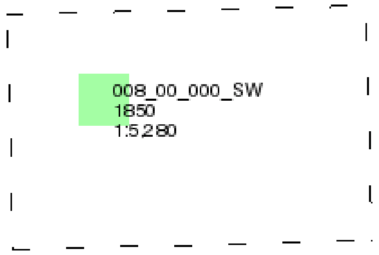
Published 1850

Source map scale - 1:5,280

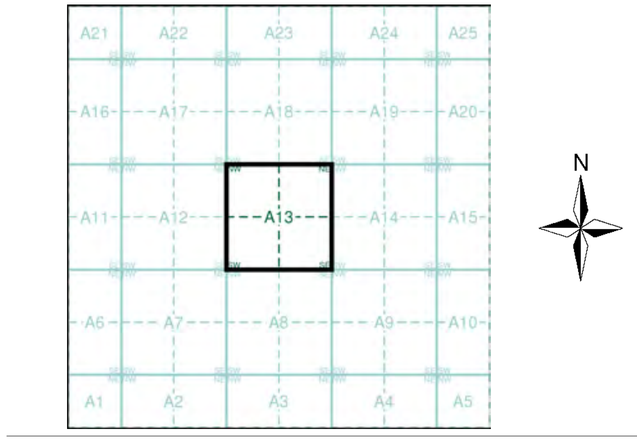
The historical town plans shown derive from Ordnance Survey mapping from the early to mid 1850s. The 1:2640 scale was introduced in the early 1850s, to survey districts covered by the Local Boards of Health and for a map of the Osborne Estate of Queen Victoria. The general style is similar to that of the early 1:2500s published shortly afterwards.
1:5280 scale was surveyed shortly afterwards in the mid 1850s as general purpose mapping with a standard of content similar to the more contemporary 1:10.560 mapping. The scale was also used for a reduction of the 1:1056 'skeleton survey' of London that was undertaken between 1848 and 1850.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)


008_00_000_SW
1850
1:5280

Historical Town Plan - Segment A13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A3
A4
A5
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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	0

Site Details

Coriander Avenue, London

Landmark
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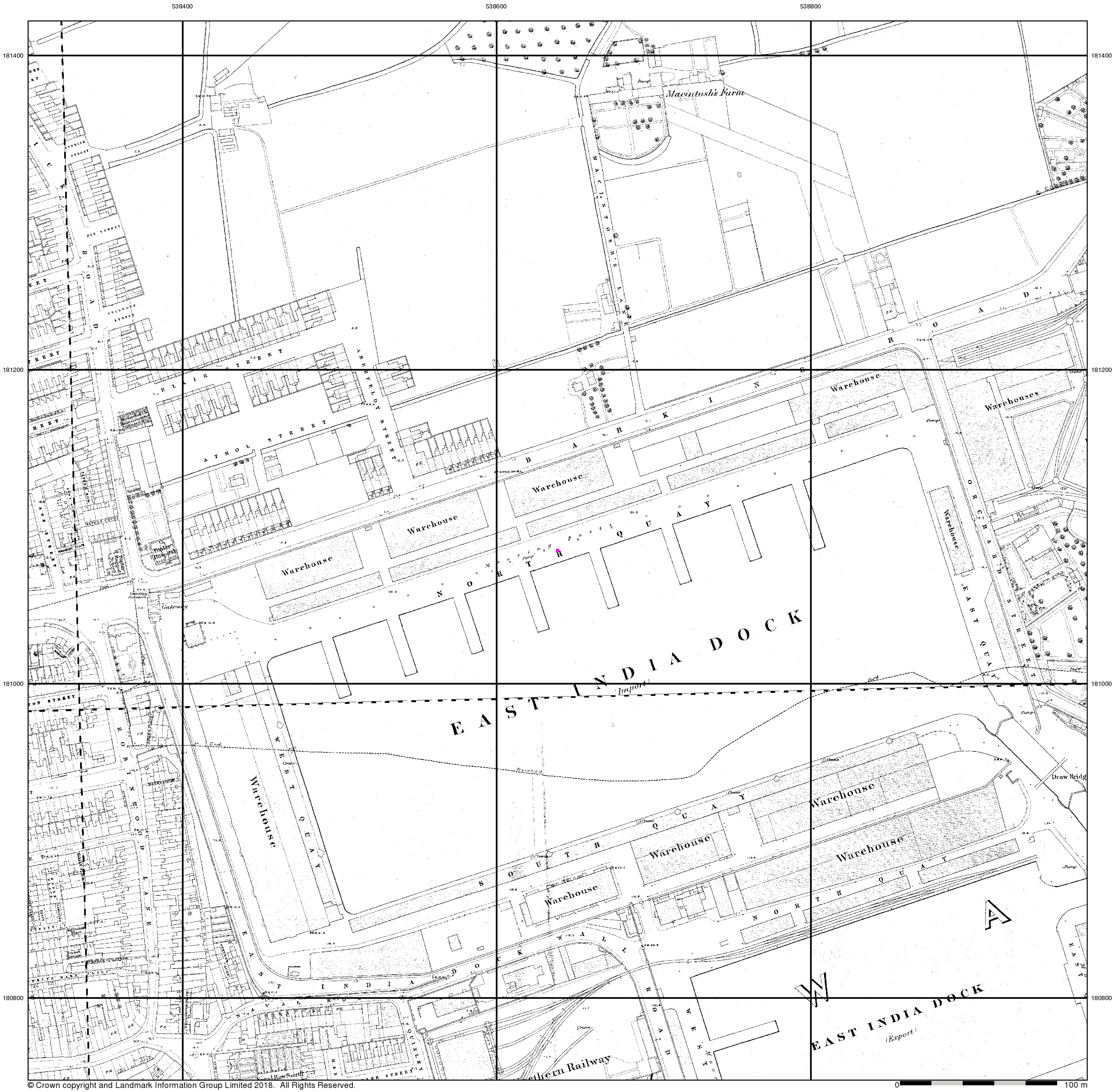
538400
538600
538800
181400
181200
181000
180800
Macintosh's Farm
Pump
MACINTOSH'S LANE
BARKING ROAD
BLAIR STREET
ATHOL STREET
ABERFELDY STREET
Warehouse
Warehouses
NORTH QUAY
EAST INDIA DOCK
(Import)
WEST QUAY
SOUTH QUAY
ORCHARD STREET
EAST QUAY
Gateway
Crane
Draw Bridg
EAST INDIA DOCK WALL ROAD
EAST INDIA DOCK
(Export)
A
W
0
100 m

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Envirocheck®

LANDMARK INFORMATION GROUP®

London

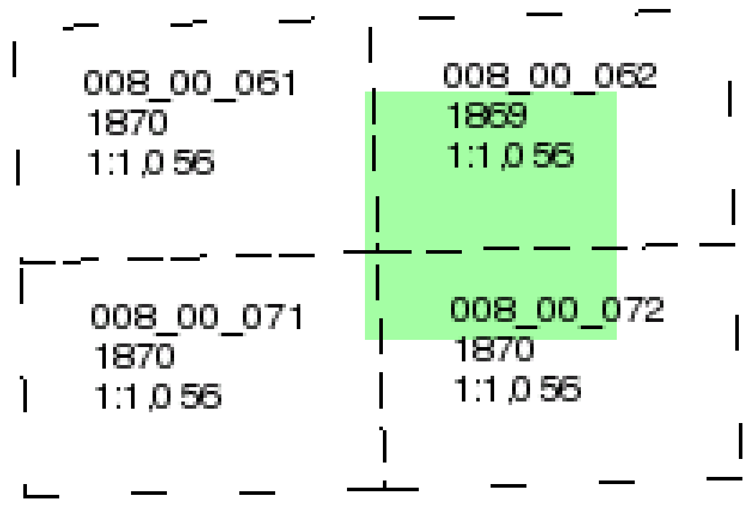
Published 1869 - 1870

Source map scale - 1:1,056

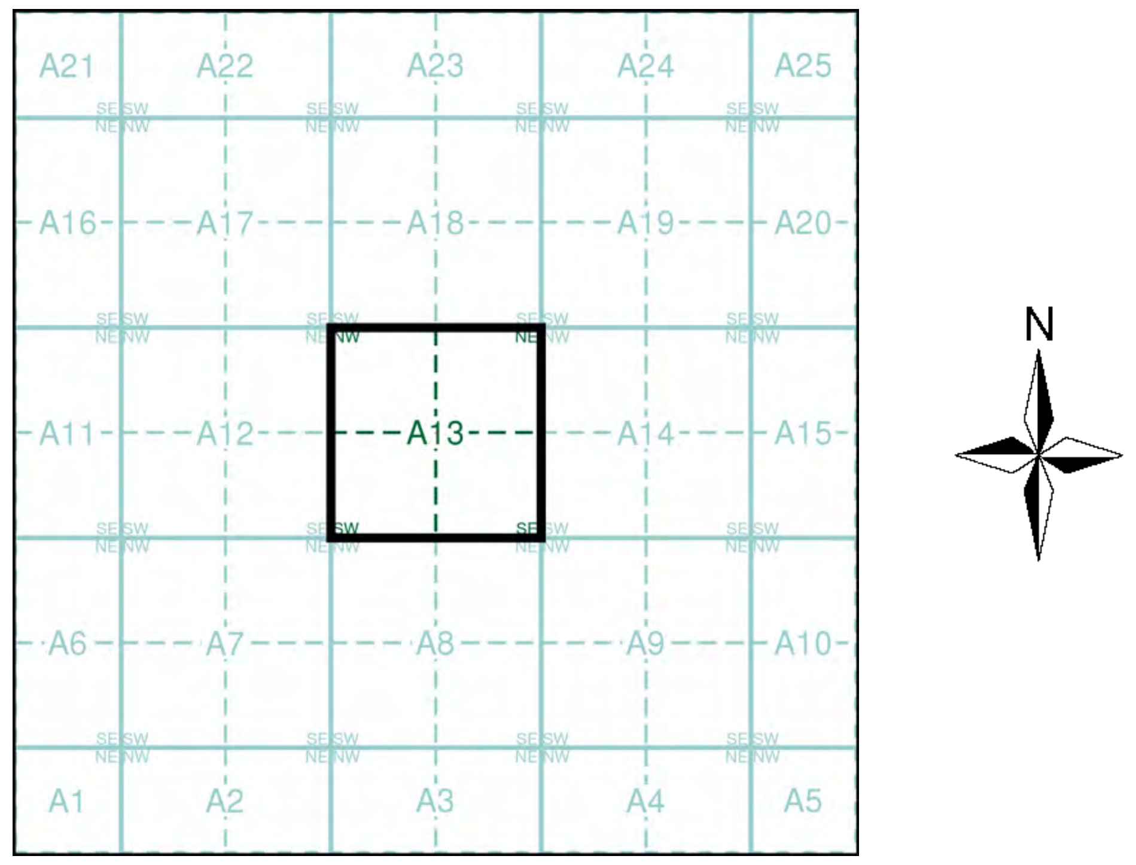
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)


008_00_061
1870
1:1,056
008_00_062
1869
1:1,056
008_00_071
1870
1:1,056
008_00_072
1870
1:1,056

Historical Town Plan - Segment A13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A5
N

Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	0

Site Details

Coriander Avenue, London

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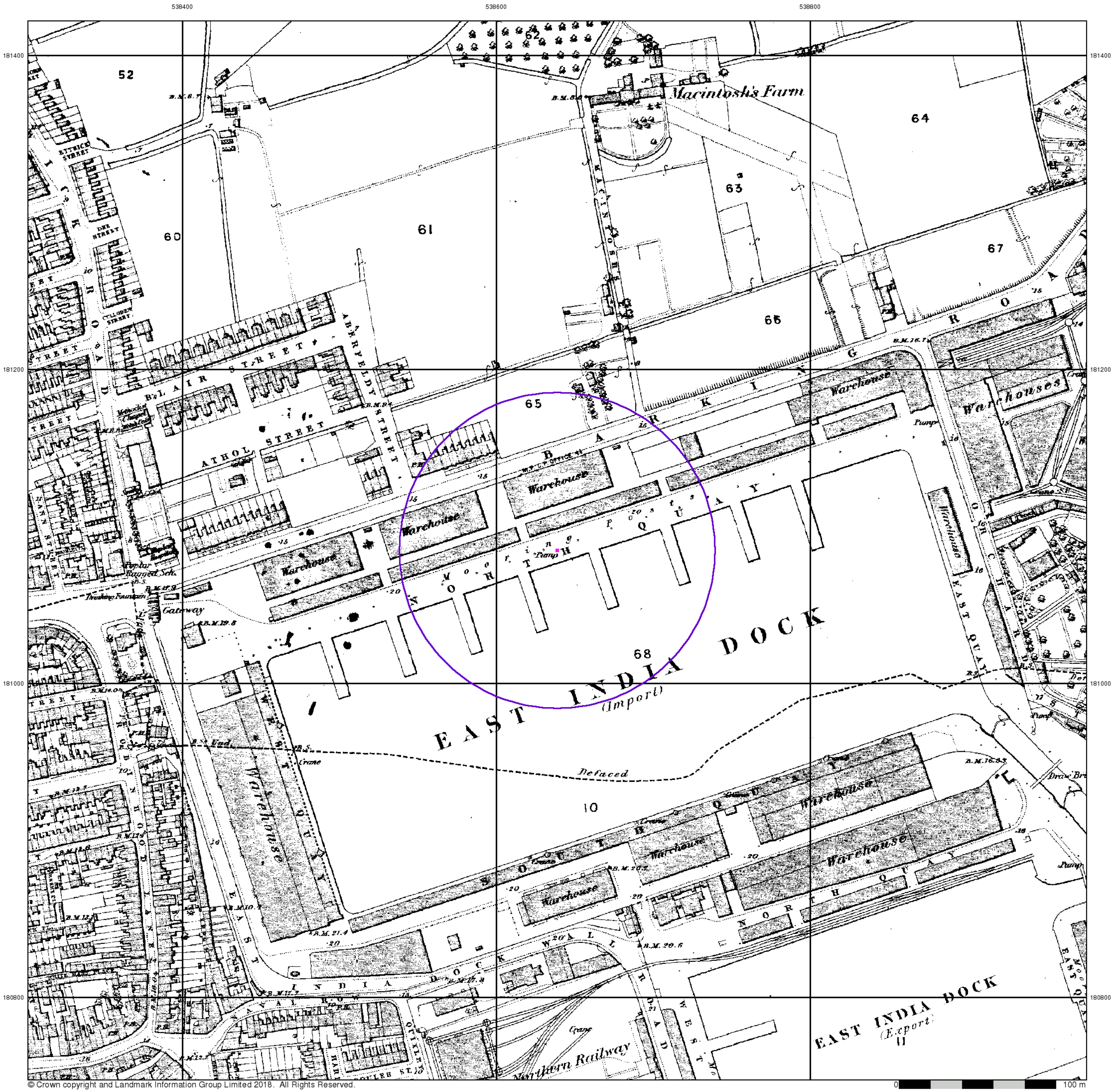
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

A Landmark Information Group Service v50.0 21-Feb-2018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538600
538800
181400
181200
181000
180800
52
62
Macintosh's Farm
64
60
61
63
67
66
65
68
10
Ettrick Street
Dee Street
Culloden Street
Blair Street
Athol Street
Abbeyfeldy Street
Poplar Ragged Sch.
Drinking Fountain
Gateway
Warehouse
Warehouses
North Quay
East India Dock (Import)
Defaced
West Quay
East Quay
South Quay
East India Dock Road
Wall
East India Dock (Export)
Northern Railway
Crane
Pump
Draw Bri
0
100 m

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Envirocheck®

LANDMARK INFORMATION GROUP®

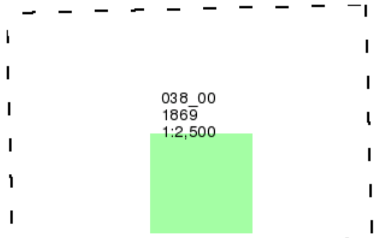
London

Published 1869

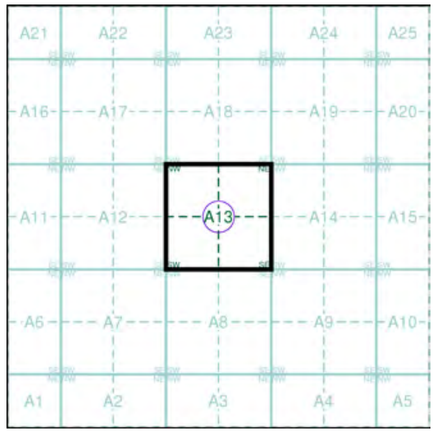
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)


038_00
1869
1:2,500

Historical Map - Segment A13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A5
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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

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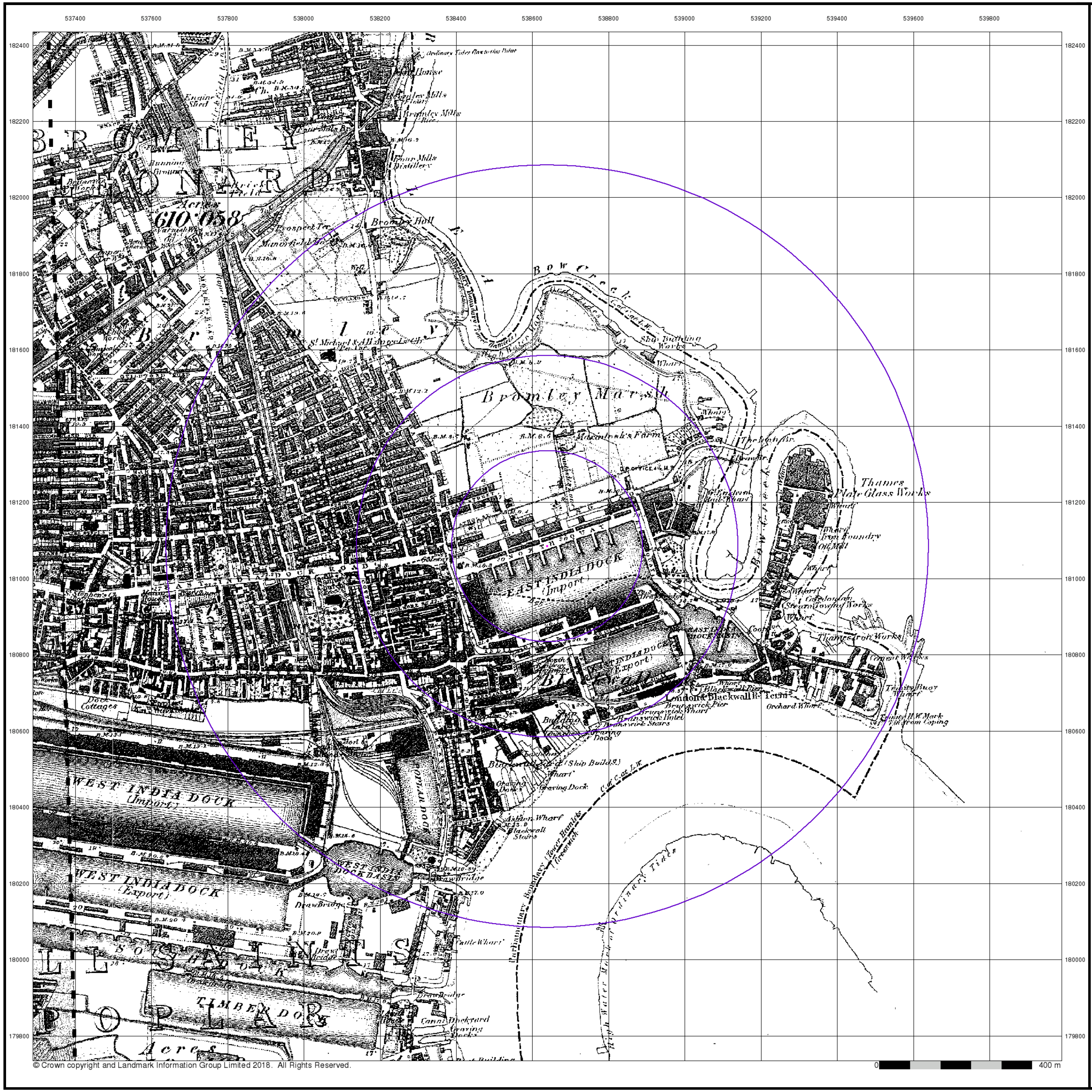
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182400
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182000
181800
181600
181400
181200
181000
180800
180600
180400
180200
180000
179800
BROMLEY
Bromley Hall
Bow Creek
Bromley Marsh
Macintosh's Farm
EAST INDIA DOCK (Import)
EAST INDIA DOCK (Export)
WEST INDIA DOCK (Import)
WEST INDIA DOCK (Export)
WEST INDIA DOCK BASIN
TIMBER DOCK
ALL SAINTS
POPLAR
Thames Plate Glass Works
Thames Iron Works
Iron Foundry
Oil Mill
Cement Works
Trinity Buoy Wharf
Orchard Wharf
Brunswick Pier
Brunswick Wharf
Brunswick Hotel
Blackwall Stairs
Graving Dock
Ship Building
Ship Building Works
Flour Mills
Distillery
St. Michael & All Angels Ch.
610·058 Acres
Ordinary Tides
0
400 m

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LANDMARK INFORMATION GROUP®

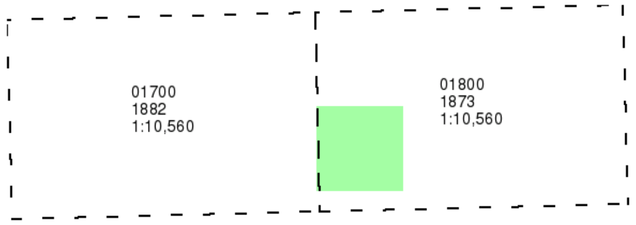
Middlesex

Published 1873 - 1882

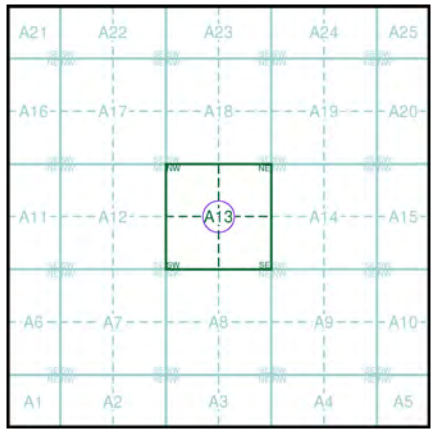
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)


01700
1882
1:10,560
01800
1873
1:10,560

Historical Map - Slice A


A21
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A1
A2
A3
A4
A5

N

Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

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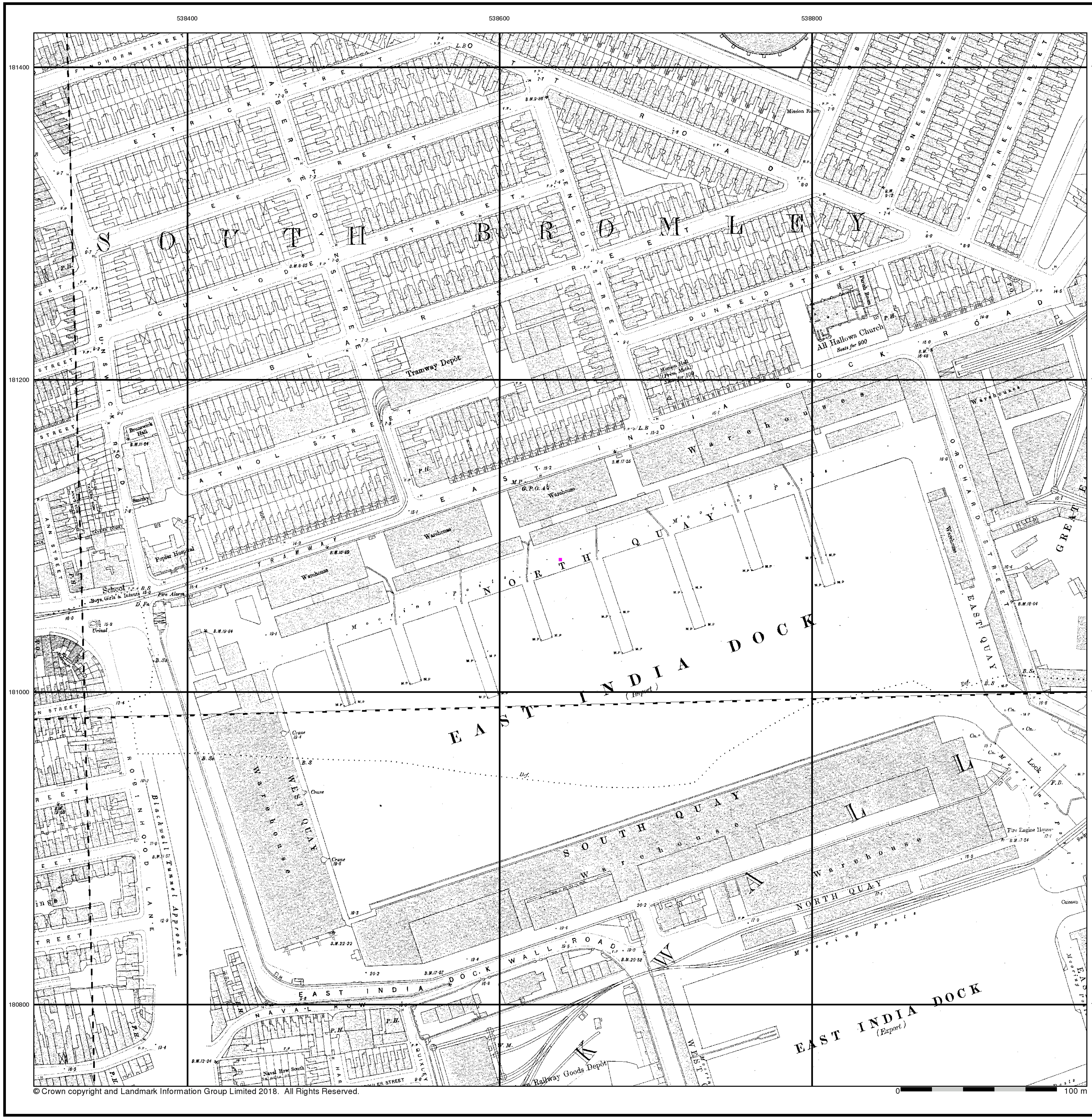
538400
538600
538800
181400
181200
181000
180800
S O U T H B R O M L E Y
Tramway Depot
All Hallows Church
Seats for 900
Mission Room
Brunswick Hall
Poplar Hospital
School
Warehouse
NORTH QUAY
SOUTH QUAY
WEST QUAY
EAST QUAY
EAST INDIA DOCK
(Import)
EAST INDIA DOCK
(Export)
DUNKELD STREET
BENLEDI STREET
ATHOL STREET
ORCHARD STREET
EAST INDIA DOCK ROAD
EAST INDIA DOCK WALL ROAD
Blackwall Tunnel Approach
ROBIN HOOD LANE
NAVAL ROW
Naval Row South
Railway Goods Depot
Fire Engine House
Lock
0
100 m

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Envirocheck®

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London

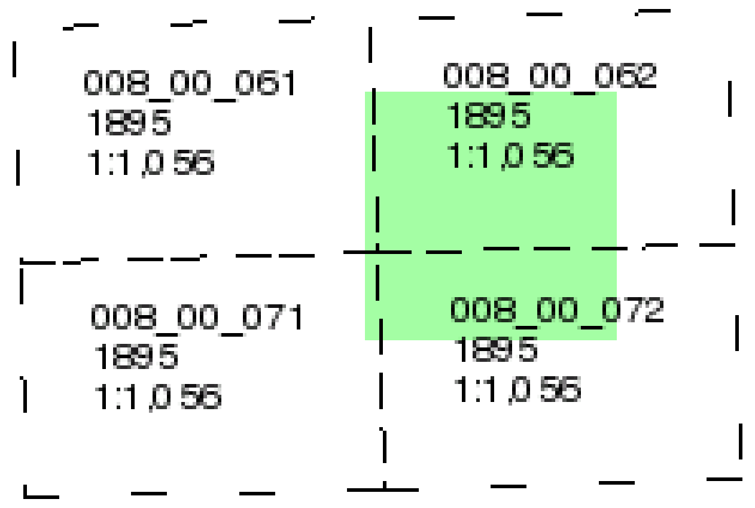
Published 1895

Source map scale - 1:1,056

The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)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1:1,056
008_00_062
1895
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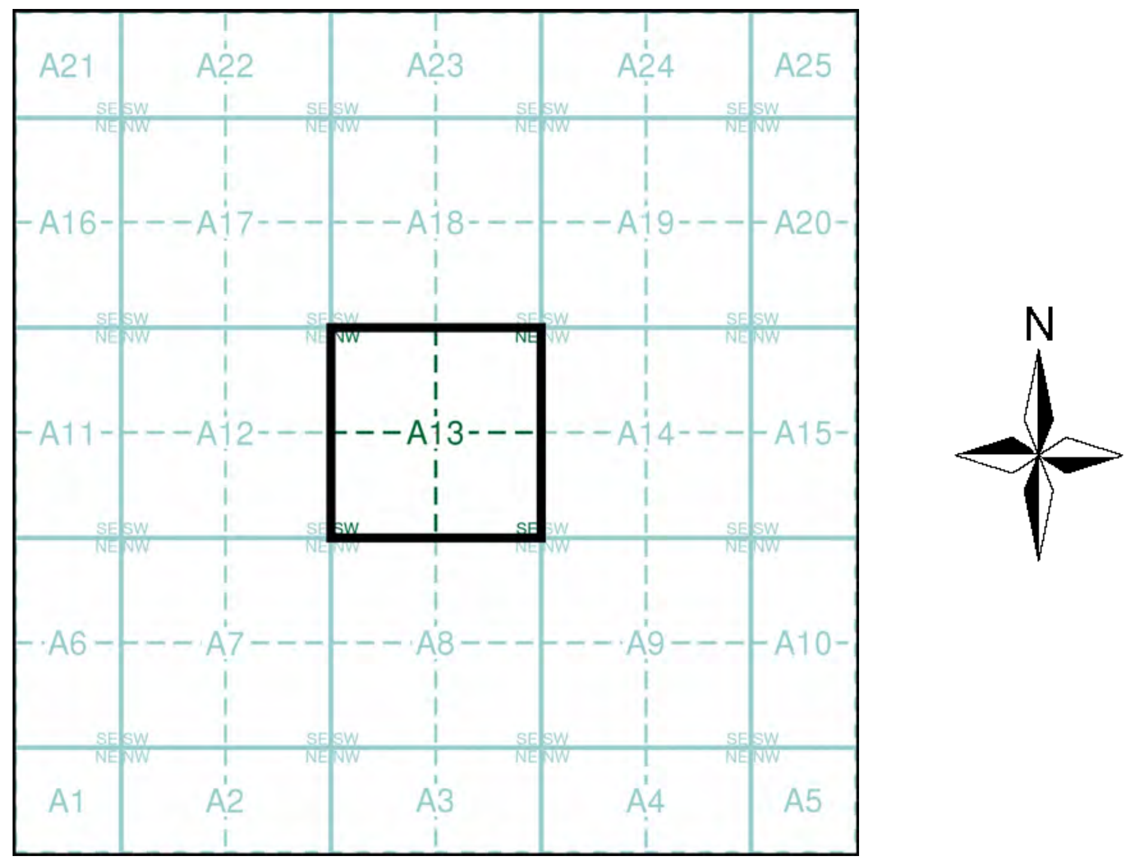
008_00_071
1895
1:1,056
008_00_072
1895
1:1,056

Historical Town Plan - Segment A13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A3
A4
A5
N

Order Details

Order Number:	157608383_1_1
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Site Area (Ha):	0.01
Search Buffer (m):	0

Site Details

Coriander Avenue, London

Landmark
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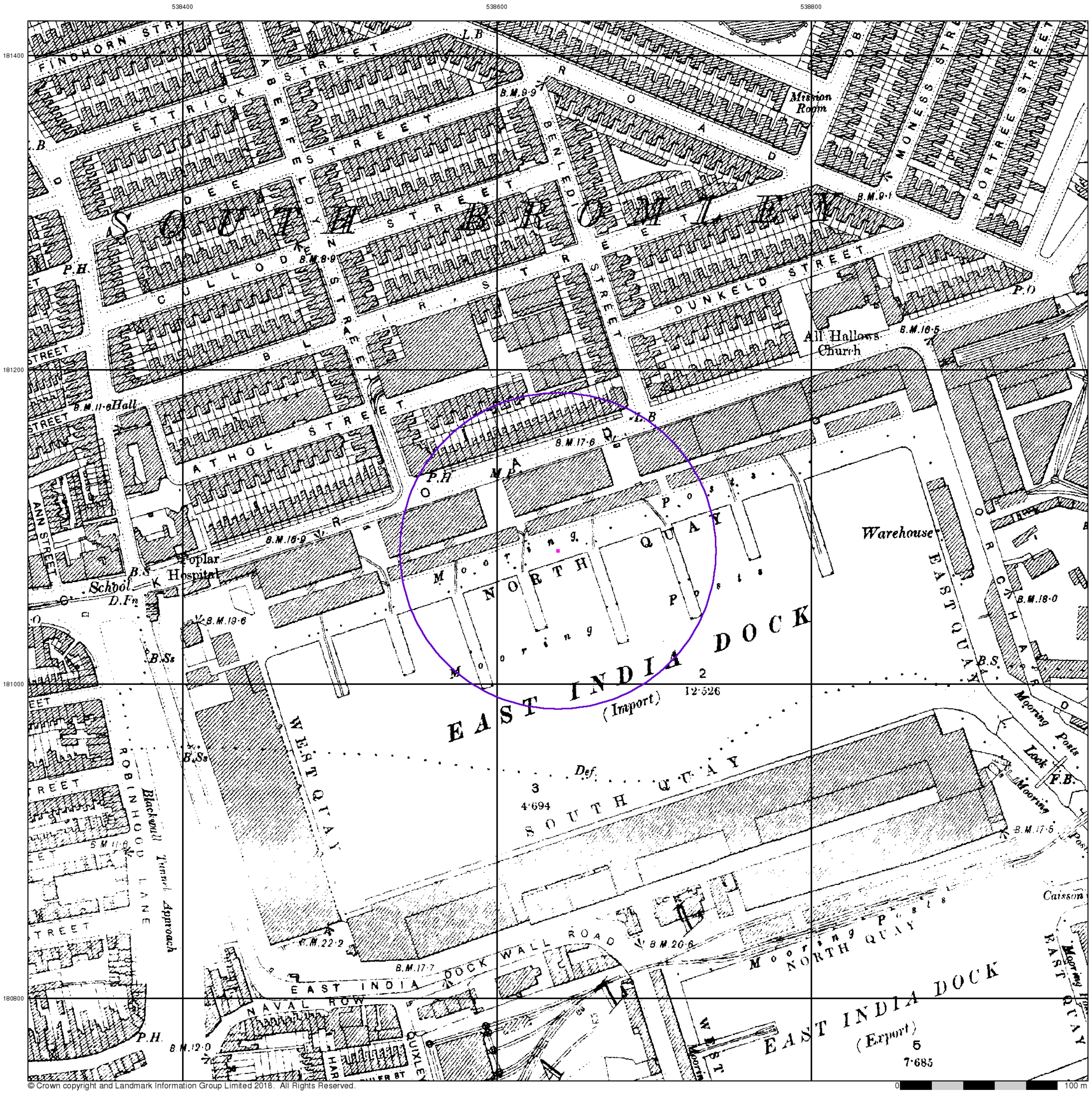
538400
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181200
181000
180800
FINDHORN STREET
ETTRICK STREET
ABERFELDY STREET
DEE STREET
CULLODEN STREET
BLAIR STREET
ATHOL STREET
BENLEDI STREET
DUNKELD STREET
MONESS STREET
PORTREE STREET
ROAD
SOUTH BROMLEY
Mission Room
All Hallows Church
P.H.
B.M.9·9
B.M.9·1
B.M.8·9
B.M.16·5
B.M.17·6
B.M.16·9
B.M.11·8 Hall
B.M.19·6
B.M.18·0
B.M.17·5
B.M.22·2
B.M.17·7
B.M.20·6
B.M.12·0
P.O.
Poplar Hospital
School
D.Fn
B.S.
ANN STREET
Warehouse
NORTH QUAY
Mooring Posts
EAST QUAY
WEST QUAY
SOUTH QUAY
EAST INDIA DOCK (Import)
2
12·526
3
4·694
Def.
Lock
F.B.
Caisson
ROBINHOOD LANE
Blackwall Tunnel Approach
EAST INDIA DOCK WALL ROAD
NAVAL ROW
EAST INDIA DOCK (Export)
5
7·685
0
100 m

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LANDMARK INFORMATION GROUP®

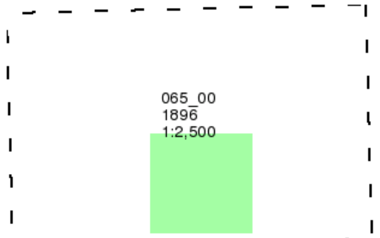
London

Published 1896

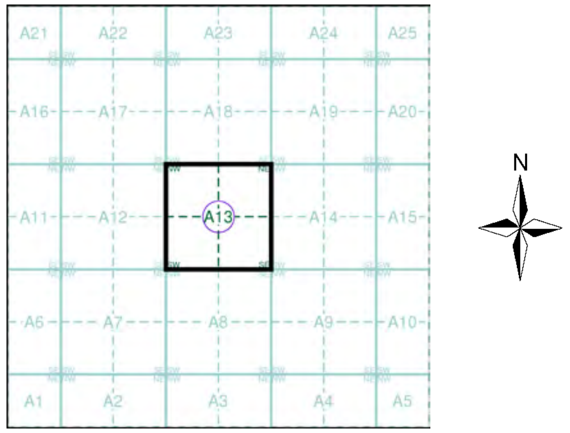
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)


065_00
1896
1:2,500

Historical Map - Segment A13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A9
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A1
A2
A3
A4
A5
N

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Landmark

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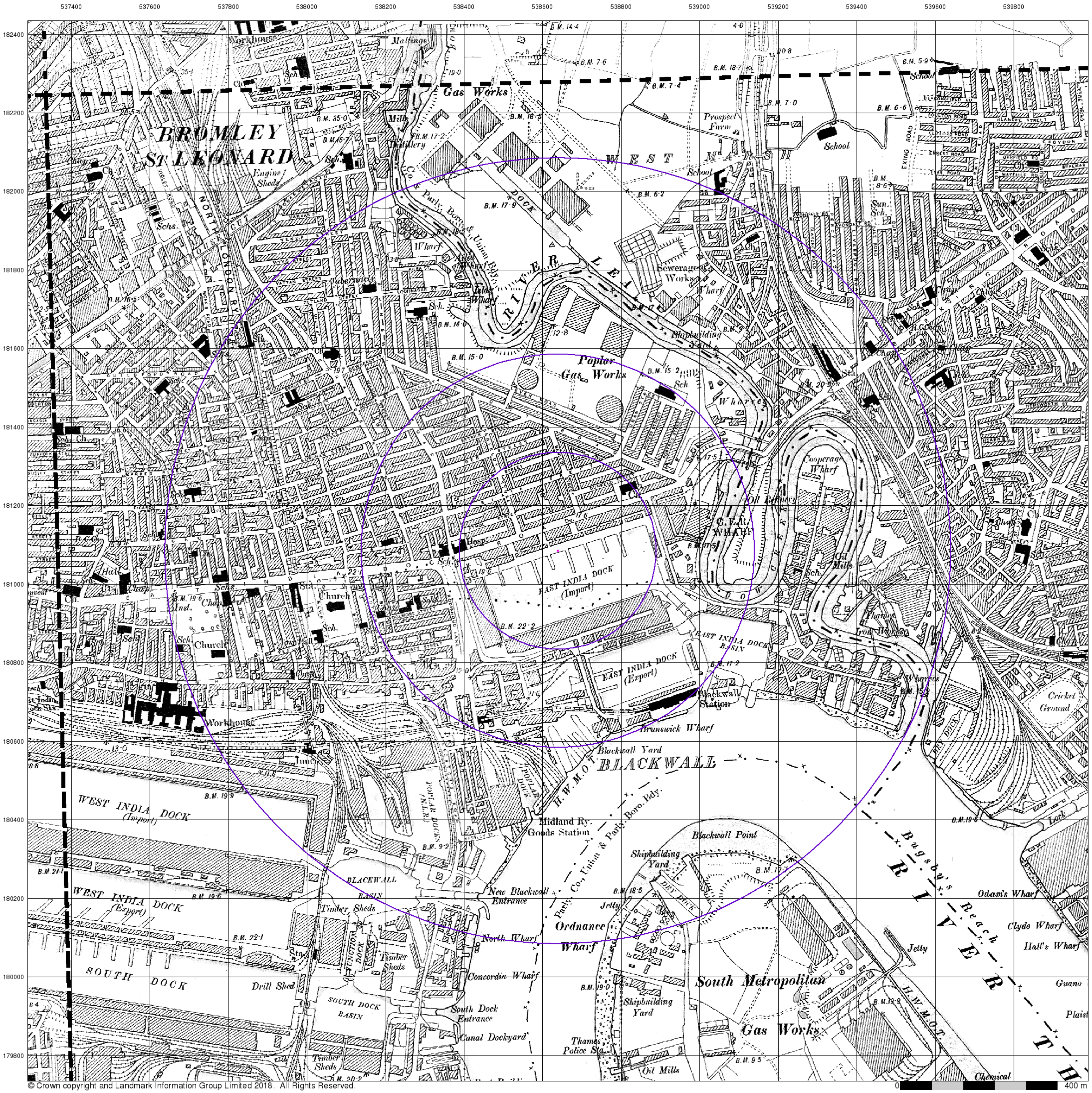
Web:	www.envirocheck.co.uk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BROMLEY
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Gas Works
WEST MARSH
RIVER LEA
Poplar Gas Works
Sewerage Works
Shipbuilding Yard
Cooperage Wharf
G.E.R. WHARF
Oil Refinery
Oil Mills
EAST INDIA DOCK (Import)
EAST INDIA DOCK BASIN
EAST INDIA DOCK (Export)
Blackwall Station
Brunswick Wharf
Blackwall Yard
BLACKWALL
Workhouse
WEST INDIA DOCK (Import)
WEST INDIA DOCK (Export)
SOUTH DOCK
SOUTH DOCK BASIN
BLACKWALL BASIN
Midland Ry. Goods Station
Blackwall Point
Ordnance Wharf
New Blackwall Entrance
North Wharf
Concordia Wharf
South Dock Entrance
Canal Dockyard
Thames Police Sta.
South Metropolitan Gas Works
Shipbuilding Yard
Oil Mills
Bugsby's Reach
RIVER THAMES
Odam's Wharf
Clyde Wharf
Hall's Wharf
Cricket Ground
Drill Shed
Timber Sheds
Church
Sch.
Chemical
0
400 m

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London

Published 1896

Source map scale - 1:10,560

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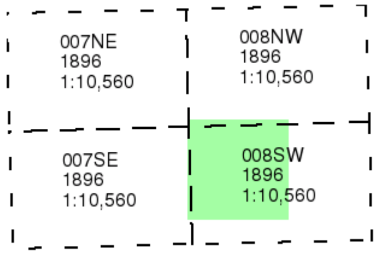
Map Name(s) and Date(s)


007NE
1896
1:10,560
008NW
1896
1:10,560
007SE
1896
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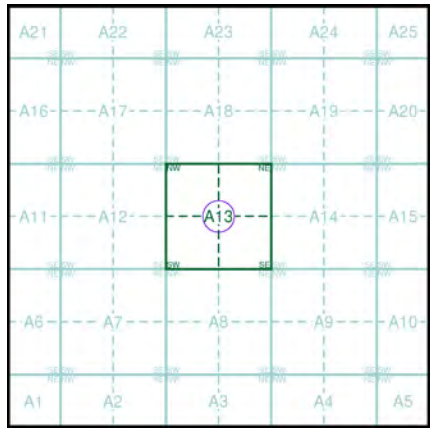
008SW
1896
1:10,560

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

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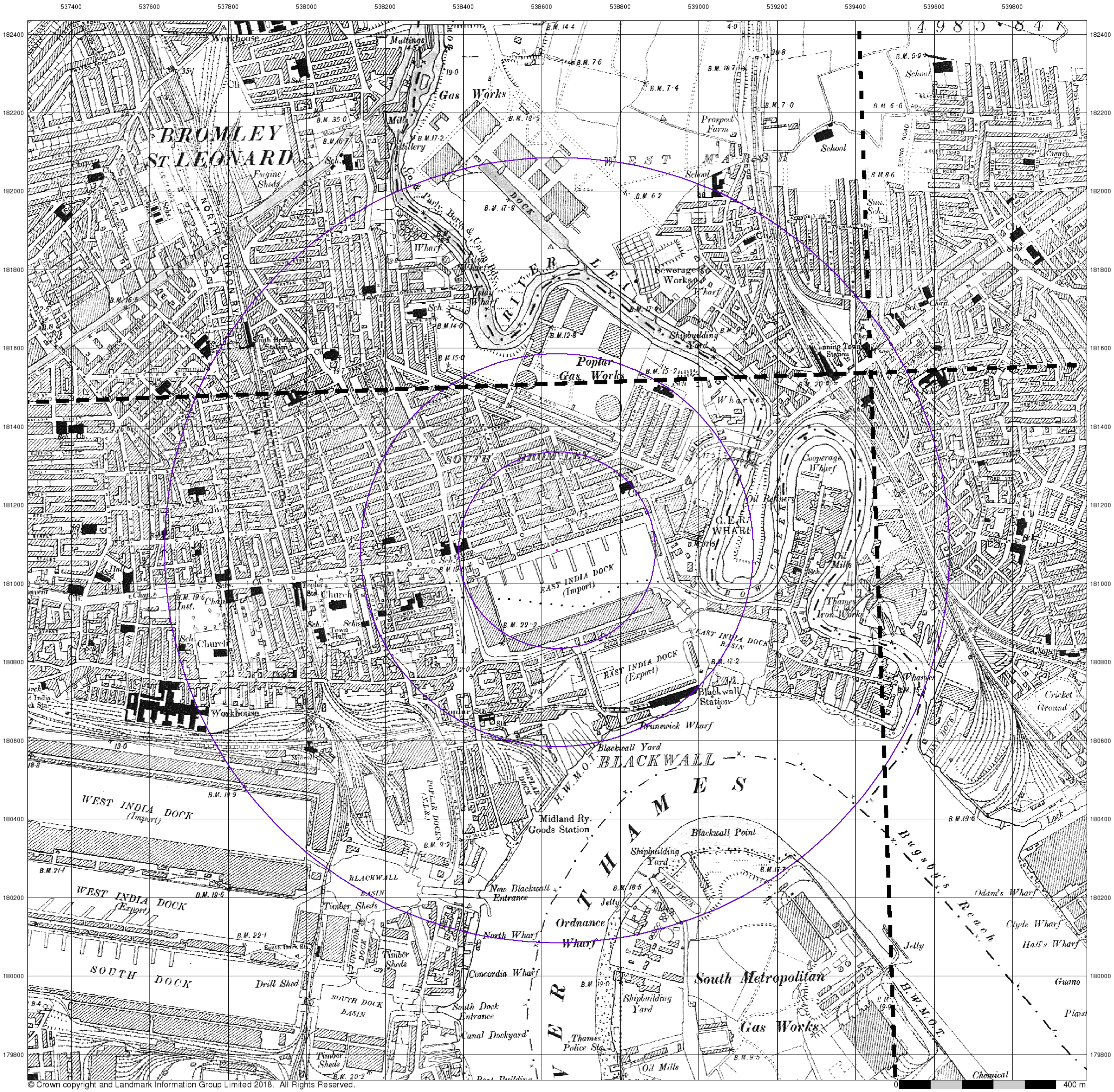
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Workhouse
Maltings
Gas Works
BROMLEY
ST LEONARD
Engine Sheds
Distillery
Prospect Farm
School
WEST MARSH
Sewerage Works
RIVER LEA
Shipbuilding Yard
Poplar Gas Works
Wharves
Cooperage Wharf
Oil Refinery
G.E.R. WHARF
BOW CREEK
Thames Iron Works
SOUTH BROMLEY
EAST INDIA DOCK (Import)
EAST INDIA DOCK (Export)
EAST INDIA DOCK BASIN
Blackwall Station
Brunswick Wharf
Blackwall Yard
BLACKWALL
Workhouse
Poplar Sta.
WEST INDIA DOCK (Import)
WEST INDIA DOCK (Export)
SOUTH DOCK
Drill Shed
Timber Sheds
BLACKWALL BASIN
Midland Ry. Goods Station
New Blackwall Entrance
North Wharf
Ordnance Wharf
Blackwall Point
Shipbuilding Yard
RIVER THAMES
Bugsby's Reach
Odam's Wharf
Clyde Wharf
Hall's Wharf
South Metropolitan Gas Works
Concordia Wharf
South Dock Entrance
Canal Dockyard
Thames Police Sta.
Oil Mills
Chemical
Cricket Ground
Guano
0
400 m

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Essex

Published 1898 - 1899

Source map scale - 1:10,560

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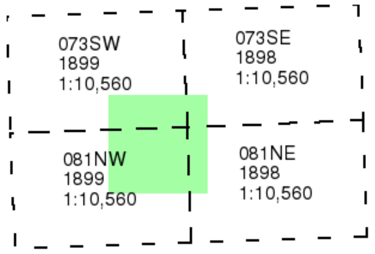
Map Name(s) and Date(s)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1899
1:10,560
073SE
1898
1:10,560
081NW
1899
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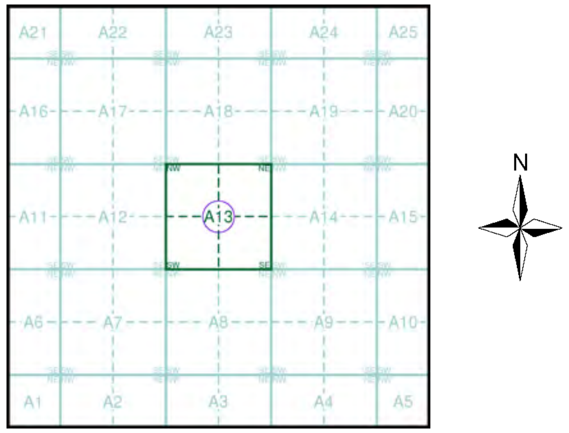
081NE
1898
1:10,560

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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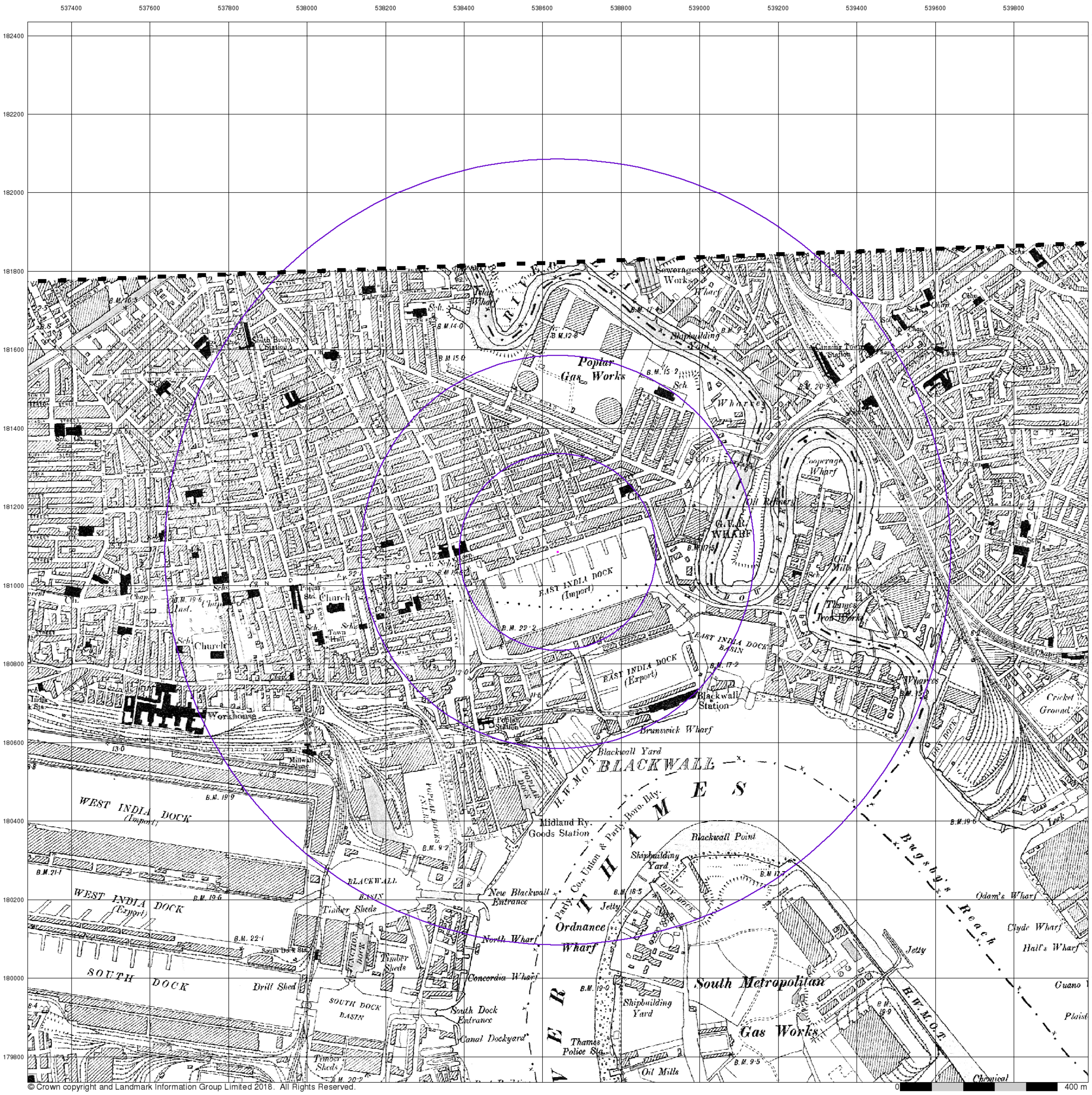
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Poplar Gas Works
Sewerage Works
Shipbuilding Yard
Canning Town Station
Wharves
Cooperage Wharf
Oil Refinery
G.W.R. WHARF
Oil Mills
Thames Iron Works
EAST INDIA DOCK (Import)
EAST INDIA DOCK BASIN
EAST INDIA DOCK (Export)
Blackwall Station
Brunswick Wharf
Poplar Station
Blackwall Yard
BLACKWALL
Workhouse
Church
Town Hall
WEST INDIA DOCK (Import)
WEST INDIA DOCK (Export)
SOUTH DOCK
SOUTH DOCK BASIN
Drill Shed
Timber Sheds
Midland Ry. Goods Station
BLACKWALL BASIN
New Blackwall Entrance
North Wharf
Ordnance Wharf
Concordia Wharf
South Dock Entrance
Canal Dockyard
Thames Police Sta.
RIVER THAMES
Blackwall Point
Shipbuilding Yard
DRY DOCK
South Metropolitan Gas Works
Bugsby's Reach
Jetty
Odam's Wharf
Clyde Wharf
Hall's Wharf
Cricket Ground
H.W.M.O.T.
Chemical
Guano
Oil Mills
0
400 m

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Kent

Published 1899

Source map scale - 1:10,560

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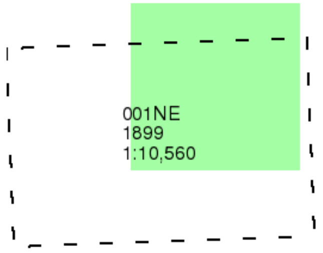
Map Name(s) and Date(s)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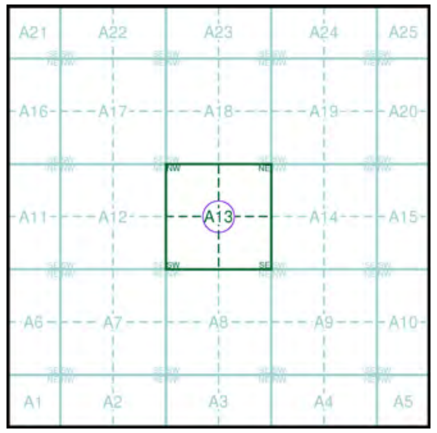
1899
1:10,560

Historical Map - Slice A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N

Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark

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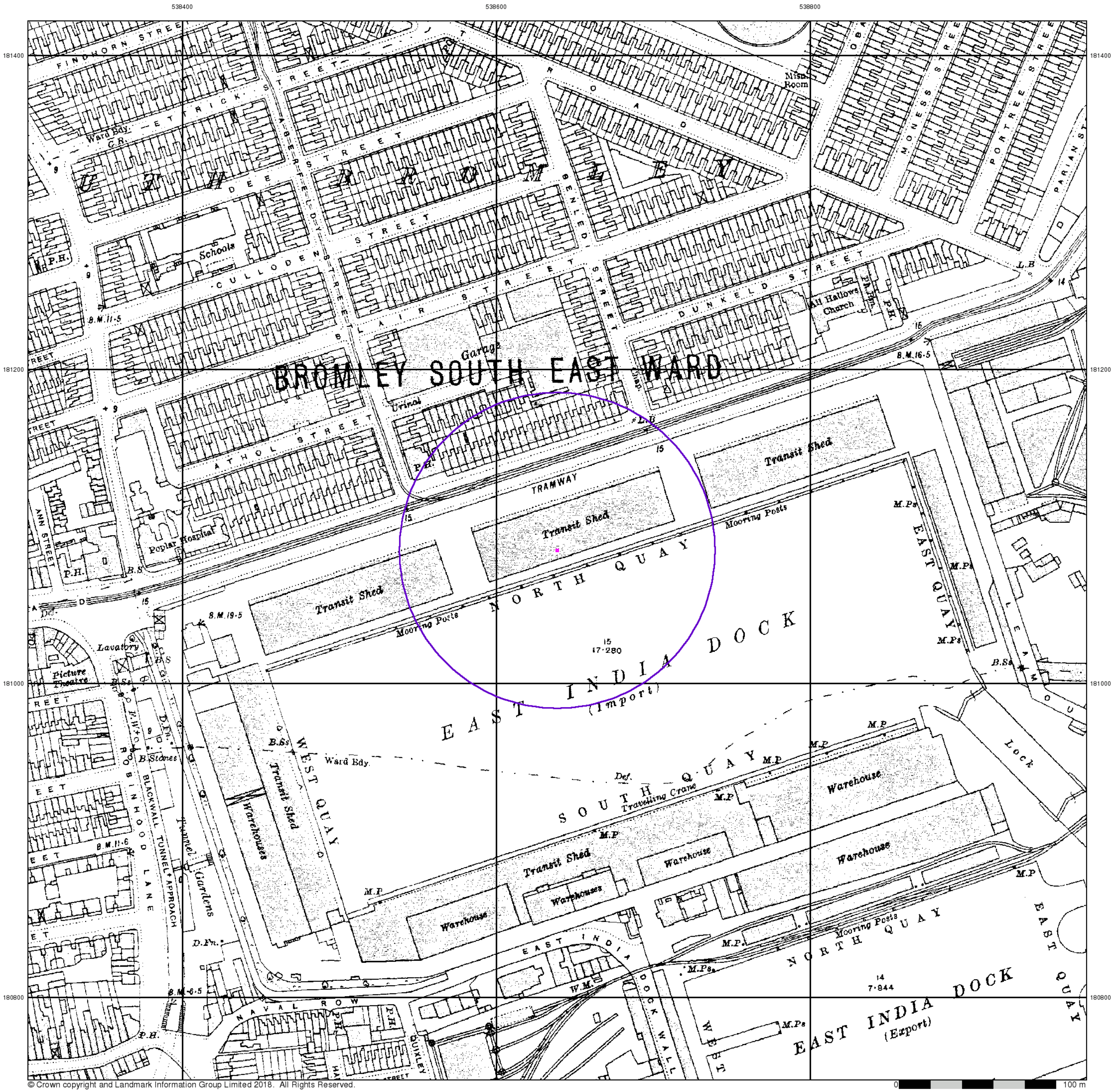
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BROMLEY SOUTH EAST WARD
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ETTRICK STREET
AIDER STREET
DEE STREET
CULLODEN STREET
BLAIR STREET
ATHOL STREET
ABERFELDY STREET
BENLEDI STREET
DUNKELD STREET
PORTREE STREET
MONESS STREET
ROAD
POPLAR HOSPITAL
Schools
Garage
Urinal
All Hallows Church
Mission Room
TRAMWAY
Transit Shed
Mooring Posts
NORTH QUAY
EAST INDIA DOCK (Import)
EAST QUAY
WEST QUAY
SOUTH QUAY
Travelling Crane
Warehouse
Warehouses
Lock
Lavatory
Picture Theatre
ROBIN HOOD LANE
BLACKWALL TUNNEL APPROACH
Tunnel Gardens
EAST INDIA DOCK WALL
NAVAL ROW
QUIXLEY
NORTH QUAY
EAST INDIA DOCK (Export)
B.M. 19·5
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L.B.
M.P.
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Essex

Published 1916

Source map scale - 1:2,500

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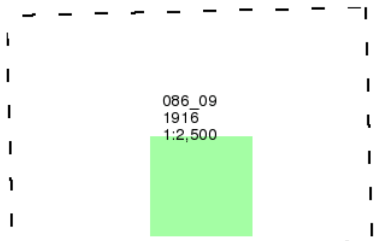
Map Name(s) and Date(s)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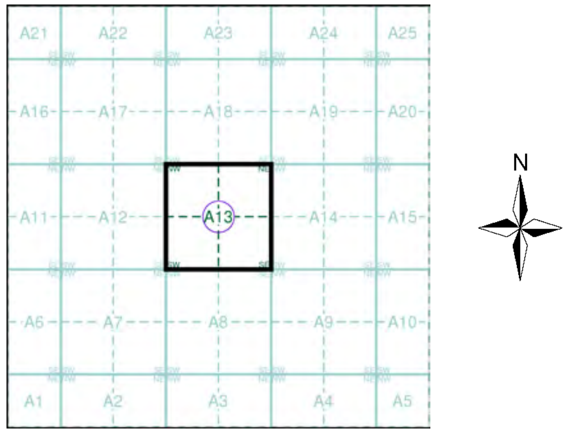
1:2,500

Historical Map - Segment A13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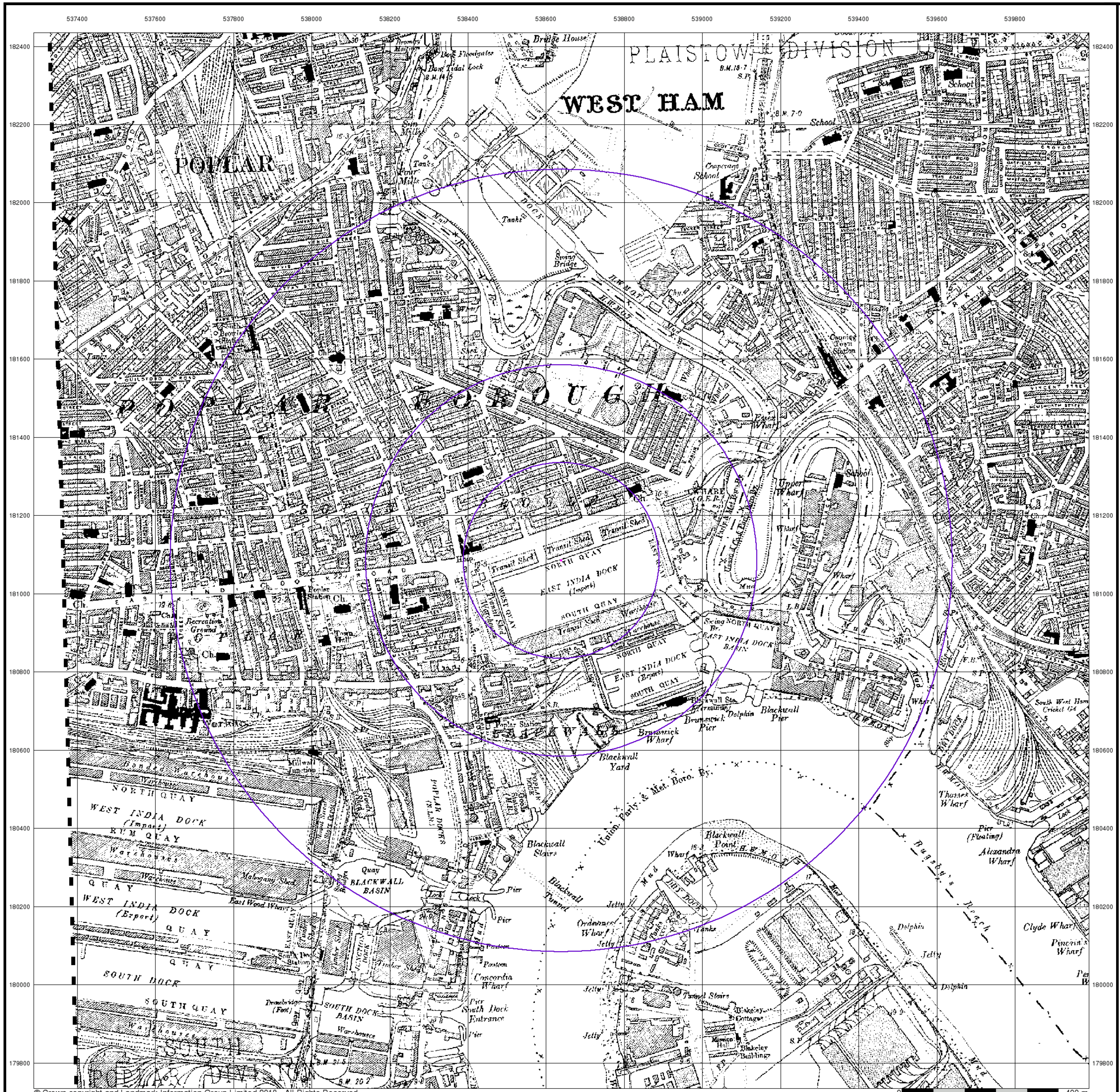
Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Coriander Avenue, London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PLAISTOW DIVISION
WEST HAM
POPLAR
POPLAR BOROUGH
Bridge House
Bow Floodgates
Bow Tidal Lock
Sun Mills
Four Mills
Tanks
School
Chapel School
Swing Bridge
Canning Town Station
East Wharf
Upper Wharf
Wharf
School
Transit Shed
NORTH QUAY
EAST INDIA DOCK (Import)
SOUTH QUAY
WEST QUAY
NORTH QUAY
EAST INDIA DOCK (Export)
SOUTH QUAY
EAST INDIA DOCK BASIN
Blackwall Sta.
Dolphin
Blackwall Pier
Brunswick Pier
Brunswick Wharf
Blackwall Yard
Poplar Station
Millwall Junction
Recreation Ground
Town Hall
Ch.
Union Party. & Met. Boro. Ry.
Bonded Warehouses
NORTH QUAY
WEST INDIA DOCK (Import)
RUM QUAY
Warehouses
Mahogany Shed
WEST INDIA DOCK (Export)
QUAY
East Wood Wharf
BLACKWALL BASIN
Quay
POPLAR DOCKS
Blackwall Stairs
Blackwall Tunnel
Blackwall Point
Wharf
DRY DOCK
Ordnance Wharf
Jetty
Tanks
Pier
Pontoon
Concordia Wharf
South Dock Entrance
SOUTH DOCK
SOUTH QUAY
SOUTH DOCK BASIN
Warehouses
Drawbridge (Foot)
Tunnel Stairs
Blakeley Cottages
Blakeley Buildings
Thames Wharf
Pier (Floating)
Alexandra Wharf
Clyde Wharf
Dolphin
Jetty
Bugsby's Reach
South West Ham Cricket Gd.
SOUTH POPLAR DIVISION
0
400 m

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Essex
Published 1920
Source map scale - 1:10,560

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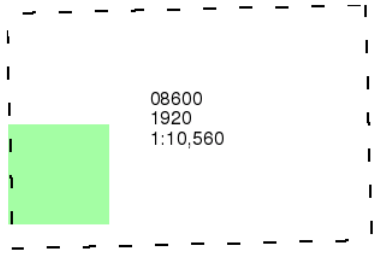
Map Name(s) and Date(s)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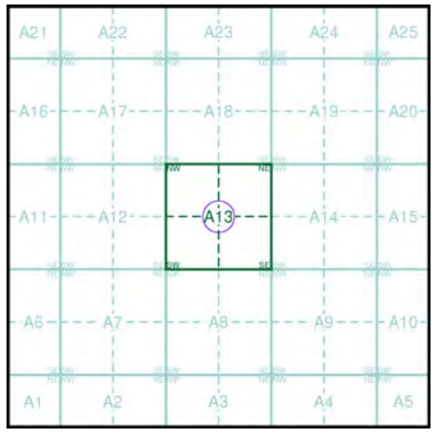
1920
1:10,560

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

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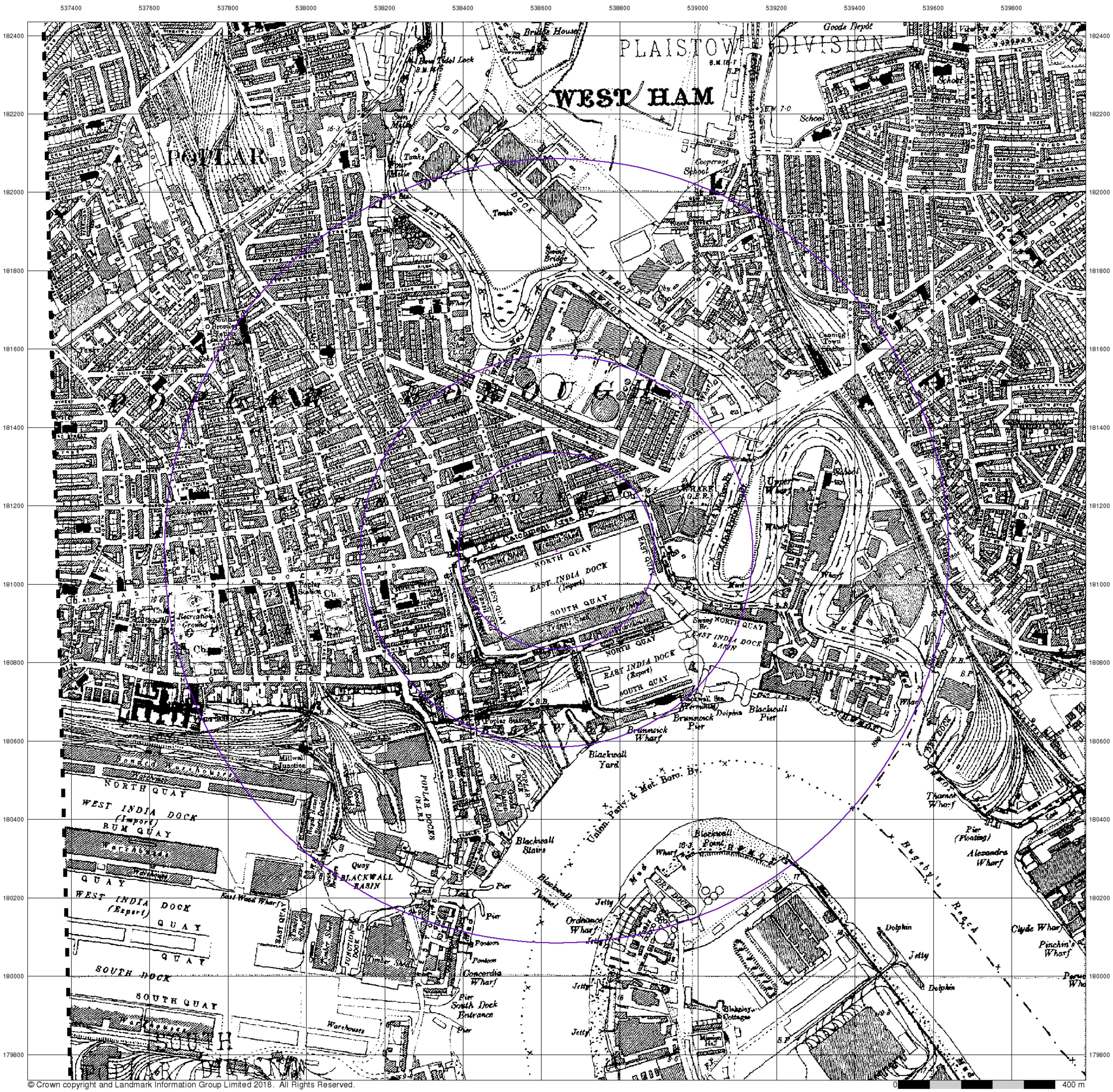
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PLAISTOW DIVISION
WEST HAM
POPLAR
POPLAR BOROUGH
NORTH QUAY
EAST INDIA DOCK (Import)
SOUTH QUAY
EAST INDIA DOCK (Export)
EAST INDIA DOCK BASIN
WEST INDIA DOCK (Import)
WEST INDIA DOCK (Export)
SOUTH DOCK
POPLAR DOCKS
BLACKWALL BASIN
Blackwall Yard
Brunswick Wharf
Brunswick Pier
Blackwall Pier
Blackwall Stairs
Blackwall Tunnel
Ordnance Wharf
Concordia Wharf
South Dock Entrance
Millwall Junction
Thames Wharf
Alexandra Wharf
Clyde Wharf
Pinchin's Wharf
Bugsby's Reach
Union Parly. & Met. Boro. By.
Goods Depot
Bridge House
School
Cooperage
Upper Wharf
Canning Town
0
400 m

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Essex

Published 1938

Source map scale - 1:10,560

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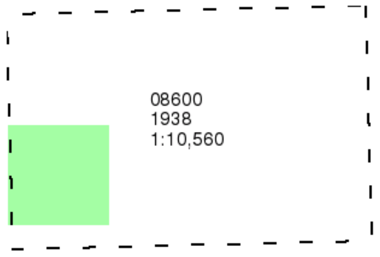
08600
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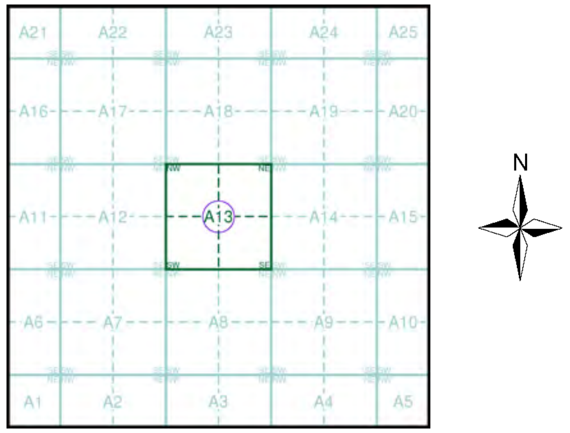
1:10,560

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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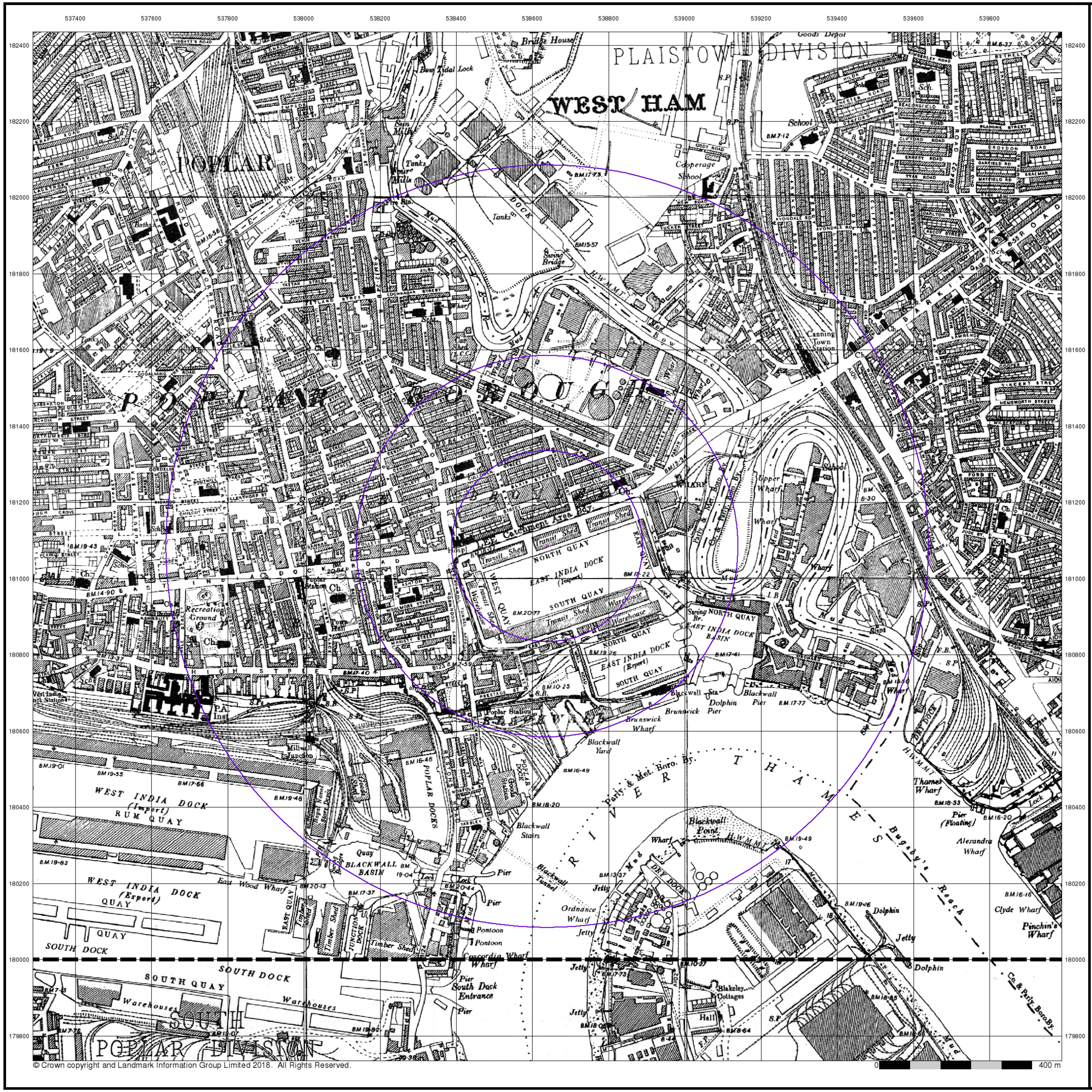
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179800
PLAISTOW DIVISION
WEST HAM
POPLAR
POPLAR BOROUGH
EAST INDIA DOCK (Import)
NORTH QUAY
SOUTH QUAY
WEST QUAY
EAST INDIA DOCK (Export)
EAST INDIA DOCK BASIN
WEST INDIA DOCK (Import)
RUM QUAY
WEST INDIA DOCK (Export)
SOUTH DOCK
SOUTH QUAY
BLACKWALL BASIN
POPLAR DOCKS
RIVER THAMES
Bugsby's Reach
Bow Creek
Canning Town Station
Poplar Station
Blackwall Point
Brunswick Wharf
Blackwall Yard
Blackwall Tunnel
Thames Wharf
Alexandra Wharf
Pinchin's Wharf
Clyde Wharf
Concordia Wharf
South Dock Entrance
SOUTH POPLAR DIVISION
0
400 m

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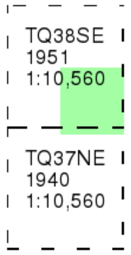
Ordnance Survey Plan

Published 1940 - 1951

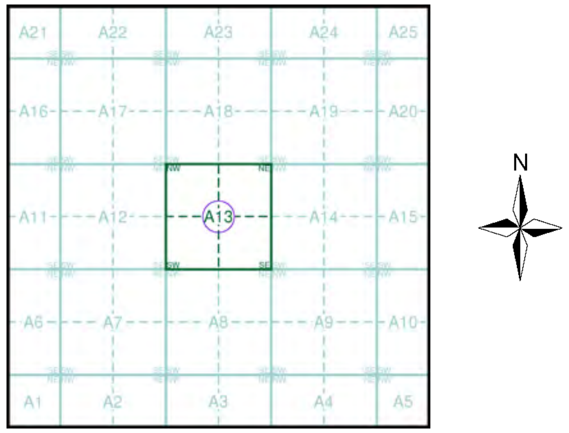
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)


TQ38SE
1951
1:10,560
TQ37NE
1940
1:10,560

Historical Map - Slice A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A5
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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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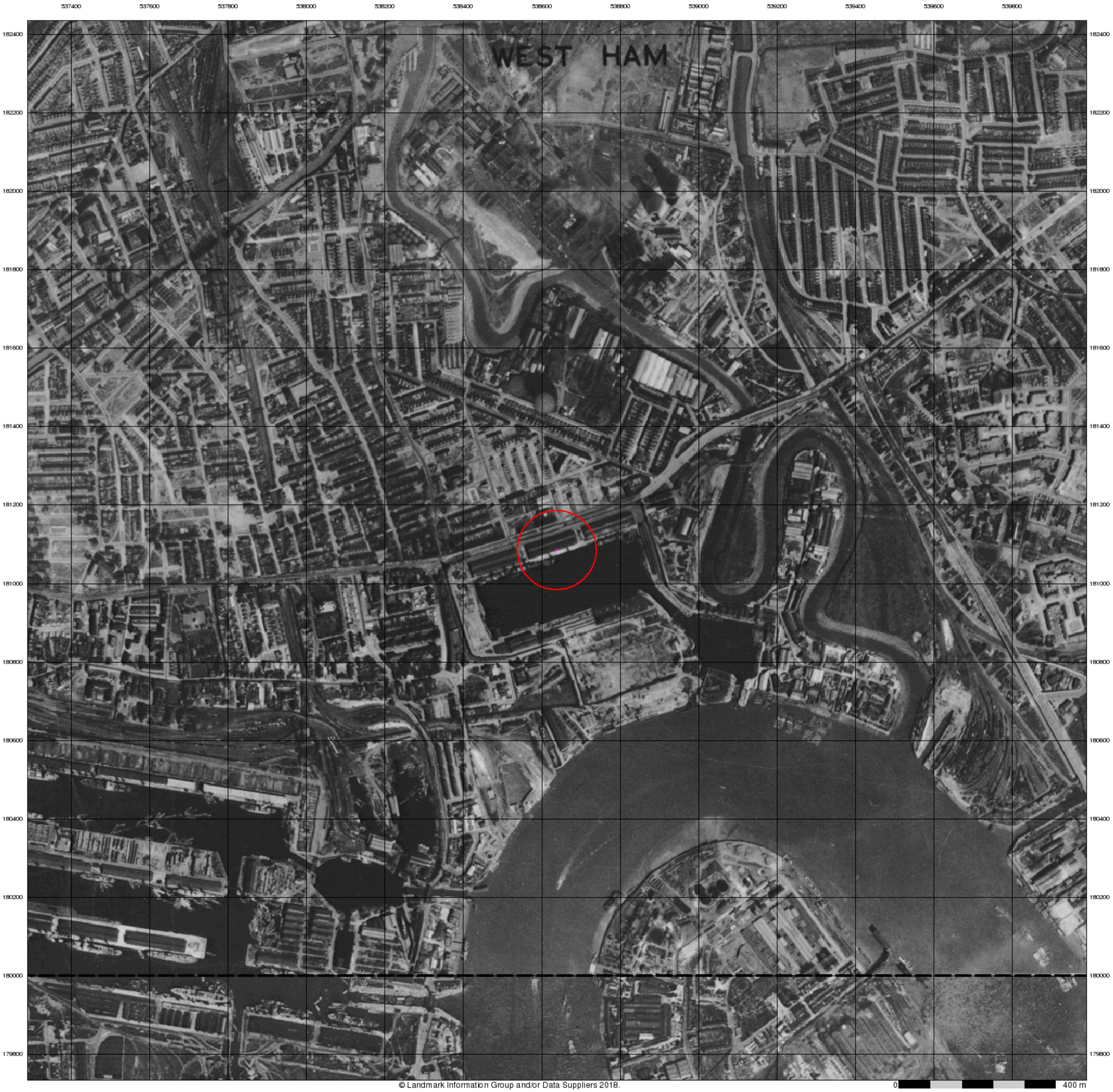
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182000
181800
181600
181400
181200
181000
180800
180600
180400
180200
180000
179800
WEST HAM

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0
400 m

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Historical Aerial Photography

Published 1948 - 1949

Source map scale - 1:10,560

The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

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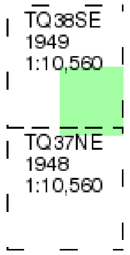
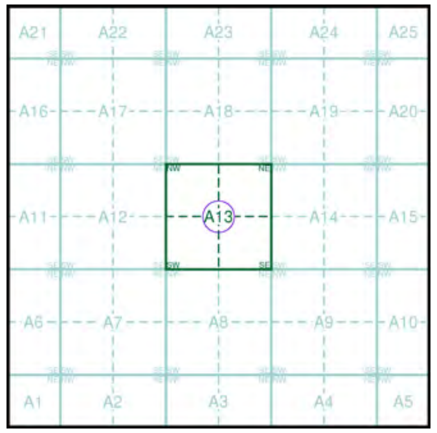
Map Name(s) and Date(s)


TQ38SE
1949
1:10,560
TQ37NE
1948
1:10,560

Historical Aerial Photography - Slice A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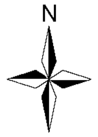

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Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

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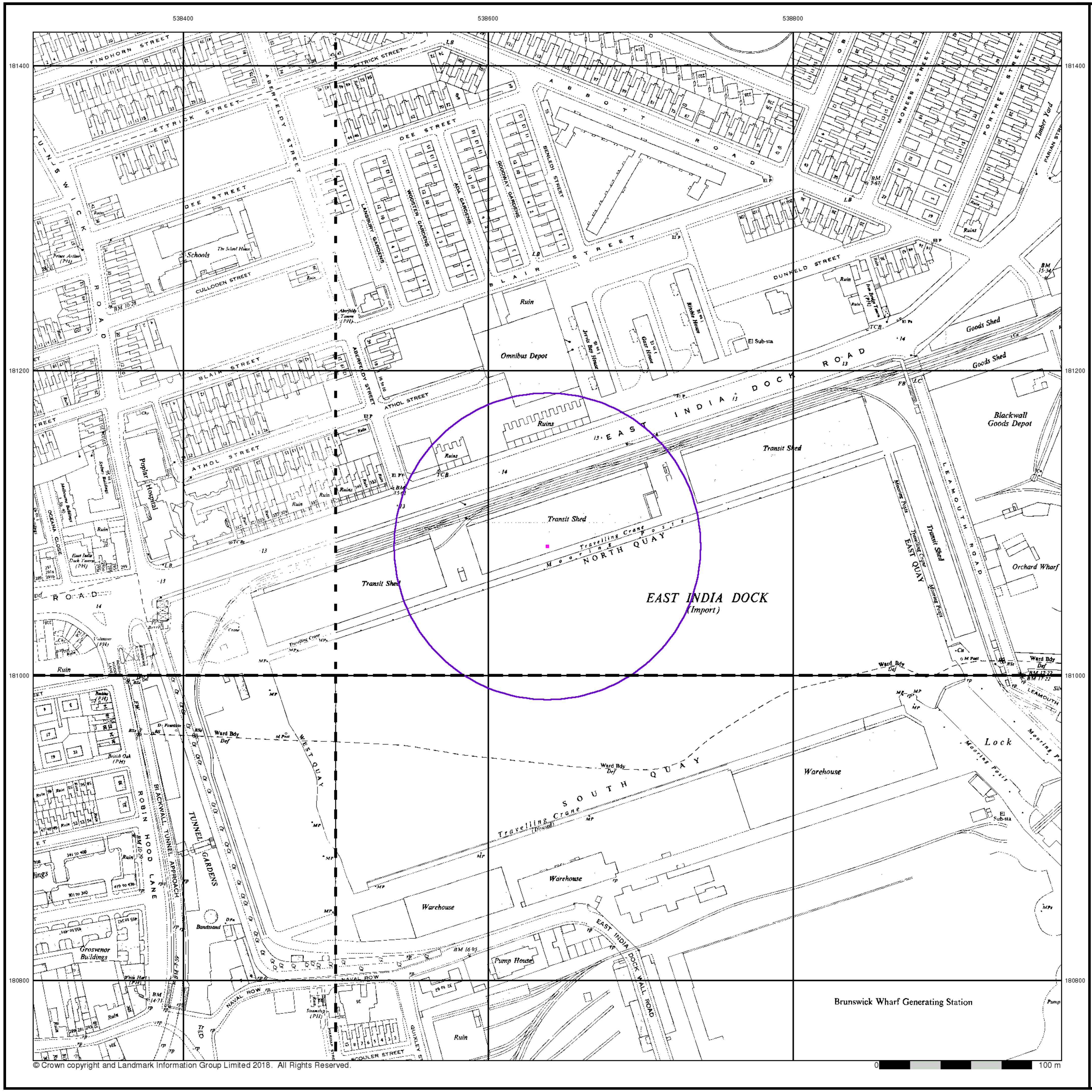
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181400
181200
181000
180800
FINDHORN STREET
ETTRICK STREET
ABERFELDY STREET
DEE STREET
ABBOTT ROAD
BENLEDI STREET
GODDWAY GARDENS
ADA GARDENS
WOOSTER GARDENS
LANSBURY GARDENS
NONESS STREET
PORTREE STREET
Timber Yard
BRUNSWICK ROAD
Schools
CULLODEN STREET
BLAIR STREET
DUNKELD STREET
Ruin
Omnibus Depot
El Sub-sta
Goods Shed
ATHOL STREET
Poplar Hospital
EAST INDIA DOCK ROAD
Ruins
Transit Shed
Blackwall Goods Depot
Travelling Crane
Mooring Posts
NORTH QUAY
EAST QUAY
LEAMOUTH ROAD
Orchard Wharf
EAST INDIA DOCK (Import)
Ward Bdy Def
WEST QUAY
SOUTH QUAY
Lock
Warehouse
ROBIN HOOD LANE
BLACKWALL TUNNEL APPROACH
TUNNEL GARDENS
Grosvenor Buildings
Bandstand
Pump House
EAST INDIA DOCK WALL ROAD
NAVAL ROW
QUILTER STREET
Brunswick Wharf Generating Station
0
100 m

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Ordnance Survey Plan

Published 1949 - 1950

Source map scale - 1:1,250

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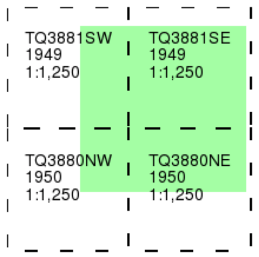
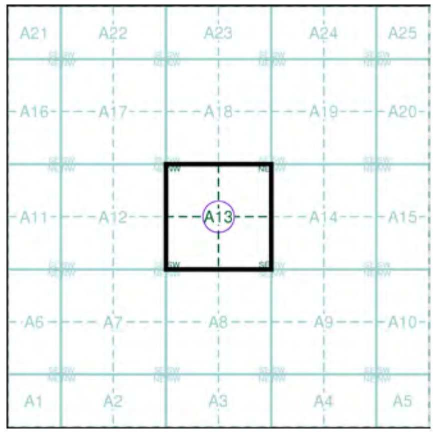
Map Name(s) and Date(s)


TQ3881SW
1949
1:1,250
TQ3881SE
1949
1:1,250
TQ3880NW
1950
1:1,250
TQ3880NE
1950
1:1,250

Historical Map - Segment A13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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

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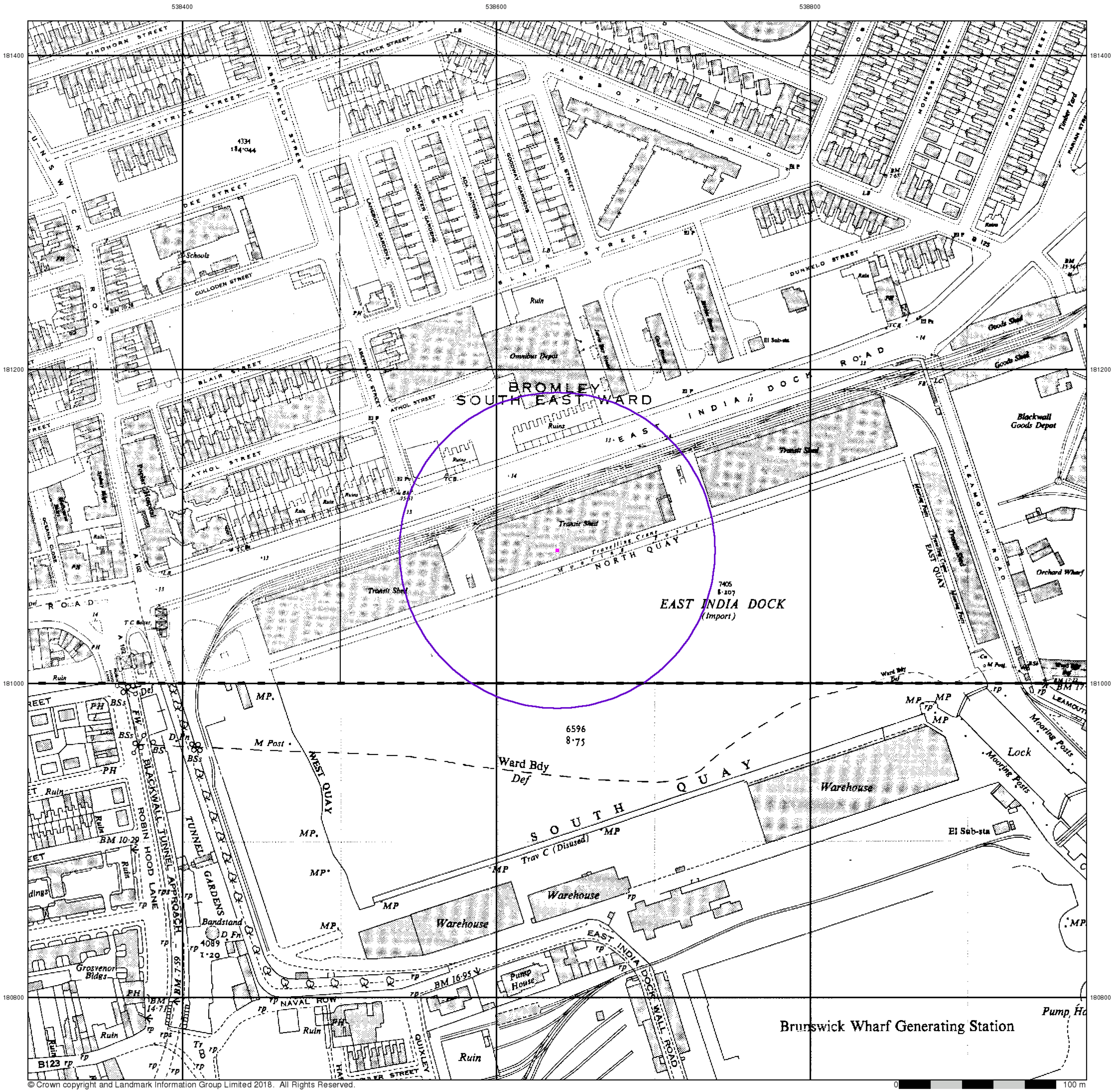
538400
538600
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181400
181200
181000
180800
BROMLEY SOUTH EAST WARD
EAST INDIA DOCK ROAD
EAST INDIA DOCK (Import)
NORTH QUAY
SOUTH QUAY
WEST QUAY
EAST QUAY
Transit Shed
Travelling Crane
Omnibus Depot
Blackwall Goods Depot
Goods Shed
Orchard Wharf
Warehouse
Ward Bdy Def
Lock
Mooring Posts
El Sub-sta
Pump House
Brunswick Wharf Generating Station
EAST INDIA DOCK WALL ROAD
NAVAL ROW
QUIXLEY STREET
BLACKWALL TUNNEL APPROACH
ROBIN HOOD LANE
TUNNEL GARDENS
Bandstand
Grosvenor Bldgs
ATHOL STREET
BLAIR STREET
ABBOTT ROAD
DUNKELD STREET
LEAMOUTH ROAD
DEE STREET
CULLODEN STREET
KINGHORN STREET
STRATHMORE STREET
ABERFELDY STREET
Schools
Ruins
6596
8·75
7405
8·207
4334
184·044
4089
1·20
BM 16·95
BM 10·29
B123
0
100 m

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Ordnance Survey Plan

Published 1951 - 1952

Source map scale - 1:2,500

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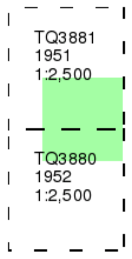
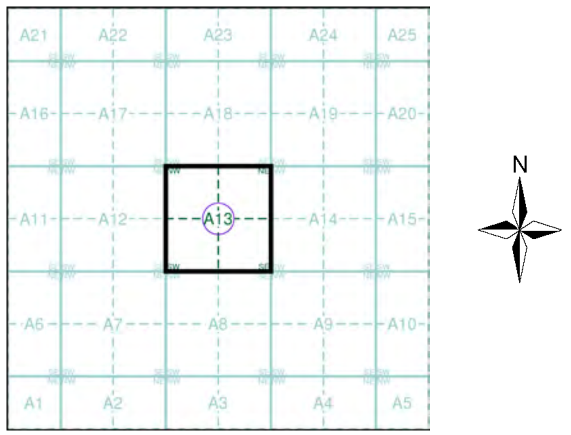
Map Name(s) and Date(s)


TQ3881
1951
1:2,500
TQ3880
1952
1:2,500

Historical Map - Segment A13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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

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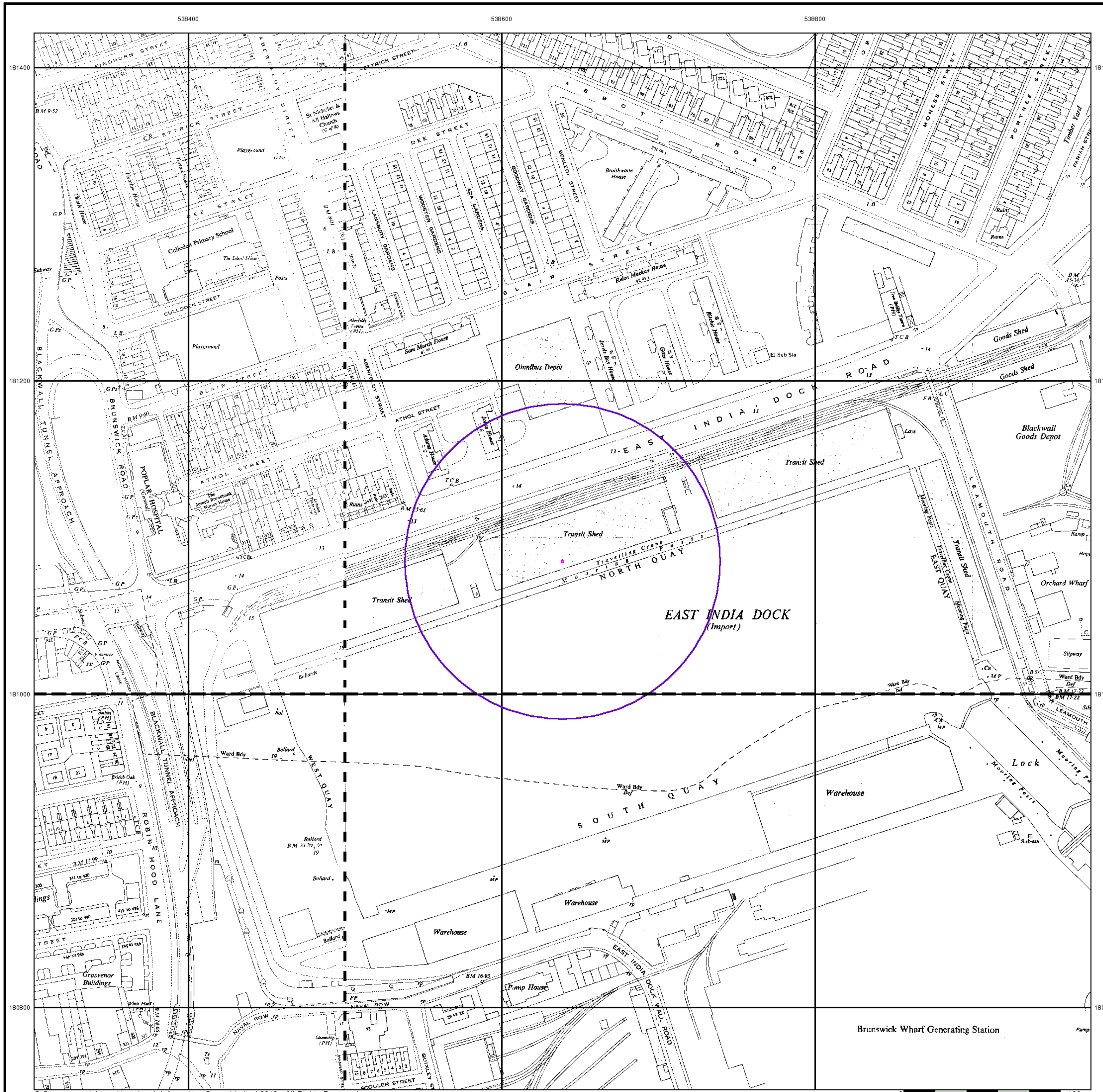
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181400
181200
181000
180800
EAST INDIA DOCK (Import)
NORTH QUAY
SOUTH QUAY
EAST QUAY
EAST INDIA DOCK ROAD
Transit Shed
Warehouse
Blackwall Goods Depot
Goods Shed
Omnibus Depot
Culloden Primary School
POPLAR HOSPITAL (General)
BLACKWALL TUNNEL APPROACH
LEAMOUTH ROAD
Orchard Wharf
Lock
Pump House
Brunswick Wharf Generating Station
0
100 m

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Ordnance Survey Plan

Published 1951 - 1962

Source map scale - 1:1,250

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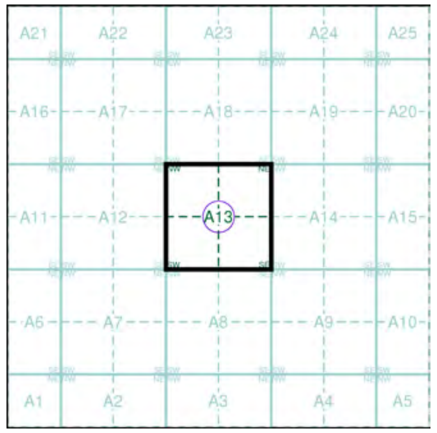
Map Name(s) and Date(s)

TQ3881SW 1962 1:1,250	TQ3881SE 1953 1:1,250
TQ3880NW 1961 1:1,250	TQ3880NE 1951 1:1,250

Historical Map - Segment A13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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

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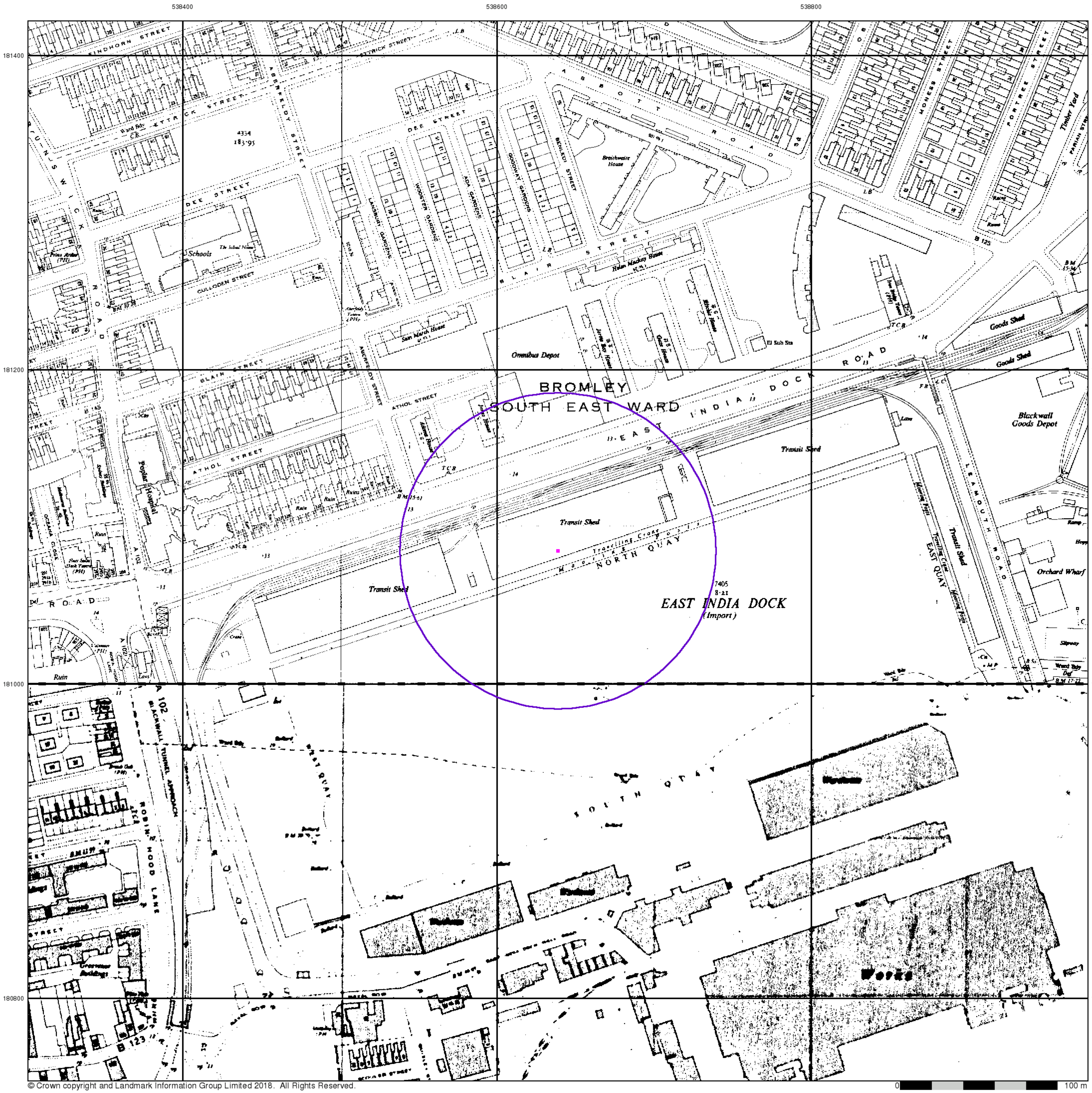
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180800
FINDHORN STREET
ETTRICK STREET
DEE STREET
ABERFELDY STREET
BRUNSWICK ROAD
ABBOTT ROAD
BLAIR STREET
CULLODEN STREET
Schools
Omnibus Depot
GLAIN STREET
ATHOL STREET
BROMLEY
SOUTH EAST WARD
EAST INDIA DOCK ROAD
Goods Shed
Blackwall Goods Depot
Transit Shed
Poplar Hospital
Travelling Crane
NORTH QUAY
EAST QUAY
LEAMOUTH ROAD
Orchard Wharf
7405
8·21
EAST INDIA DOCK
(Import)
A 102
BLACKWALL TUNNEL APPROACH
ROBIN HOOD LANE
SOUTH QUAY
Ruin
Works
B 125
B 123

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Ordnance Survey Plan

Published 1954 - 1964

Source map scale - 1:2,500

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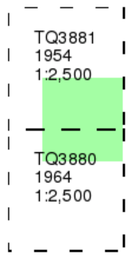
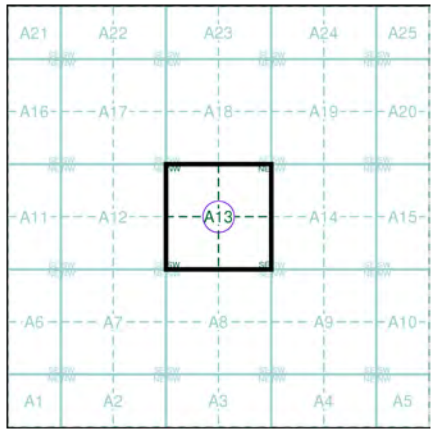
Map Name(s) and Date(s)


TQ3881
1954
1:2,500
TQ3880
1964
1:2,500

Historical Map - Segment A13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N

Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

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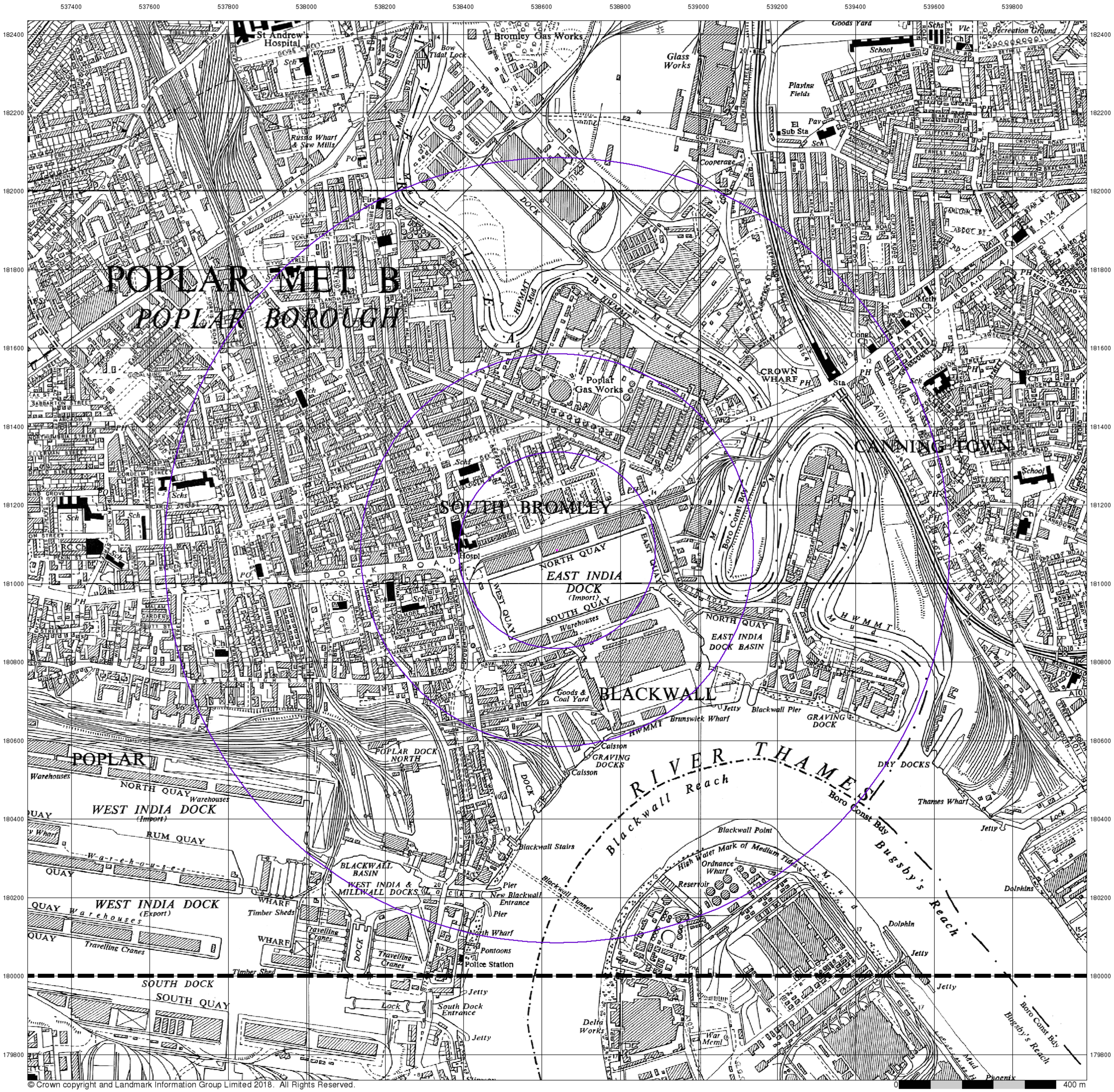
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181200
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180800
180600
180400
180200
180000
179800
St Andrew's Hospital
Bromley Gas Works
Bow Tidal Lock
Glass Works
Goods Yard
School
Recreation Ground
Playing Fields
Russia Wharf & Saw Mills
Cooperage
El Sub Sta
POPLAR MET B
POPLAR BOROUGH
Poplar Gas Works
CROWN WHARF
CANNING TOWN
SOUTH BROMLEY
NORTH QUAY
EAST INDIA DOCK (Import)
SOUTH QUAY
WEST QUAY
EAST QUAY
EAST INDIA DOCK BASIN
BLACKWALL
Goods & Coal Yard
Brunswick Wharf
Blackwall Pier
GRAVING DOCK
GRAVING DOCKS
Caisson
POPLAR DOCK NORTH
POPLAR
WEST INDIA DOCK (Import)
RUM QUAY
WEST INDIA DOCK (Export)
BLACKWALL BASIN
WEST INDIA & MILLWALL DOCKS
Blackwall Stairs
Blackwall Tunnel
RIVER THAMES
Blackwall Reach
Blackwall Point
High Water Mark of Medium Tides
Ordnance Wharf
Reservoir
DRY DOCKS
Thames Wharf
Bugsby's Reach
Boro Const Bdy
Dolphins
Dolphin
Jetty
Police Station
Pontoons
SOUTH DOCK
SOUTH QUAY
South Dock Entrance
Delta Works
War Meml
Timber Sheds
Travelling Cranes
0
400 m

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Ordnance Survey Plan

Published 1955

Source map scale - 1:10,000

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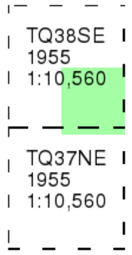
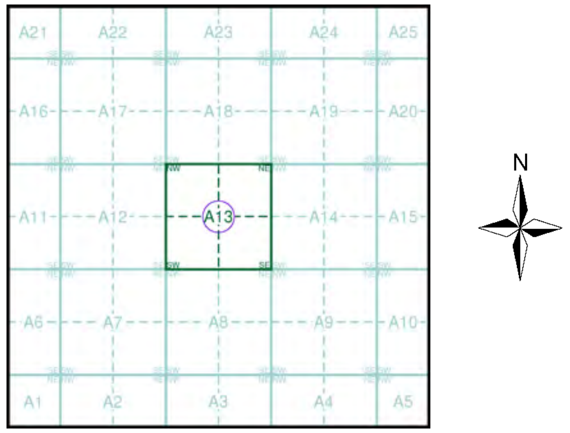
Map Name(s) and Date(s)


TQ38SE
1955
1:10,560
TQ37NE
1955
1:10,560

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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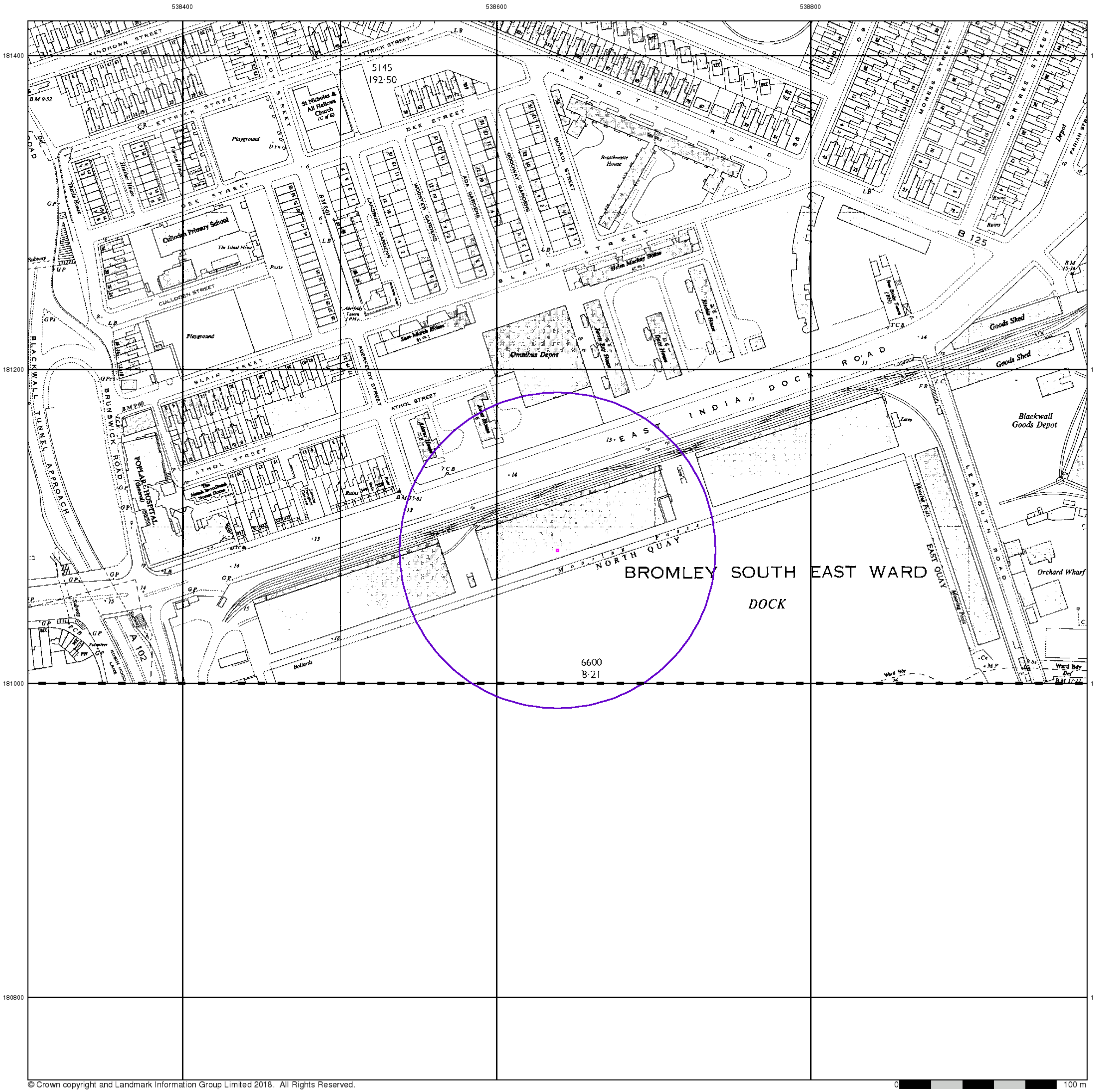
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538600
538800
181400
181200
181000
180800
ANDORN STREET
PATRICK STREET
5145
192·50
St Nicholas & All Hallows Church
Playground
DEE STREET
ABBOTT ROAD
Braithwaite House
Culloden Primary School
CULLODEN STREET
Playground
Omnibus Depot
BLAIR STREET
ATHOL STREET
EAST INDIA DOCK ROAD
B 125
Goods Shed
Goods Shed
Blackwall Goods Depot
BRUNSWICK ROAD
POPLAR HOSPITAL
BLACKWALL TUNNEL APPROACH
A 102
NORTH QUAY
BROMLEY SOUTH EAST WARD
DOCK
EAST QUAY
LEAMOUTH ROAD
Orchard Wharf
6600
8·21

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0 100 m

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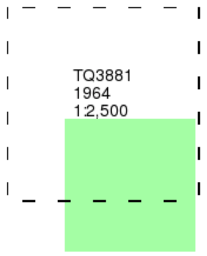
Ordnance Survey Plan

Published 1964

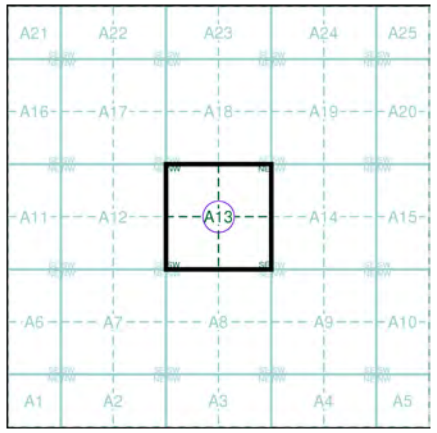
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)


TQ3881
1964
1:2,500

Historical Map - Segment A13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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

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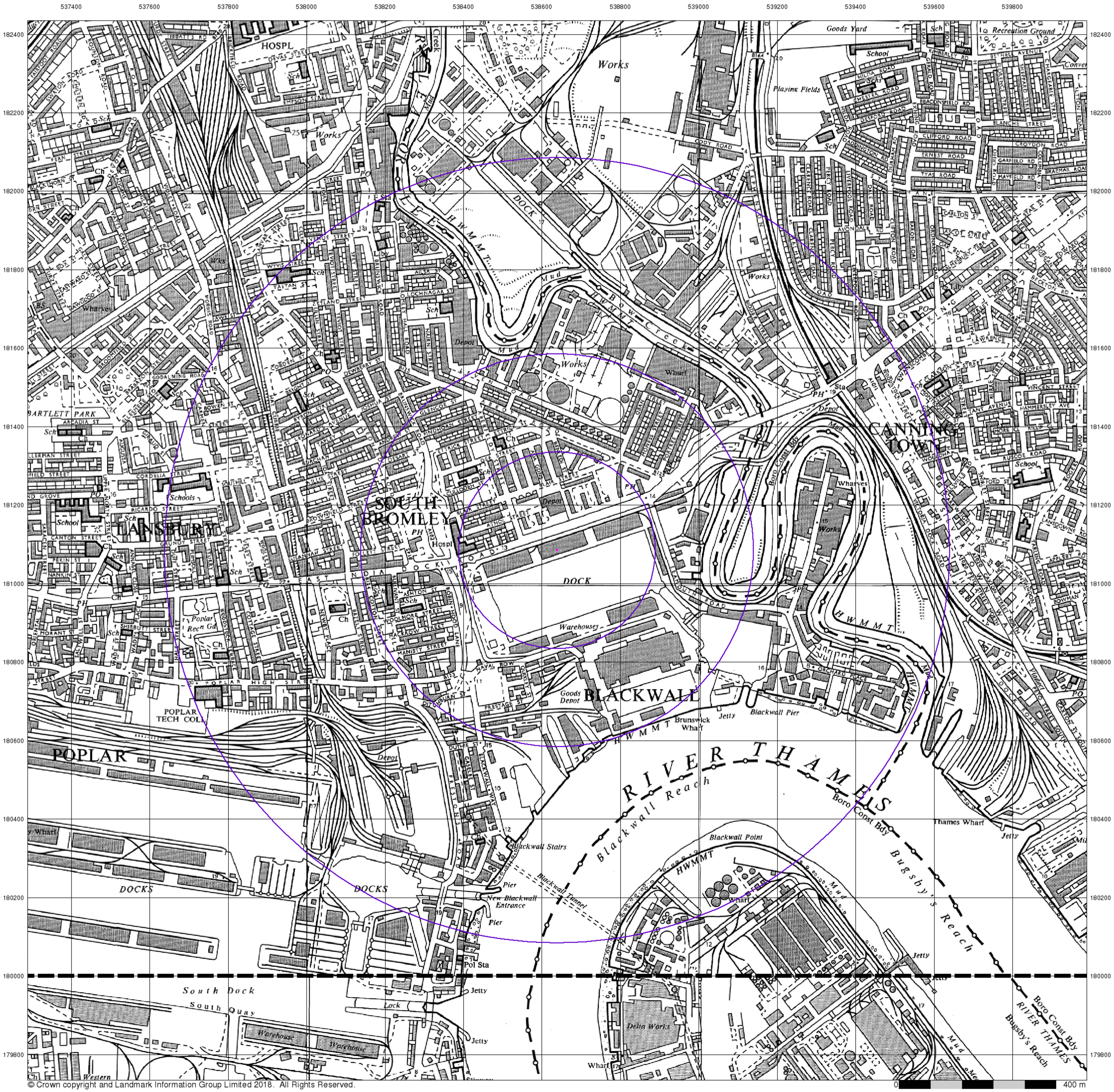
Fax: 0844 844 9951
Web: www.envirocheck.co.uk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180000
179800
HOSPL
Works
Goods Yard
Recreation Ground
School
Playing Fields
DOCK
Works
Wharf
Depot
BARTLETT PARK
LANSBURY
SOUTH BROMLEY
CANNING TOWN
Wharves
DOCK
Warehouses
BLACKWALL
Goods Depot
Brunswick Wharf
Blackwall Pier
POPLAR
POPLAR TECH COLL
RIVER THAMES
Blackwall Reach
Bugsby's Reach
Thames Wharf
Blackwall Point
Blackwall Stairs
Blackwall Tunnel
New Blackwall Entrance
DOCKS
South Dock
South Quay
Warehouse
Delta Works
Pol Sta
0
400 m

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Ordnance Survey Plan

Published 1965 - 1967

Source map scale - 1:10,000

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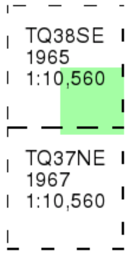
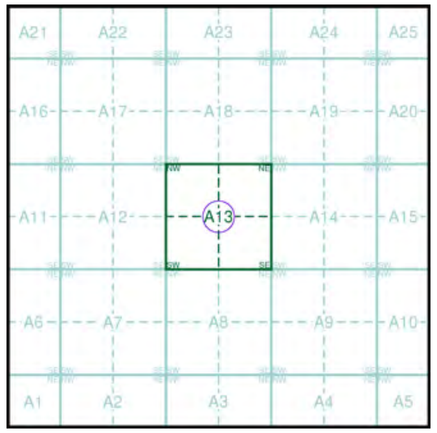
Map Name(s) and Date(s)


TQ38SE
1965
1:10,560
TQ37NE
1967
1:10,560

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

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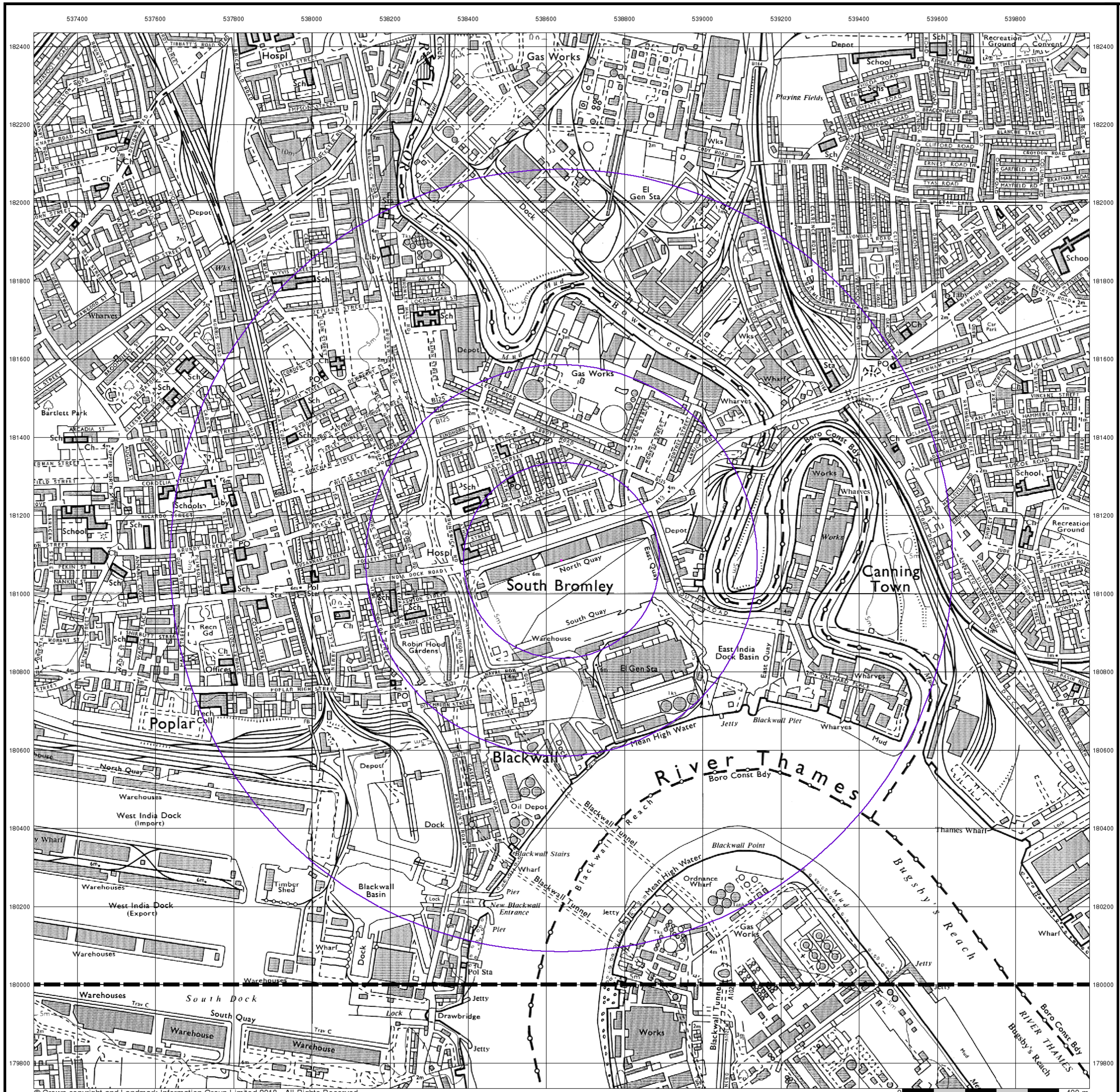
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180400
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179800
Gas Works
Hospl
Playing Fields
Recreation Ground
Convent
School
El Gen Sta
Dock
Depot
Wharves
Bartlett Park
Schools
Bow Creek
Gas Works
Boro Const Bdy
Wharves
Works
Canning Town
North Quay
South Bromley
East Quay
South Quay
Warehouse
Robin Hood Gardens
East India Dock Basin
El Gen Sta
Poplar
Blackwall
Mean High Water
Blackwall Pier
River Thames
North Quay
Warehouses
West India Dock (Import)
Oil Depot
Blackwall Stairs
Blackwall Tunnel
Blackwall Reach
Blackwall Point
Ordnance Wharf
Gas Works
Bugsby's Reach
Thames Wharf
Blackwall Basin
Timber Shed
West India Dock (Export)
New Blackwall Entrance
Pier
Jetty
South Dock
South Quay
Warehouse
Drawbridge
Works
0
400 m

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Ordnance Survey Plan

Published 1974 - 1975

Source map scale - 1:10,000

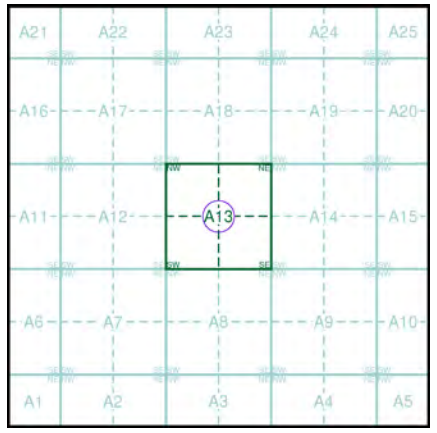
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TQ38SE
1975
1:10,000

TQ37NE
1974
1:10,000

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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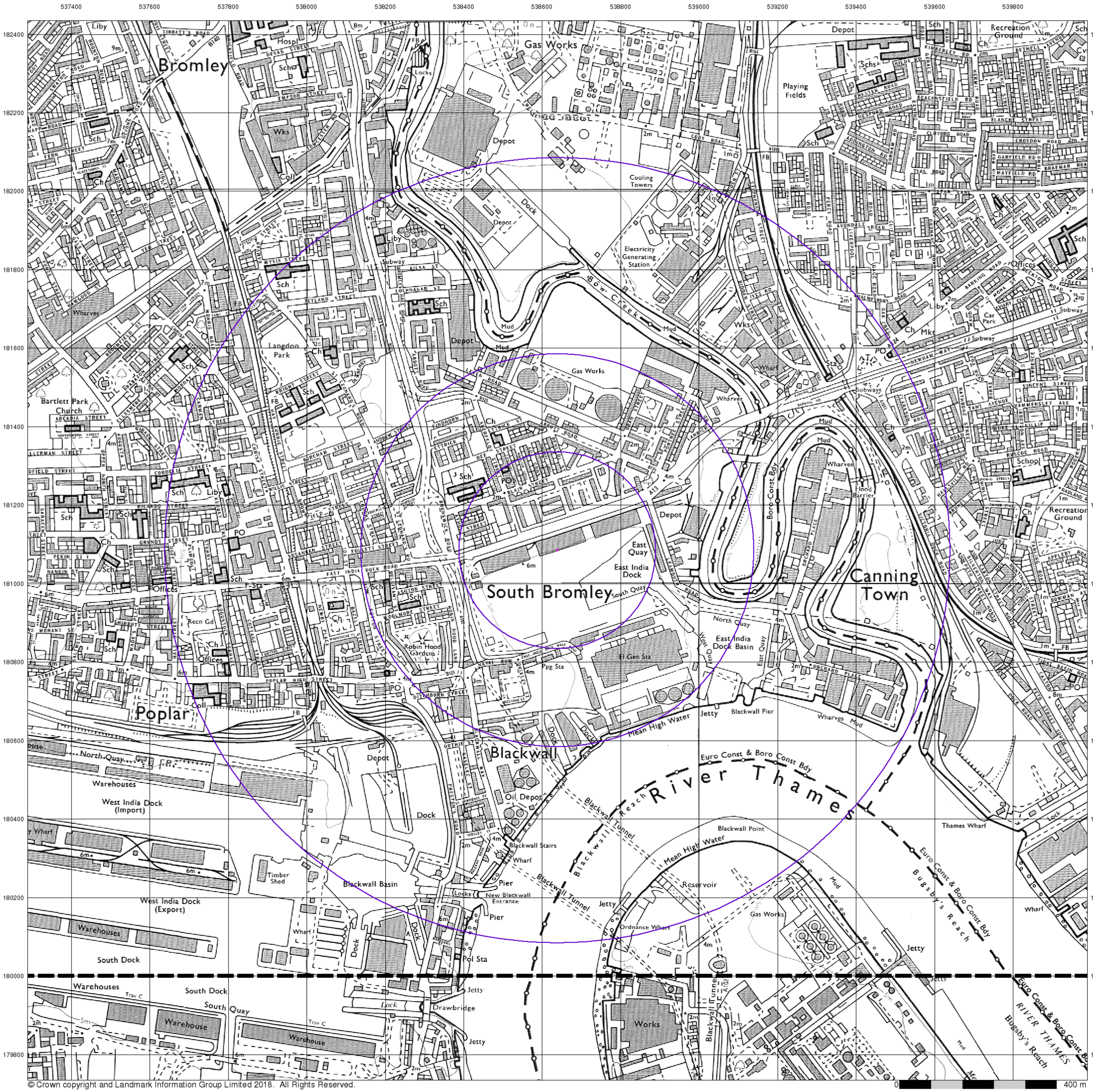
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181000
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180200
180000
179800
Bromley
Gas Works
Depot
Dock
Cooling Towers
Electricity Generating Station
Bow Creek
Playing Fields
Langdon Park
Bartlett Park
Gas Works
South Bromley
East Quay
East India Dock
South Quay
North Quay
East India Dock Basin
El Gen Sta
Canning Town
Poplar
Blackwall
Blackwall Pier
North Quay
Warehouses
West India Dock (Import)
Dock
Oil Depot
River Thames
Blackwall Reach
Blackwall Tunnel
Mean High Water
Blackwall Point
Blackwall Basin
Timber Shed
West India Dock (Export)
Warehouses
South Dock
Reservoir
Ordnance Wharf
Gas Works
Bugsby's Reach
Thames Wharf
Recreation Ground
Robin Hood Gardens
Works
Warehouse
Drawbridge
Jetty
Euro Const & Boro Const Bdy
0
400 m

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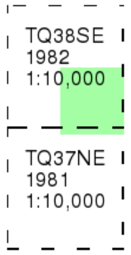
Ordnance Survey Plan

Published 1981 - 1982

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)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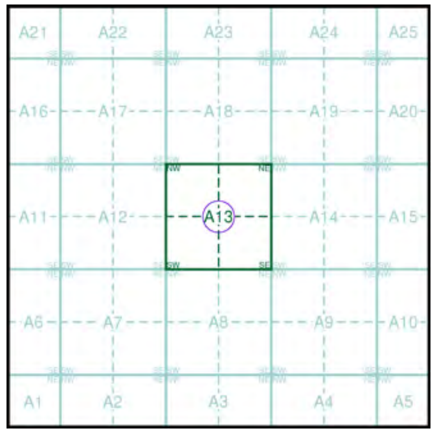
1982
1:10,000

TQ37NE
1981
1:10,000

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

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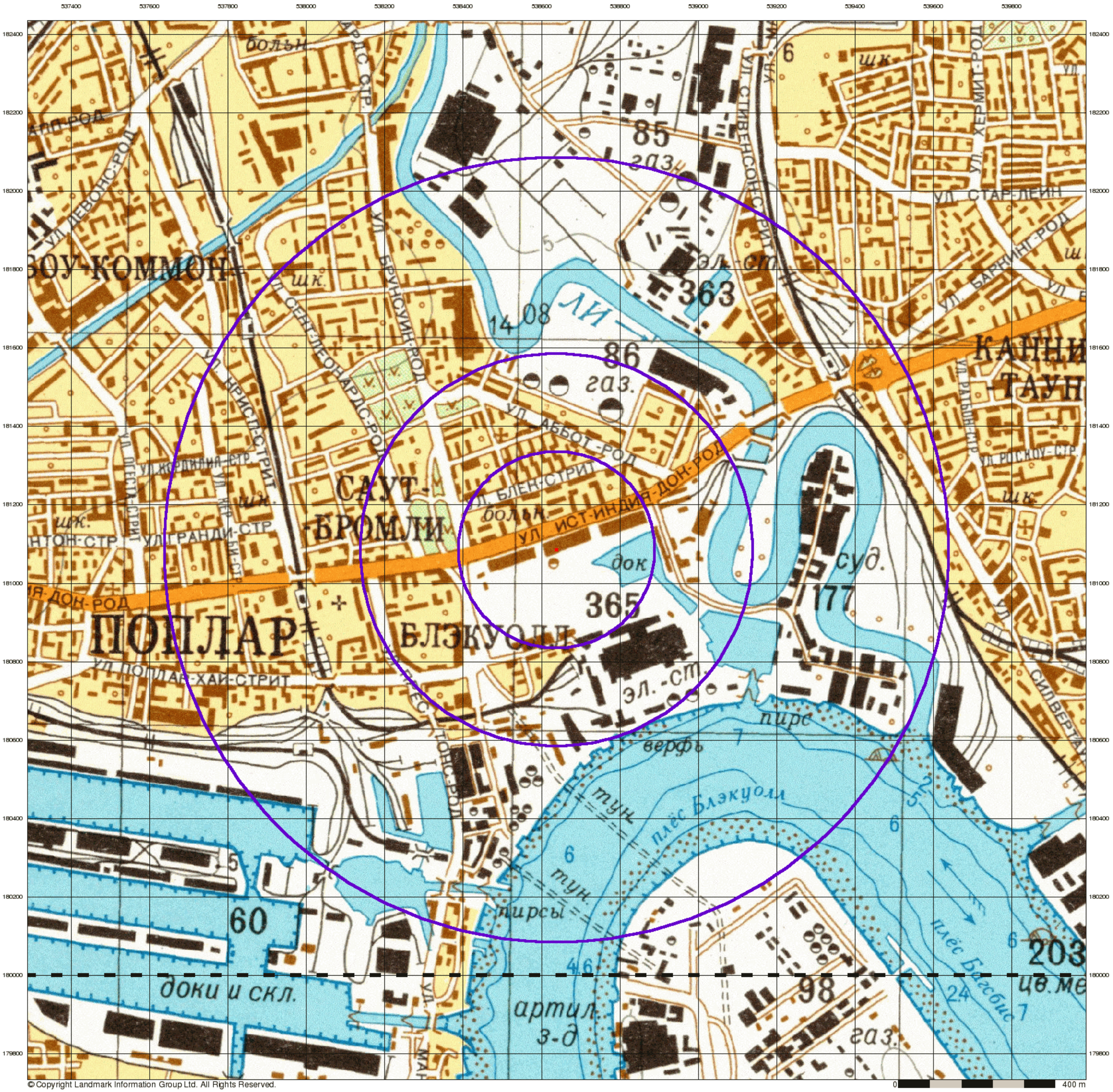
Fax: 0844 844 9951
Web: www.envirocheck.co.uk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179800
больн
БОУ-КОММОН
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газ.
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эл.-ст.
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86
газ.
КАННИ
ТАУН
УЛ. ЭББОТ-РОД
УЛ. БЛЕН-СТРИТ
больн.
УЛ. ИСТ-ИНДИЯ-ДОК-РОД
док
САУТ-БРОМЛИ
ПОПЛАР
БЛЭКУОЛЛ
365
суд.
177
эл.-ст.
пирс
верфь
плёс Блэкуолл
тун.
пирсы
60
доки и скл.
артил. з-д
98
газ.
203
цв. ме
плёс Багсби
УЛ. ПОПЛАР-ХАЙ-СТРИТ
УЛ. ГРАНДИ-СТР.
шк.
0
400 m

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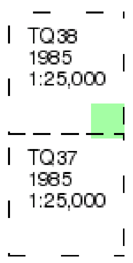
London

Published 1985

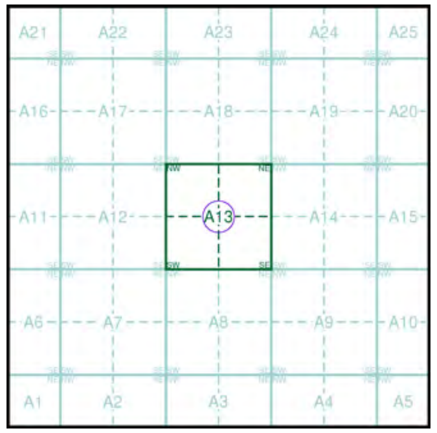
Source map scale - 1:25,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)


TQ38
1985
1:25,000
TQ37
1985
1:25,000

Russian Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
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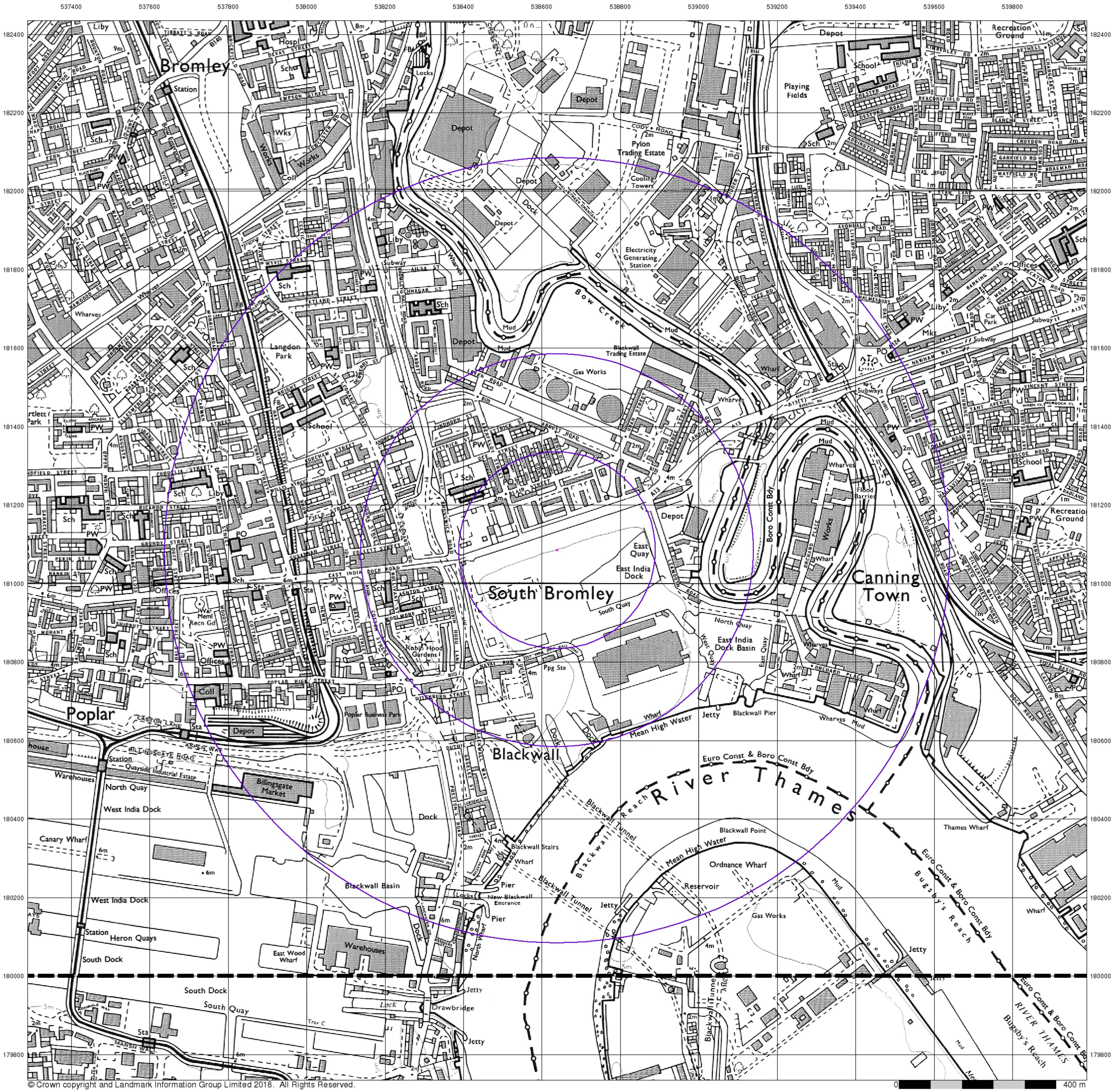
Web:	www.envirocheck.co.uk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180200
180000
179800
Bromley
South Bromley
Canning Town
Poplar
Blackwall
River Thames
Bow Creek
Langdon Park
Gas Works
East India Dock
East India Dock Basin
East Quay
North Quay
South Quay
Blackwall Trading Estate
Electricity Generating Station
Pylon Trading Estate
Cooling Towers
Poplar Business Park
Billingsgate Market
West India Dock
North Quay
South Dock
Heron Quays
Blackwall Basin
Blackwall Tunnel
Blackwall Reach
Blackwall Point
Blackwall Pier
Ordnance Wharf
Reservoir
Bugsby's Reach
Euro Const & Boro Const Bdy
Mean High Water
Thames Wharf
Canary Wharf
Recreation Ground
Playing Fields
0
400 m

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Ordnance Survey Plan

Published 1990

Source map scale - 1:10,000

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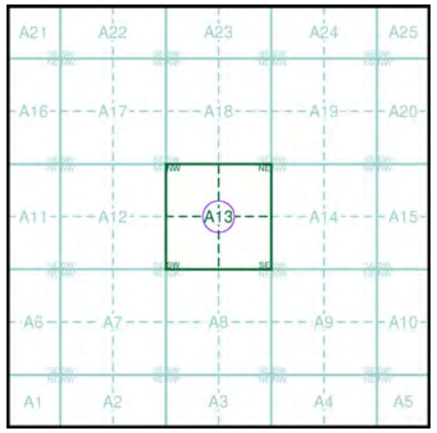
Map Name(s) and Date(s)

TQ38SE
1990
1:10,000

TQ37NE
1990
1:10,000

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

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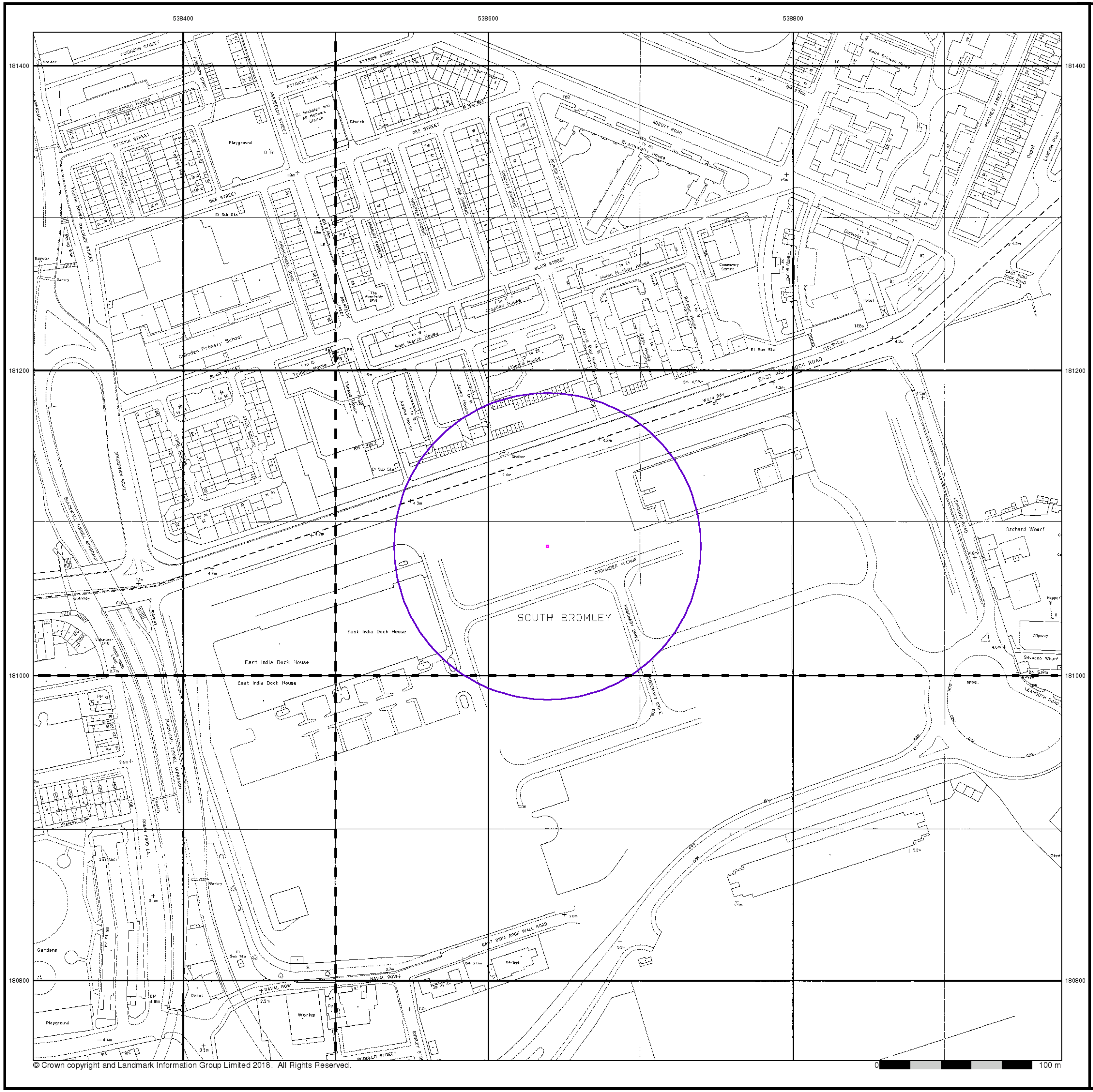
538400
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181200
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180800
EAST INDIA DOCK ROAD
BLAIR STREET
DEE STREET
ETTRICK STREET
ABBOTT ROAD
Dunkeld House
Community Centre
Sam March House
Oban Primary School
Playground
Church
Shelter
El Sub Sta
CORIANDER AVENUE
ROSEMARY DRIVE
SOUTH BROMLEY
East India Dock House
LEAMOUTH ROAD
Orchard Wharf
EAST INDIA DOCK WALL ROAD
NAVAL ROW
Works
Garage
Gardens
Playground
0
100 m

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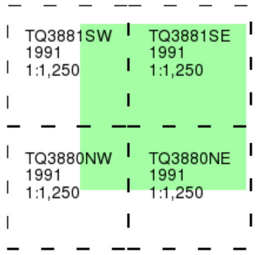
Large-Scale National Grid Data

Published 1991

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)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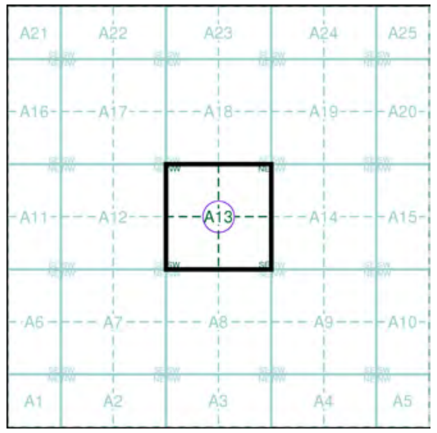
1991
1:1,250
TQ3881SE
1991
1:1,250
TQ3880NW
1991
1:1,250
TQ3880NE
1991
1:1,250

Historical Map - Segment A13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Order Details

Order Number: 157608383_1_1
Customer Ref: 1016734
National Grid Reference: 538640, 181080
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 100

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

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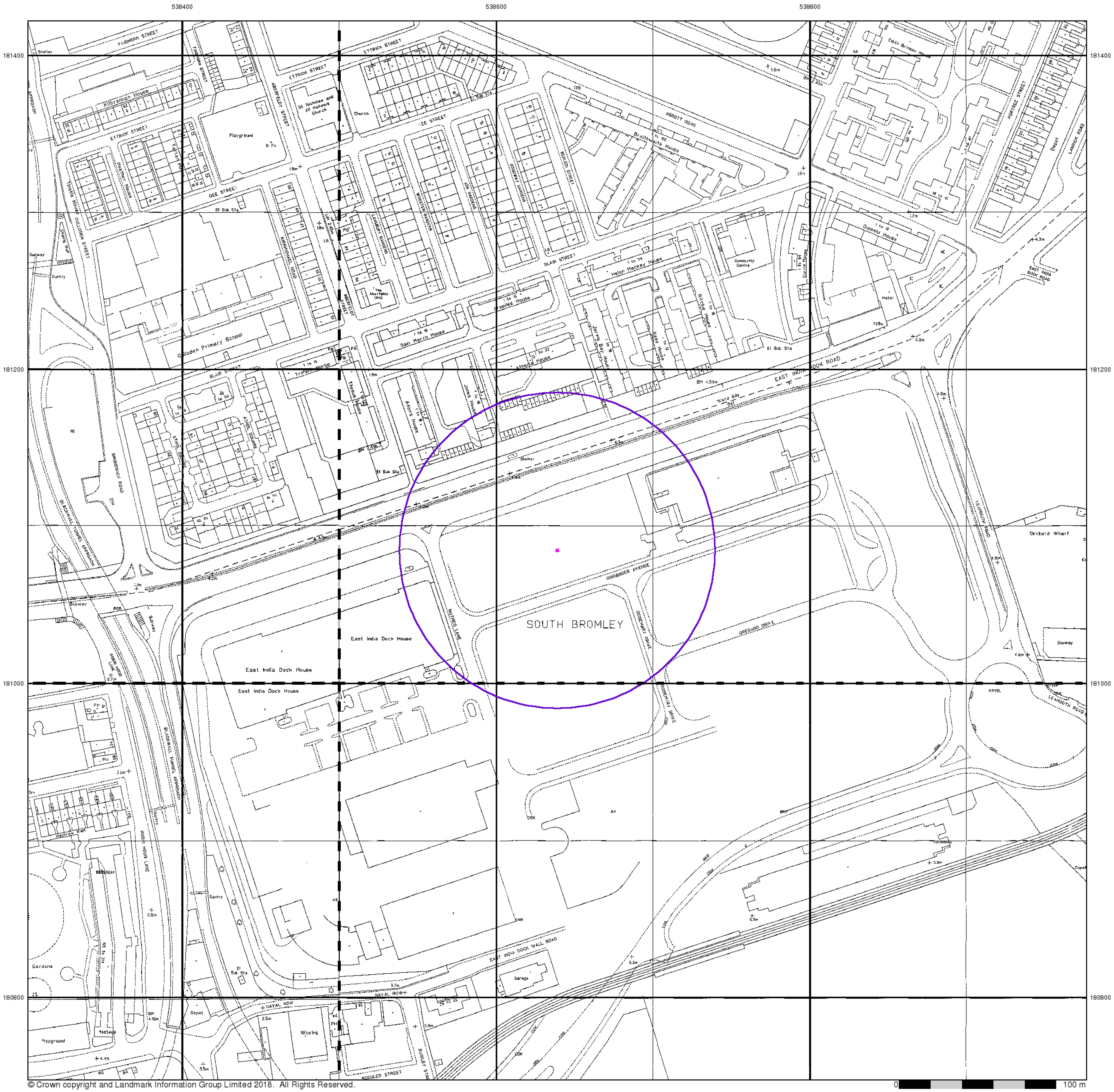
Fax: 0844 844 9951
Web: www.envirocheck.co.uk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SOUTH BROMLEY
CORIANDER AVENUE
EAST INDIA DOCK ROAD
East India Dock House
Culloden Primary School
Orchard Wharf
EAST INDIA DOCK WALL ROAD
NAVAL ROW
Playground
Community Centre
Hotel
Works
Depot
Garage
Gardens
0
100 m

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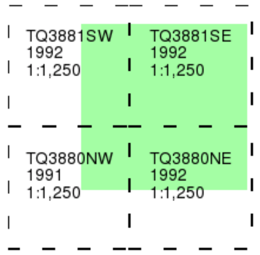
Large-Scale National Grid Data
Published 1991 - 1992
Source map scale - 1:1,250

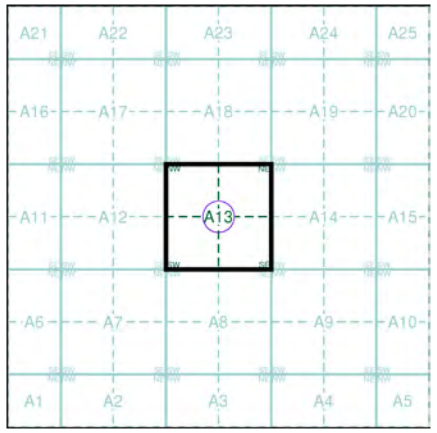
'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



TQ3881SW 1992 1:1,250	TQ3881SE 1992 1:1,250
TQ3880NW 1991 1:1,250	TQ3880NE 1992 1:1,250

Historical Map - Segment A13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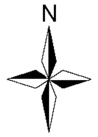


Order Details

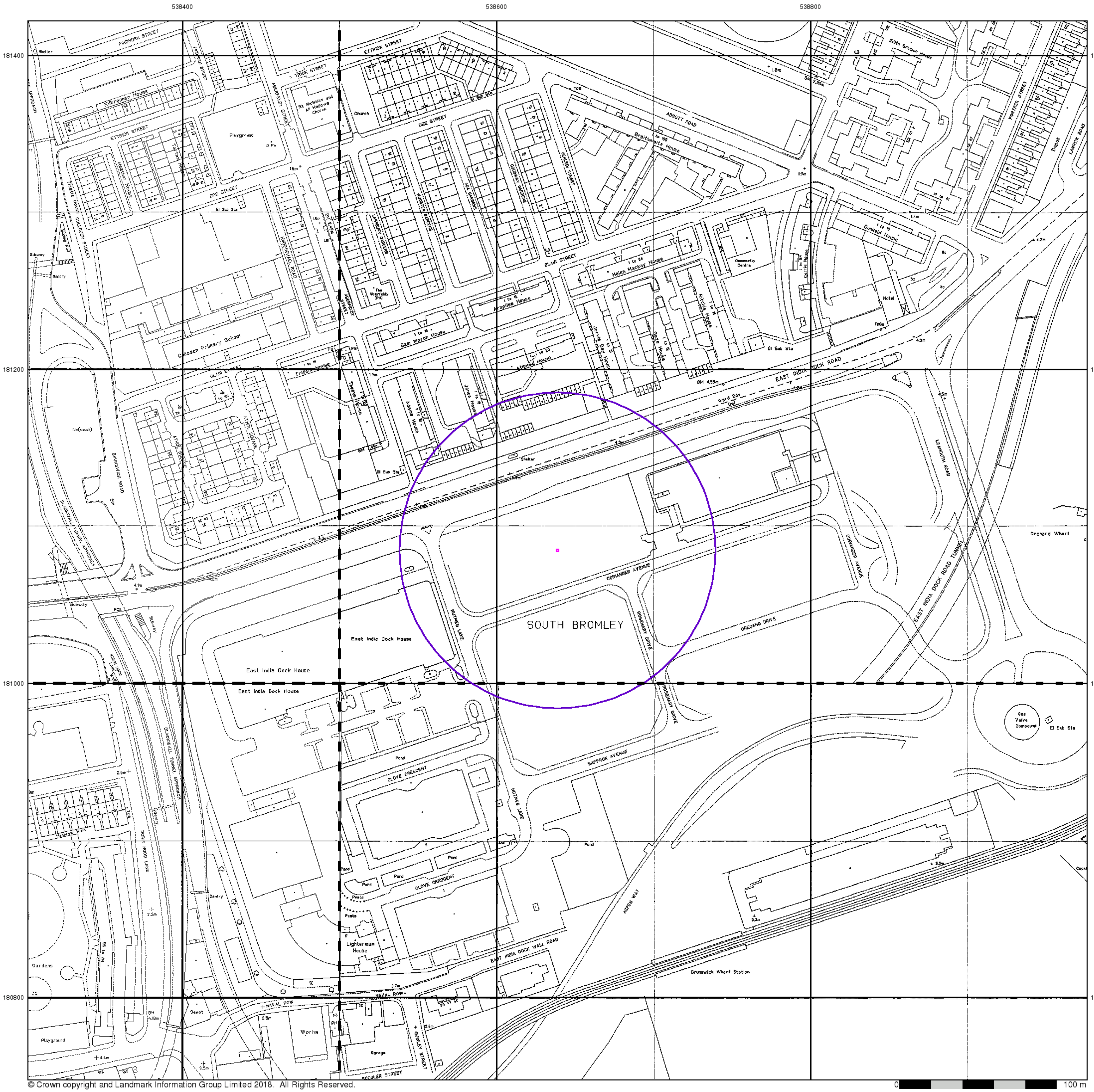
Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Coriander Avenue, London

Landmark®
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk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181000
180800
FINDHORN STREET
ETTRICK STREET
DEE STREET
ABBOTT ROAD
Braithwaite House
BLAIR STREET
Helen Mackay House
Dunkeld House
Community Centre
Hotel
Culloden Primary School
Playground
St Nicholas and All Hallows Church
Church
Sam March House
EAST INDIA DOCK ROAD
Ward Bay
LEAMOUTH ROAD
Nc(scal)
BARCHESTER STREET
BLACKWALL TUNNEL APPROACH
Subway
SOUTH BROMLEY
CORIANDER AVENUE
NUTMEG LANE
ROSEMARY DRIVE
OREGANO DRIVE
SAFFRON AVENUE
East India Dock House
CLOVE CRESCENT
Pond
Lighterman House
EAST INDIA DOCK ROAD TUNNEL
Orchard Wharf
Gas Valve Compound
El Sub Sta
ASPEN WAY
EAST INDIA DOCK WALL ROAD
Brunswick Wharf Station
NAVAL ROW
Works
Garage
Depot
Playground
Gardens
ROBIN HOOD LANE
ORCHARD PLACE
0
100 m

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Large-Scale National Grid Data

Published 1992 - 1995

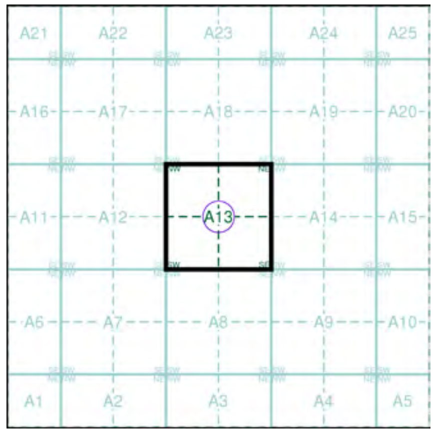
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TQ3881SW 1995 1:1,250	TQ3881SE 1993 1:1,250
TQ3880NW 1992 1:1,250	TQ3880NE 1992 1:1,250

Historical Map - Segment A13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Order Details

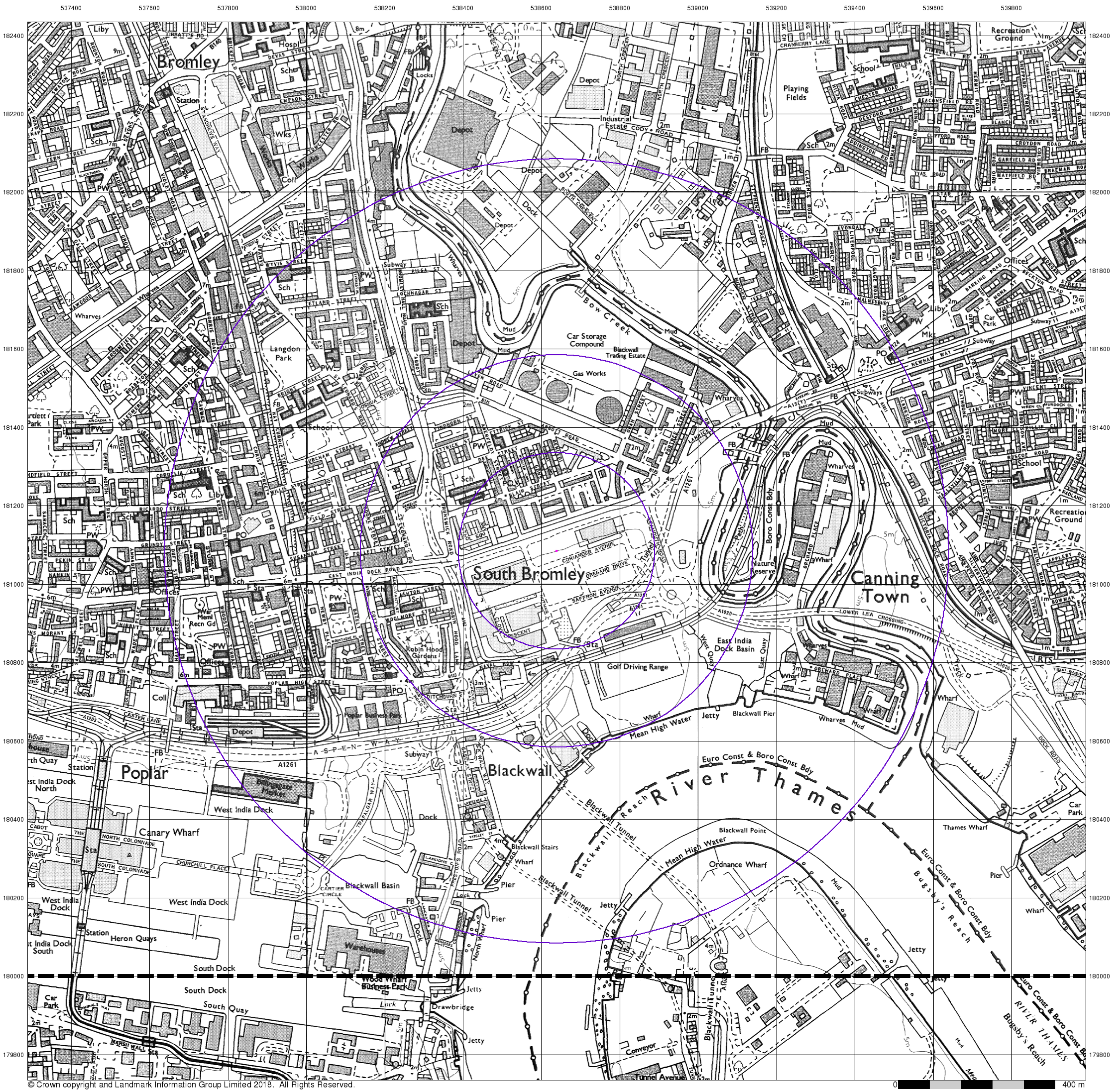
Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Coriander Avenue, London

Landmark®
INFORMATION GROUP

Tel:	0844 844 9952
Fax:	0844 844 9951
Web:	www.envirocheck.co.uk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180400
180200
180000
179800
Bromley
South Bromley
Poplar
Blackwall
Canning Town
River Thames
Bow Creek
Langdon Park
Car Storage Compound
Blackwall Trading Estate
Gas Works
Depot
Industrial Estate
Playing Fields
Recreation Ground
East India Dock Basin
Golf Driving Range
Nature Reserve
Mean High Water
Euro Const & Boro Const Bdy
Blackwall Reach
Blackwall Tunnel
Blackwall Point
Ordnance Wharf
Blackwall Pier
Blackwall Basin
Blackwall Stairs
Billingsgate Market
West India Dock
Canary Wharf
Heron Quays
South Dock
South Quay
Poplar Business Park
Wood Wharf Business Park
Robin Hood Gardens
Thames Wharf
Bugsby's Reach
Coriander Avenue
Saffron Avenue
Aspen Way
Poplar High Street
Newham Way
Lower Lea Crossing
Orchard Place
400 m
0

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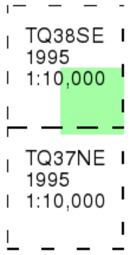
Ordnance Survey Plan

Published 1995

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)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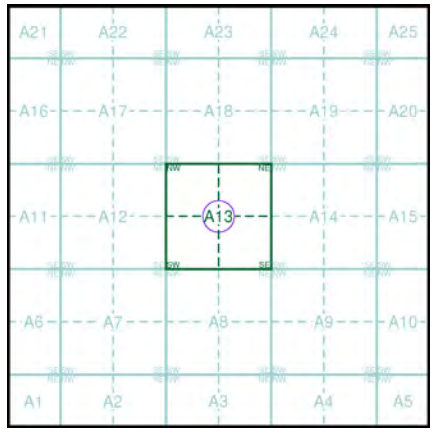
1995
1:10,000
TQ37NE
1995
1:10,000

Historical Map - Slice A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Order Details

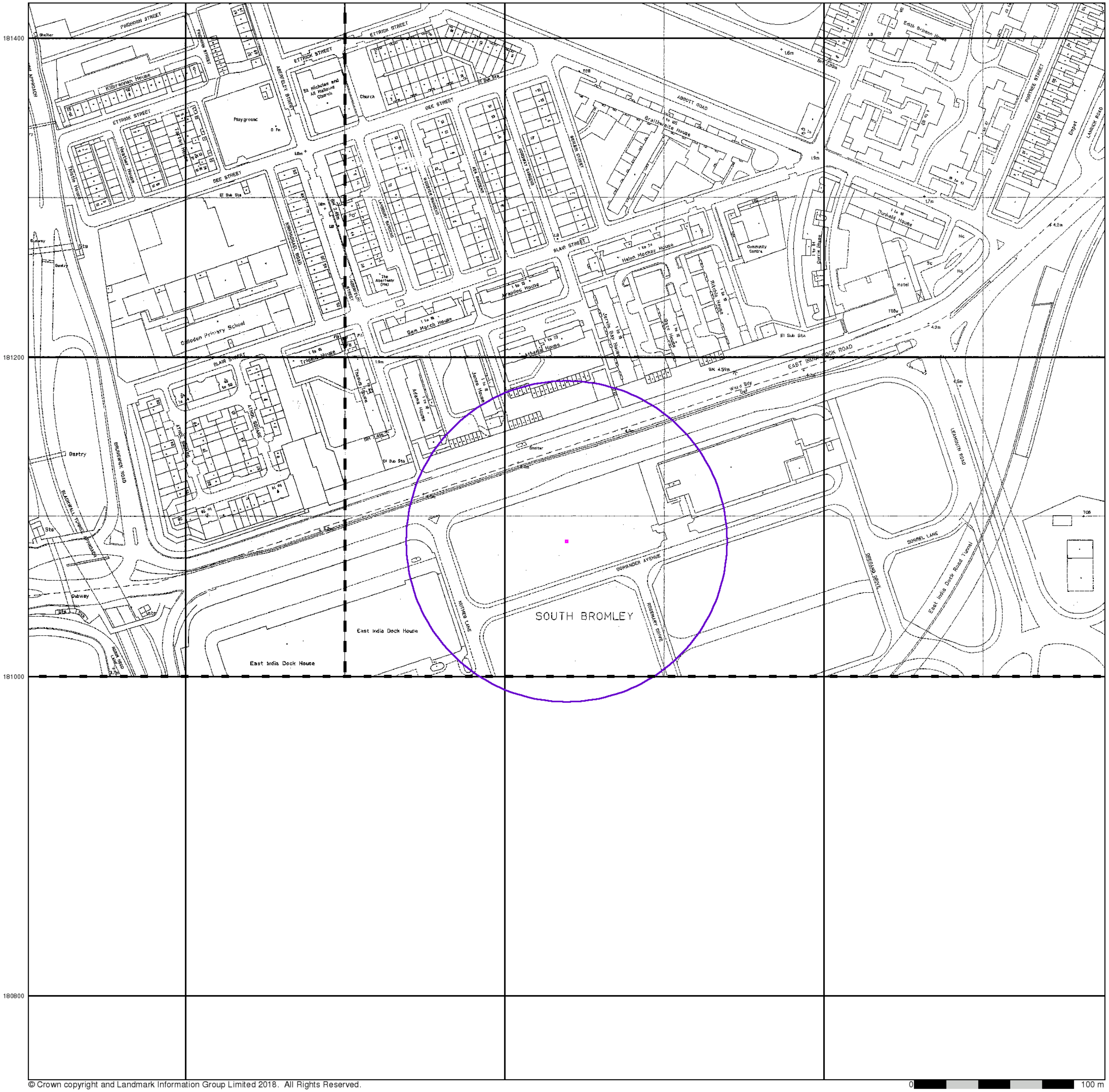
Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

Tel:	0844 844 9952
Fax:	0844 844 9951
Web:	www.envirocheck.co.uk


181400
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ETTRICK STREET
DEE STREET
BLAIR STREET
ABBOTT ROAD
EAST INDIA DOCK ROAD
Calloden Primary School
St Nicholas and All Hallows Church
Church
Playground
Community Centre
Hotel
Durkeld House
Helen Mackay House
Sam March House
Trident House
SOUTH BROMLEY
CORIANDER AVENUE
ROSEMARY DRIVE
NUTMEG LANE
SORREL LANE
OREGANO DRIVE
LEAMOUTH ROAD
East India Dock Road Tunnel
East India Dock House
BROWNFIELD ROAD
Gantry
Subway
El Sub Sta
0
100 m

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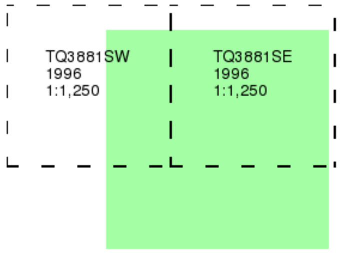
Large-Scale National Grid Data

Published 1996

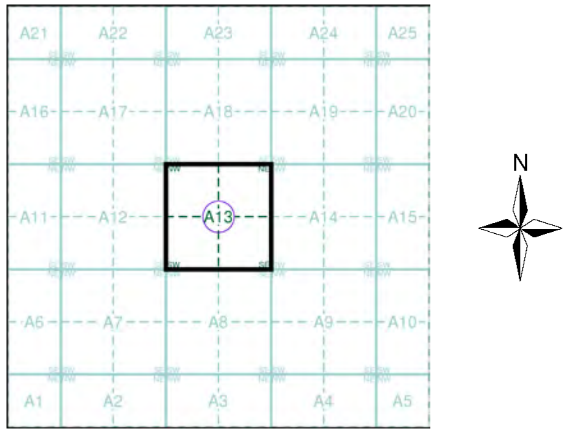
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)


TQ3881SW
1996
1:1,250
TQ3881SE
1996
1:1,250

Historical Map - Segment A13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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Coriander Avenue, London

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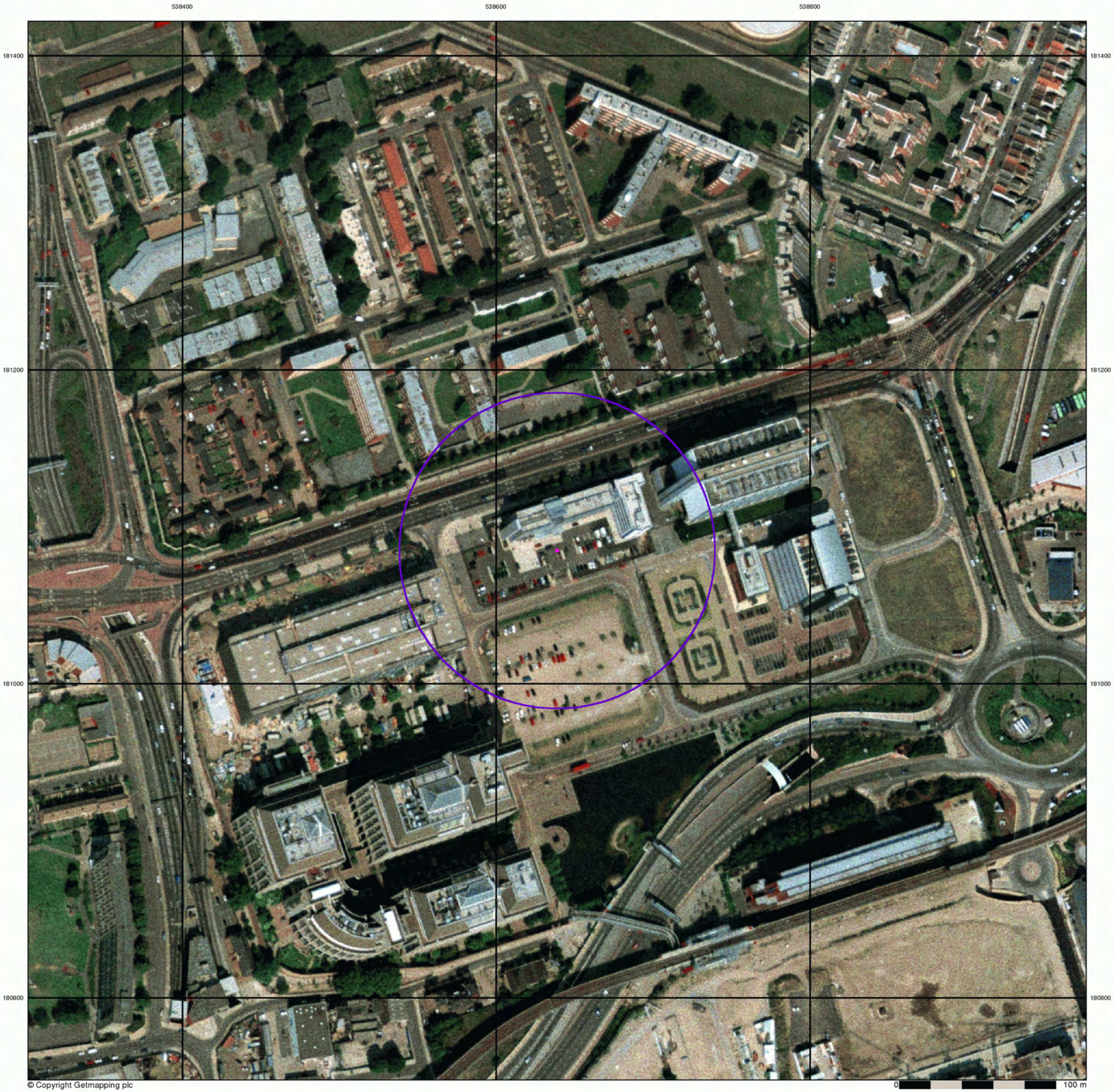
Web:	www.envirocheck.co.uk


538400
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538800
181400
181200
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180800
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100 m

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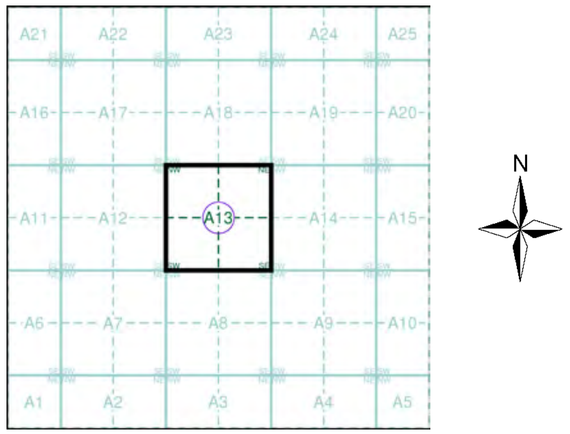
Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

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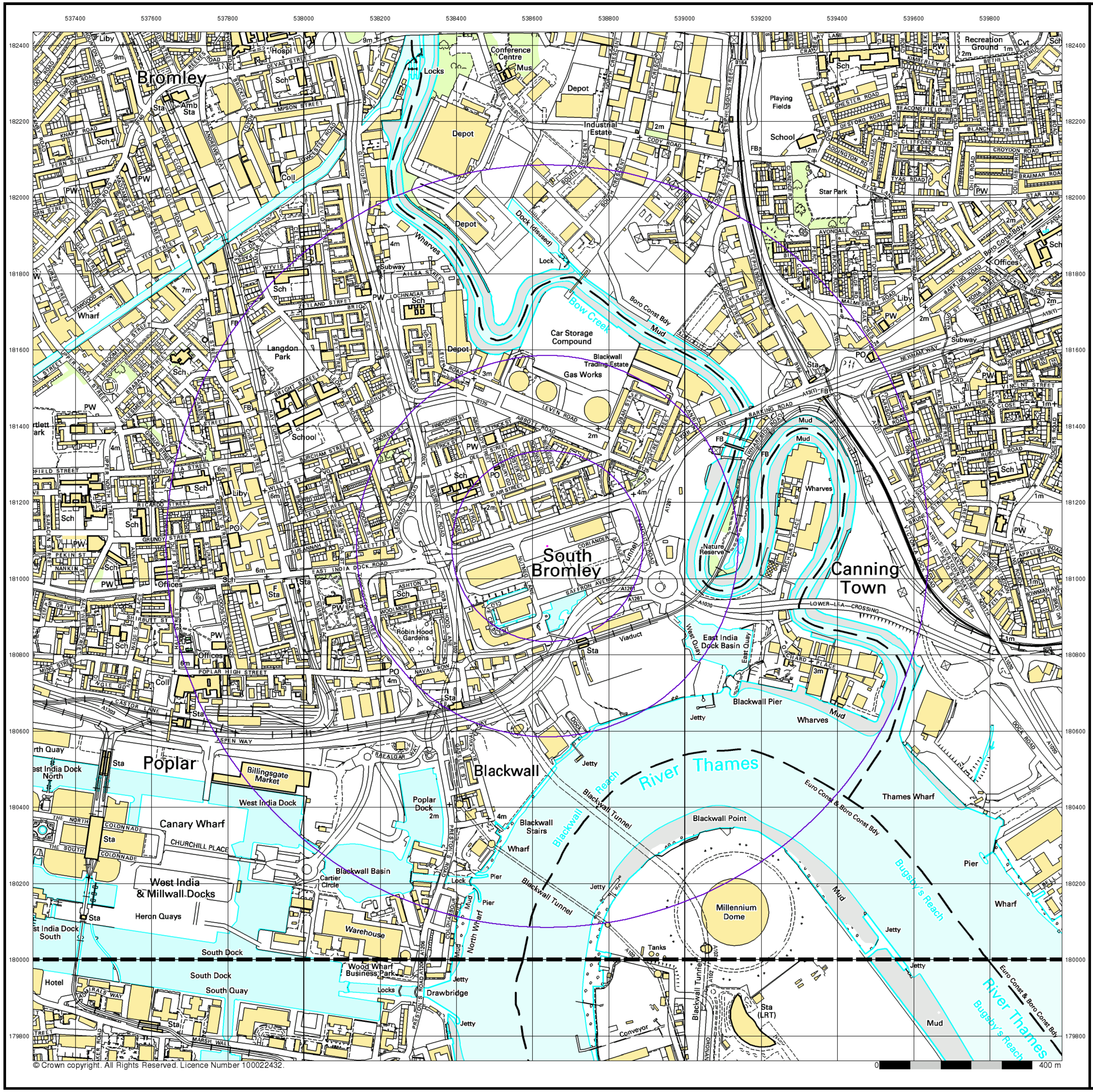
Web:	www.envirocheck.co.uk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180200
180000
179800
Bromley
South Bromley
Canning Town
Poplar
Blackwall
River Thames
Bow Creek
Canary Wharf
West India & Millwall Docks
Millennium Dome
Blackwall Point
East India Dock Basin
Blackwall Basin
Poplar Dock
Billingsgate Market
Heron Quays
South Dock
South Quay
Langdon Park
Star Park
Car Storage Compound
Blackwall Trading Estate
Gas Works
Blackwall Tunnel
Bugsby's Reach
Blackwall Reach
Thames Wharf
Blackwall Pier
Wood Wharf Business Park
Robin Hood Gardens
Conference Centre
Industrial Estate
Nature Reserve
0
400 m

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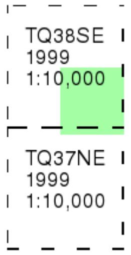
10k Raster Mapping

Published 1999

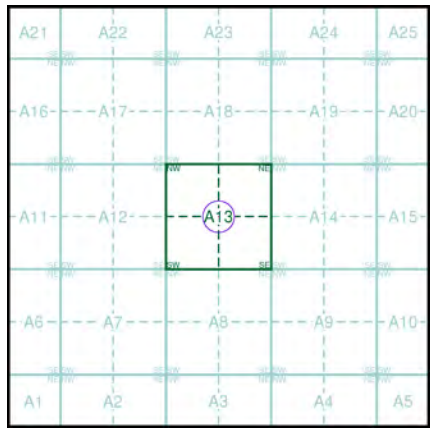
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)


TQ38SE
1999
1:10,000
TQ37NE
1999
1:10,000

Historical Map - Slice A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N

Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

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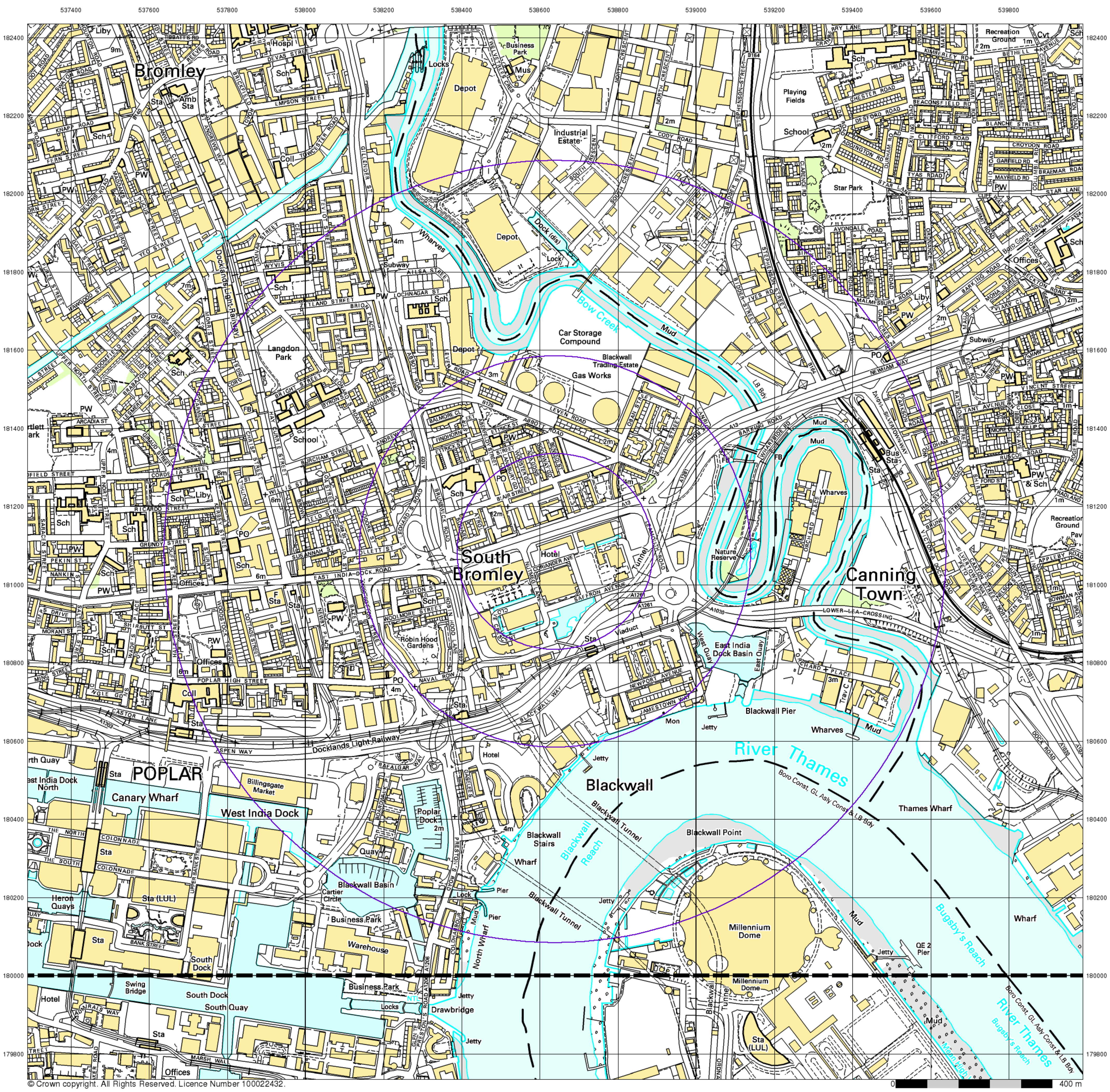
Fax:	0844 844 9951
Web:	www.envirocheck.co.uk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180200
180000
179800
Bromley
South Bromley
Canning Town
POPLAR
Canary Wharf
West India Dock
Blackwall
River Thames
Bow Creek
Langdon Park
Car Storage Compound
Blackwall Trading Estate
Gas Works
East India Dock Basin
Blackwall Basin
Millennium Dome
Blackwall Reach
Bugsby's Reach
Blackwall Tunnel
Blackwall Point
Thames Wharf
Blackwall Pier
Docklands Light Railway
Star Park
Robin Hood Gardens
Billingsgate Market
Heron Quays
South Dock
South Quay
0
400 m

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10k Raster Mapping

Published 2006

Source map scale - 1:10,000

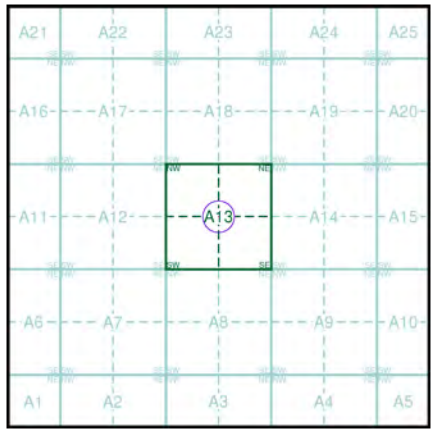
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

TQ38SE
2006
1:10,000

TQ37NE
2006
1:10,000

Historical Map - Slice A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N

Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

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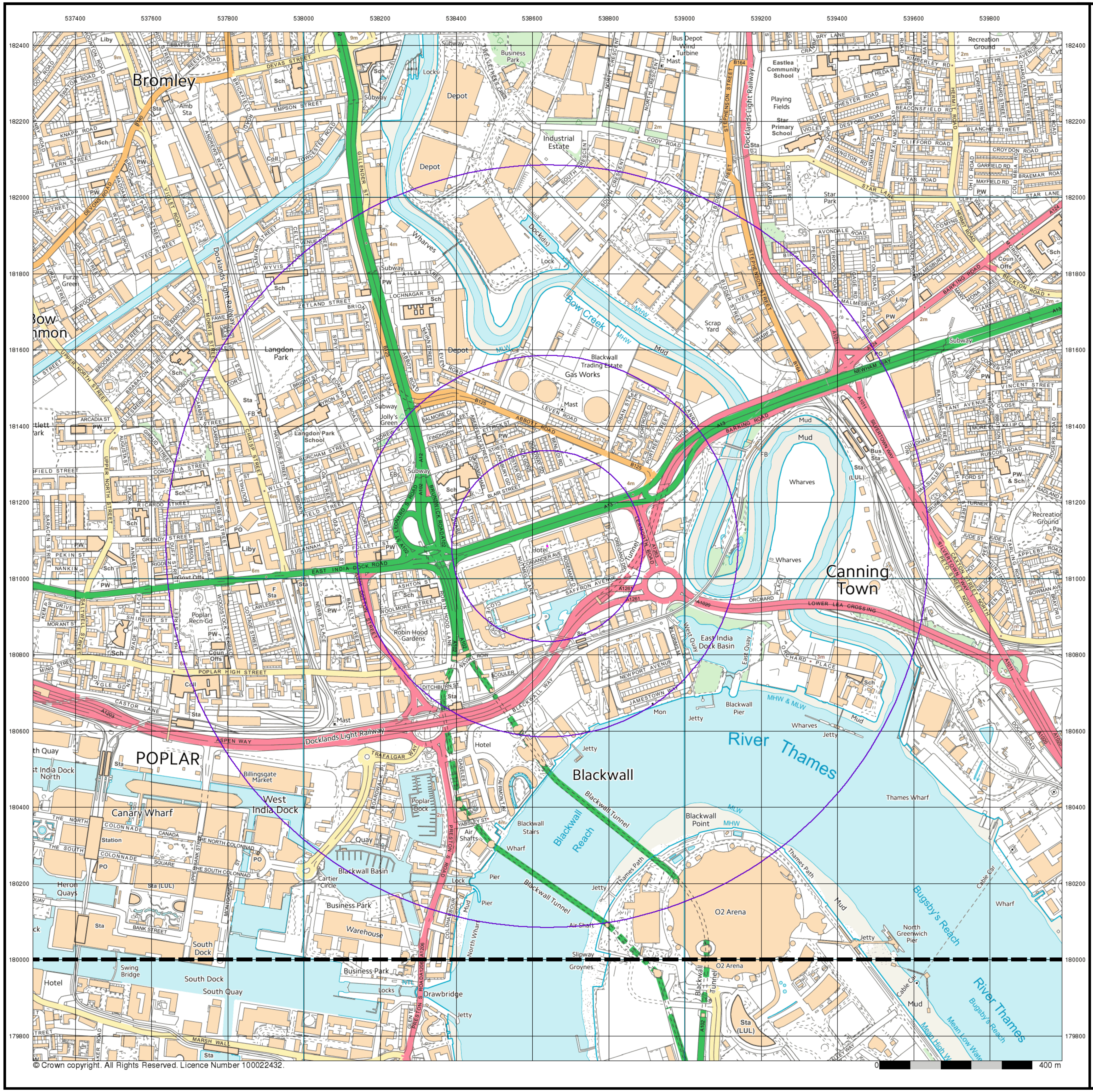
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179800
Bromley
Bow Common
POPLAR
Canary Wharf
West India Dock
Blackwall
Canning Town
River Thames
Bow Creek
Blackwall Reach
Bugsby's Reach
Blackwall Tunnel
Langdon Park
Star Park
O2 Arena
East India Dock Basin
Blackwall Trading Estate
Gas Works
Docklands Light Railway
EAST INDIA DOCK ROAD
BARKING ROAD
NEWHAM WAY
LOWER LEA CROSSING
ASPEN WAY
POPLAR HIGH STREET
0
400 m

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VectorMap Local

Published 2018

Source map scale - 1:10,000

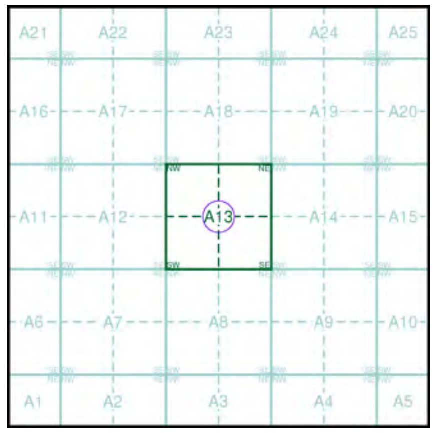
VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

TQ38SE
2018
Variable

TQ37NE
2018
Variable

Historical Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

Tel:	0844 844 9952
Fax:	0844 844 9951
Web:	www.envirocheck.co.uk

Appendix B: Envirocheck Report

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
157608383_1_1

Customer Reference:
1016734

National Grid Reference:
538640, 181080

Slice:
A

Site Area (Ha):
0.01

Search Buffer (m):
1000

Site Details:

Coriander Avenue
London

Client Details:

Mr J Allen
Cundall
Partnership House
4th Floor
Regents Farm Road, Gosforth
Newcastle Upon Tyne
NE3 3AF

Contents

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	33
Hazardous Substances	45
Geological	46
Industrial Land Use	50
Sensitive Land Use	81
Data Currency	82
Data Suppliers	90
Useful Contacts	91

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Scottish Natural Heritage Copyright

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Summary

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (E)	12	1	538650 181085
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	35	1	538639 181050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	85	1	538639 181000
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	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (SW)	302	1	538450 180850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	316	1	538850 180850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	333	1	538350 181250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (N)	335	1	538750 181400
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	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	372	1	538800 180750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	386	1	539000 180950
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	387	1	538900 180800
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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Discharge Consents				
1	Operator: Docklands Light Railway Ltd. Property Type: LAND TRANSPORT + VIA PIPELINES/FREIGHT Location: Docklands Light Railway, Beckton Extension, London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Cntw.0097 Permit Version: 1 Effective Date: 10th October 1989 Issued Date: 10th October 1989 Revocation Date: 8th April 1998 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Saline Estuary Receiving Water: Bow Creek, River Lee **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A14SW (E)	372	2	539000 181000
	Discharge Consents				
2	Operator: London Docklands Development Corporation Property Type: SPORT, AMUSEMENT+RECREATION/GOLF CLUB/GYM/THEME PK/SPA Location: Ecostation Visitor Centre, Limmo Peninsula, Wharfside Road, Canning Town, Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Cntm.2217 Permit Version: 1 Effective Date: 29th March 1996 Issued Date: 29th March 1996 Revocation Date: 1st October 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Lee (Bow Creek) **Status:** **Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	559	2	539100 181400
	Discharge Consents				
3	Operator: Pura Foods (London) Ltd Property Type: MAKING OF FOOD PRODUCTS/DAIRY Location: Orchard Place, Canning Town, London Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.1396 Permit Version: 1 Effective Date: 13th January 1987 Issued Date: 13th January 1987 Revocation Date: 27th June 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Saline Estuary Receiving Water: River Lea (Bow Creek) **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A14NW (E)	573	2	539200 181200
	Discharge Consents				
4	Operator: Pura Foods Ltd Property Type: MAKING OF FOOD PRODUCTS/DAIRY Location: Pura Foods, Orchard Place, London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CNTM.1680 Permit Version: 1 Effective Date: 19th December 1994 Issued Date: 19th December 1994 Revocation Date: 20th September 2005 Discharge Type: Trade Discharges - Cooling Water Discharge Environment: Saline Estuary Receiving Water: Bow Creek **Status:** **Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A14NW (E)	634	2	539250 181250

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: W.W. Howard Bros. Ltd Property Type: Undefined Or Other Location: Crown Wharf, Wharfside Road, Canning Town, London, E16 4tb Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.0192 Permit Version: 1 Effective Date: 17th July 1985 Issued Date: 17th July 1985 Revocation Date: 4th November 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: River Lea **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	643	2	539060 181570
6	**Discharge Consents** Operator: C E G B Property Type: SUB-STATION/ELECTRICITY/GAS/AIR CONDITIONING SUPPLY Location: West Ham Generating Station, Bidder Street, London Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Clcr.0160 Permit Version: 1 Effective Date: 13th November 1964 Issued Date: 13th November 1964 Revocation Date: 30th June 1991 Discharge Type: Trade Effluent Discharge Environment: Freshwater Stream/River Receiving Water: Bow Creek **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A18SE (NE)	646	2	538890 181680
7	**Discharge Consents** Operator: Pure Lard Ltd Property Type: Undefined Or Other Location: Orchard Place, London E14 0jh Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctmr.0180 Permit Version: 1 Effective Date: 1st April 1981 Issued Date: 30th April 1975 Revocation Date: 18th December 1994 Discharge Type: Unknown Discharge Environment: Saline Estuary Receiving Water: Bow Creek (Tidal Thames **Status:** **Authorisation revokedRevoked** Positional Accuracy: Manually corrected supplier location	A14NW (E)	662	2	539300 181100
8	**Discharge Consents** Operator: Schroder Exempt Property Unit Trust Property Type: REAL ESTATE ACTIVITIES/BUYING/SELLING/RENTING Location: The Electra Project Bidder Street, West Ham, London, E16 4st Authority: Environment Agency, Thames Region Catchment Area: Lee-Stort / Thames Reference: Canm.0205 Permit Version: 1 Effective Date: 23rd March 2001 Issued Date: 27th March 2001 Revocation Date: 5th January 2005 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: Bow Creek (River Lee) **Status:** **Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A18SE (N)	675	2	538800 181740

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Discharge Consents				
9	Operator: South Coast Shipping Company Ltd Property Type: WATER TRANSPORT/SEA + INLAND Location: East India Dock, East India Road, Blackwall, London Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.1950 Permit Version: 1 Effective Date: 20th October 1987 Issued Date: 20th October 1987 Revocation Date: 8th May 1990 Discharge Type: Unknown Discharge Environment: Saline Estuary Receiving Water: River Thames **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	681	2	539200 180700
	Discharge Consents				
10	Operator: Rosehaugh Stanhope Developments Plc Property Type: Undefined Or Other Location: Blackwall Engineering Yard, Blackwall Way, Poplar, London Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.2441 Permit Version: 1 Effective Date: 16th May 1988 Issued Date: 16th May 1988 Revocation Date: 17th September 1992 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Saline Estuary Receiving Water: River Thames **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A8SW (S)	686	2	538600 180400
	Discharge Consents				
11	Operator: W.W. Howard Bros. Ltd Property Type: Undefined Or Other Location: Crown Wharf, Wharfside Road, Canning Town, London, E16 4tb Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.0193 Permit Version: 1 Effective Date: 17th July 1985 Issued Date: 17th July 1985 Revocation Date: 4th November 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: River Lea **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	691	2	539190 181500
	Discharge Consents				
12	Operator: National Grid Company Property Type: SUB-STATION/ELECTRICITY/GAS/AIR CONDITIONING SUPPLY Location: West Ham Substation, Cody Road,Canning Town, West Ham, London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CATM.3135 Permit Version: 1 Effective Date: 6th February 1998 Issued Date: 6th February 1998 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Cooling Water Discharge Environment: Saline Estuary Receiving Water: Bow Creek **Status:** **New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	712	2	538730 181790

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**Discharge Consents** Operator: The National Grid Group Plc. Property Type: SUB-STATION/ELECTRICITY/GAS/AIR CONDITIONING SUPPLY Location: West Ham Power Station, Newham,London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CLCR.0275 Permit Version: 1 Effective Date: 28th July 1980 Issued Date: 28th July 1980 Revocation Date: 6th February 1998 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Lee (Bow Creek) **Status:** **Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	712	2	538730 181790
12	**Discharge Consents** Operator: London Docklands Development Corp. Property Type: Undefined Or Other Location: Cody Road Business Centre, Codyroad, London, E16 Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Ctwc.0822 Permit Version: 1 Effective Date: 28th April 1986 Issued Date: 28th April 1986 Revocation Date: 21st January 1997 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Bow Creek /River Lee **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A18NE (N)	718	2	538700 181800
13	**Discharge Consents** Operator: Thames Water Utilities Ltd Property Type: PUMPING STATION ON SEWERAGE NETWORK (WATER COMPANY) Location: Canning Town, Abbey Mills Grp.Canning Townabbey Mills Grp. Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.0598 Permit Version: 2 Effective Date: 3rd September 2010 Issued Date: 3rd September 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Bow Creek **Status:** **Varied under EPR 2010** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	762	2	539200 181600
13	**Discharge Consents** Operator: Thames Water Utilities Ltd Property Type: PUMPING STATION ON SEWERAGE NETWORK (WATER COMPANY) Location: Canning Town, Abbey Mills Grp.Canning Townabbey Mills Grp. Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.0598 Permit Version: 1 Effective Date: 2nd November 1989 Issued Date: 2nd November 1989 Revocation Date: 2nd September 2010 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Bow Creek **Status:** **Temporary Consents (Water Act 1989, Section 113)** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	762	2	539200 181600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Discharge Consents				
14	Operator: John Sisk & Son (Holdings) Limited Property Type: CONSTRUCTION OF BUILDINGS Location: Limmo Crossrail Shaft Site Lower Lea Crossing London E16 1dn Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprnp3220xq Permit Version: 1 Effective Date: 13th February 2012 Issued Date: 13th February 2012 Revocation Date: 21st October 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Saline Estuary Receiving Water: Bow Creek Tidal **Status:** **New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	794	2	539432 181117
	Discharge Consents				
14	Operator: Dragados Sociedad Anonima Property Type: CONSTRUCTION OF BUILDINGS Location: Limmo Crossrail Shaft Site Lower Lea Crossing London E16 1dn Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprnp3220xq Permit Version: 1 Effective Date: 13th February 2012 Issued Date: 13th February 2012 Revocation Date: 21st October 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Saline Estuary Receiving Water: Bow Creek Tidal **Status:** **New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	794	2	539432 181117
	Discharge Consents				
14	Operator: Costain Limited Property Type: CONSTRUCTION OF BUILDINGS Location: Limmo Crossrail Shaft Site Lower Lea Crossing London E16 1dn Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprnp3220xq Permit Version: 2 Effective Date: 22nd October 2012 Issued Date: 22nd October 2012 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Process Water Discharge Environment: Saline Estuary Receiving Water: Tidal Stretch Of River Lee **Status:** **Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	804	2	539440 181145
	Discharge Consents				
14	Operator: Skanska Construction Uk Ltd Property Type: CONSTRUCTION OF BUILDINGS Location: Limmo Crossrail Shaft Site Lower Lea Crossing London E16 1dn Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprnp3220xq Permit Version: 2 Effective Date: 22nd October 2012 Issued Date: 22nd October 2012 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Process Water Discharge Environment: Saline Estuary Receiving Water: Tidal Stretch Of River Lee **Status:** **Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	804	2	539440 181145

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	**Discharge Consents** Operator: London Borough Of Tower Hamlets Property Type: Undefined Or Other Location: Northumberland Wharf Waste Transfer Station, Yabsley St., Poplar, London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTWC.1718 Permit Version: 1 Effective Date: 10th July 1987 Issued Date: 10th July 1987 Revocation Date: Not Supplied Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Saline Estuary Receiving Water: River Thames(Tidal) **Status:** **Transferred from COPA 1974** Positional Accuracy: Located by supplier to within 100m	A8SW (S)	823	2	538470 180280
16	**Discharge Consents** Operator: Costain Limited Property Type: CONSTRUCTION OF BUILDINGS Location: Limmo Crossrail Shaft Site Lower Lea Crossing London E16 1dn Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprnp3220xq Permit Version: 2 Effective Date: 22nd October 2012 Issued Date: 22nd October 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Saline Estuary Receiving Water: Tidal Stretch Of River Lee **Status:** **Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	829	2	539451 181246
16	**Discharge Consents** Operator: Skanska Construction Uk Ltd Property Type: CONSTRUCTION OF BUILDINGS Location: Limmo Crossrail Shaft Site Lower Lea Crossing London E16 1dn Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprnp3220xq Permit Version: 2 Effective Date: 22nd October 2012 Issued Date: 22nd October 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Saline Estuary Receiving Water: Tidal Stretch Of River Lee **Status:** **Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	829	2	539451 181246
17	**Discharge Consents** Operator: Pura Packing Ltd. Property Type: Undefined Or Other Location: Orchard Place, London E14 0jh Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.0617 Permit Version: 1 Effective Date: 6th February 1986 Issued Date: 6th February 1986 Revocation Date: 27th June 1991 Discharge Type: Unknown Discharge Environment: Saline Estuary Receiving Water: River Lee (Bow Creek) **Status:** **Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	855	2	539460 181320

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	**Discharge Consents** Operator: Canary Whalf Contractors (Crossrail) Limited Property Type: CONSTRUCTION OF BUILDINGS Location: Canary Wharf, Isle Of Dogs, ., London Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Npswqd005586 Permit Version: 1 Effective Date: 1st April 2009 Issued Date: 1st April 2009 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Freshwater Stream/River Receiving Water: Blackwell Basin,Wst India Dk N **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	918	2	538003 180424
19	**Integrated Pollution Prevention And Control** Name: Pura Foods Ltd Location: Pura Foods Poplar, Orchard Place, Poplar,,, LONDON, E14 0JH Authority: Environment Agency, Thames Region Permit Reference: Bx3333iy Original Permit Ref: Bx3333iy Effective Date: Not Supplied **Status:** **Valid** Application Type: Application App. Sub Type: New Positional Accuracy: Manually positioned to the road within the address or location Activity Code: 6.8 A(1) (D) (I) Activity Description: Animal Vegetable & Food; Treating Etc Animal Raw Materials (Not Milk) For Food >75T/D Primary Activity: Y	A14SW (SE)	685	2	539266 180810
20	**Local Authority Integrated Pollution Prevention And Control** Name: J Ash & Sons Location: Leven Road, London, E14 0LP Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: PPC_A2_001_02 Dated: Not Supplied Process Type: Production and Processing of Metals Description: Hot dip galvanising **Status:** **Permit Issued** Positional Accuracy: Located by supplier to within 10m	A18SW (N)	487	3	538503 181552
21	**Local Authority Pollution Prevention and Controls** Name: Orchard Wharf Service Station Location: Orchard Wharf, Leamouth Road, Isle of Dogs, LONDON, E14 0JG Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: PPC_1(14)_009_02 Dated: 3rd September 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status:** **Authorised** Positional Accuracy: Automatically positioned to the address	A13SE (E)	322	3	538960 181079
22	**Local Authority Pollution Prevention and Controls** Name: London Galvanisers Ltd Location: Laven Road, LONDON, E14 0LP Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: Not Given Dated: 20th November 1997 Process Type: Local Authority Air Pollution Control Description: PG2/2 Hot dip galvanising processes **Status:** **Authorised** Positional Accuracy: Automatically positioned to the address	A18SW (N)	479	3	538521 181549
22	**Local Authority Pollution Prevention and Controls** Name: J Ash & SonsLondon Galvanisers Location: Leven Road, LONDON, E14 0LP Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: PPC_A2_001_02 Dated: 30th July 2002 Process Type: Local Authority Pollution Prevention and Control Description: PG2/2 Hot dip galvanising processes **Status:** **Transferred to LAIPPC** Positional Accuracy: Located by supplier to within 10m	A18SW (N)	487	3	538503 181552

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	**Local Authority Pollution Prevention and Controls** Name: Star Cotton Street Location: 40 Cotton Street, Isle Of Dogs, LONDON, E14 0EL Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: PPC_1(14)_012_02 Dated: 23rd October 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A12SE (W)	521	3	538132 180967
24	**Local Authority Pollution Prevention and Controls** Name: Lowe Furniture Services Ltd Location: Lanrick Road, LONDON, E14 0JF Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: NOT GIVEN Dated: 6th February 1993 Process Type: Local Authority Air Pollution Control Description: PG6/2 Manufacture of timber and wood-based products **Status: Authorised** Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	524	3	538996 181467
25	**Local Authority Pollution Prevention and Controls** Name: M & J Reuben Location: Essex Wharf, Barking Road, London, E16 Authority: London Borough of Newham, Environmental Health Department Permit Reference: Not Supplied Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/33 Wood coating **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	633	4	539194 181387
26	**Local Authority Pollution Prevention and Controls** Name: Pura Food Products Ltd Location: 30 Orchard Place, LONDON, E14 0JH Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: Mcr/V3/057/E1 Dated: 17th November 1994 Process Type: Local Authority Air Pollution Control Description: PG6/25 Vegetable oil extraction and fat and oil refining **Status: Authorisation has varied** Positional Accuracy: Manually positioned to the address or location	A14NW (E)	654	3	539286 181175
27	**Local Authority Pollution Prevention and Controls** Name: Bright Clean Dry Cleaners Location: 7 Vesey Path, Chrisp Street Market, London, E14 6BT Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: PPC_6(46)_008_01 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A12SW (W)	770	3	537869 181073
28	**Local Authority Pollution Prevention and Controls** Name: Westmoor Concrete Ltd Location: 11a South Crescent, Cody Road, Canning Town, London, E16 4sr Authority: London Borough of Newham, Environmental Health Department Permit Reference: LA-PPC 116/10 Dated: 26th August 2010 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the road within the address or location	A18NE (N)	853	4	538741 181931
29	**Local Authority Pollution Prevention and Controls** Name: Professional Dry Cleaners Location: 21 Market Way, Chrisp Street Market, London, E14 6AH Authority: London Borough of Tower Hamlets, Environmental Health Department Permit Reference: PPC_6(46)_009_01 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A12NW (W)	868	3	537787 181248

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	**Local Authority Pollution Prevention and Controls** Name: Cemex Uk Materials Ltd (South East) Location: Site 10a Cody Business Centre, Off Manor Road, East Ham, London, E16 3JR Authority: London Borough of Newham, Environmental Health Department Permit Reference: LA-PPC 047/06 Dated: 27th February 1992 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status:** **Permitted** Positional Accuracy: Located by supplier to within 10m	A18NW (N)	909	4	538632 181993
	Nearest Surface Water Feature	A13SW (SW)	124	-	538587 180973
31	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: BOW Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: Not Supplied Incident Reference: NE910032 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (E)	373	2	539000 180995
32	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: BLACKWALL Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 24th January 1992 Incident Reference: SE920019 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	418	2	538800 180700
33	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Leven Road, POPLAR Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Urban Runoff Note: Confirmed As A Pollution Incident Incident Date: 3rd July 1995 Incident Reference: NE950389 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SW (N)	438	2	538500 181500
34	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: BLACKWELL Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Yes Incident Date: 29th July 1992 Incident Reference: SE920236 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	487	2	538600 180600
35	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Leamouth Road, Canning To Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed incident Incident Date: 22nd February 1999 Incident Reference: THSE1999042078 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	528	2	539000 180700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
36	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Leven Road, POPLAR Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Urban Runoff Note: Confirmed As A Pollution Incident Incident Date: 16th September 1991 Incident Reference: NE910463 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SW (NW)	568	2	538400 181600
37	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Pura Foods, LONDON, E14 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 21st September 1998 Incident Reference: THSE1998040638 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	584	2	539200 181245
38	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Orchard Place, LONDON, E14 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 14th October 1997 Incident Reference: THSE1997030550 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	585	2	539200 181250
38	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: A13 At Canning Town Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th June 1990 Incident Reference: NE900216 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	602	2	539200 181300
38	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Orchard Place, LONDON, E14 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 11th September 1997 Incident Reference: THSE1997029563 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	648	2	539250 181300
39	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Canning Town Flyover Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 5th October 1993 Incident Reference: SE930332 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	644	2	539200 181400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Pollution Incidents to Controlled Waters				
40	Property Type: Not Given Location: Mayer Parry Recycling Centre Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: Not Supplied Incident Reference: SE930221 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	692	2	539100 181600
	Pollution Incidents to Controlled Waters				
41	Property Type: Not Given Location: LONDON, E14 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 13th May 1996 Incident Reference: SE960205 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	694	2	539300 181295
	Pollution Incidents to Controlled Waters				
41	Property Type: Not Given Location: Orchard Place, Leamouth Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 18th November 1991 Incident Reference: SE910314 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	696	2	539300 181300
	Pollution Incidents to Controlled Waters				
41	Property Type: Not Given Location: LONDON, E14 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 13th May 1996 Incident Reference: SE960206 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	699	2	539305 181295
	Pollution Incidents to Controlled Waters				
41	Property Type: Not Given Location: LONDON, E14 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 4th January 1998 Incident Reference: 36406 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	701	2	539305 181300
	Pollution Incidents to Controlled Waters				
42	Property Type: Not Given Location: Waterside Road, CANNING TOWN, E16 Authority: Environment Agency, Thames Region Pollutant: General Note: Not Supplied Incident Date: 3rd October 1998 Incident Reference: THSE1998041108 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	696	2	539200 181495

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Waterside Road, CANNING TOWN, E16 Authority: Environment Agency, Thames Region Pollutant: General Note: Not Supplied Incident Date: 30th October 1998 Incident Reference: THSE1998041111 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	699	2	539200 181500
43	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: CANNING TOWN Authority: Environment Agency, Thames Region Pollutant: Chemicals - Unknown Note: No Incident Date: 22nd November 1995 Incident Reference: SE950552 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NW (N)	717	2	538600 181800
43	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: CANNING TOWN Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Fire water / Foam Note: Not Supplied Incident Date: 26th March 1996 Incident Reference: SE960128 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NW (N)	767	2	538600 181850
44	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Orchard Place, LONDON, E14 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 8th July 1998 Incident Reference: THSE1998039642 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	725	2	539300 181380
45	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: BOW Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th December 1994 Incident Reference: SE940412 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A18NW (N)	729	2	538500 181800
46	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Bidder Street Authority: Environment Agency, Thames Region Pollutant: Chemicals - Unknown Note: Confirmed As A Pollution Incident Incident Date: 20th July 1993 Incident Reference: SE930230 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	762	2	539200 181600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Pollution Incidents to Controlled Waters				
47	Property Type: Not Given Location: GREENWICH Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 12th February 1997 Incident Reference: THSE1997031848 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	765	2	538850 180350
	Pollution Incidents to Controlled Waters				
48	Property Type: Not Given Location: Trafalgar Way Authority: Environment Agency, Thames Region Pollutant: General Note: No Pollution Found Incident Date: 28th April 1998 Incident Reference: 38552 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	798	2	538230 180400
	Pollution Incidents to Controlled Waters				
49	Property Type: Not Given Location: Northumberland Wharf Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th March 1991 Incident Reference: SE910057 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SW (S)	821	2	538400 180300
	Pollution Incidents to Controlled Waters				
50	Property Type: Not Given Location: Cody Road, LONDON, E16 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 1st November 1997 Incident Reference: THSE1997030129 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NW (N)	877	2	538500 181950
	Pollution Incidents to Controlled Waters				
51	Property Type: Not Given Location: Blackwall Yard Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th April 1992 Incident Reference: SE920105 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SW (S)	917	2	538400 180200
	Pollution Incidents to Controlled Waters				
52	Property Type: Not Given Location: North Dock, West India Dock, KINGS SUTTON Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 15th December 1998 Incident Reference: THSE1998041413 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	951	2	537980 180400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	River Quality Name: Lee GQA Grade: River Quality D Reach: Carpenters Road - Thames Estimated Distance (km): 6.8 Flow Rate: Flow less than 5 cumecs Flow Type: River Year: 2000	A13SE (E)	327	2	538965 181072
53	**River Quality Chemistry Sampling Points** Name: Lee Reach: Carpenters Road To Thames Estimated Distance: 6.80 Objective: Not Supplied Positional Accuracy: Located by supplier to within 100m Year: 1990 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1993 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1994 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 1996 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 1997 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 1998 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 1999 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 2000 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2001 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2002 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2003 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 2004 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 2005 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2006 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 2007 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Not Supplied Year: 2008 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Not Supplied Year: 2009 GQA Grade: River Quality Chemistry GQA Grade C - Fairly Good Compliance: Not Supplied	A19SW (NE)	699	2	539200 181500
54	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 18th November 2013 Incident Reference: 1177082 Water Impact: Category 3 - Minor Incident Air Impact: Category 3 - Minor Incident Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Agricultural Materials And Wastes: Other Agricultural Material Or Waste Pollutant: General Biodegradable Materials And Wastes: Food And Drink	A18SW (N)	479	2	538495 181541

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
55	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 23rd October 2006 Incident Reference: 446766 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Oils And Fuel: Mixed/Waste Oils Pollutant: Specific Waste Materials: Batteries Pollutant: Specific Waste Materials: Tyres Pollutant: Specific Waste Materials: Vehicles And Vehicle Parts	A18NW (N)	731	2	538377 181767
56	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 23rd October 2006 Incident Reference: 445640 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Inert : Construction / Demolition Material Pollutant: Oils And Fuel: Mixed/Waste Oils Pollutant: Specific Waste Materials: Batteries Pollutant: Specific Waste Materials: Metal Wastes Pollutant: Specific Waste Materials: Tyres Pollutant: Specific Waste Materials: Vehicles And Vehicle Parts	A18NW (NW)	773	2	538315 181786
57	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 16th April 2015 Incident Reference: 1329501 Water Impact: Category 3 - Minor Incident Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants And Effects: Dust	A18NE (N)	781	2	538725 181861
58	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 23rd October 2006 Incident Reference: 446533 Water Impact: Category 3 - Minor Incident Air Impact: Category 4 - No Impact Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Specific Waste Materials: Batteries Pollutant: Specific Waste Materials: Metal Wastes Pollutant: Specific Waste Materials: Tyres Pollutant: Specific Waste Materials: Vehicles And Vehicle Parts	A18NW (N)	825	2	538328 181849
58	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 2nd February 2006 Incident Reference: 374860 Water Impact: Category 4 - No Impact Air Impact: Category 3 - Minor Incident Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants And Effects: Smoke Pollutant: Specific Waste Materials: Metal Wastes Pollutant: Specific Waste Materials: Vehicles And Vehicle Parts	A17NE (NW)	847	2	538299 181860
58	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 13th June 2005 Incident Reference: 320083 Water Impact: Category 3 - Minor Incident Air Impact: Category 2 - Significant Incident Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants And Effects: Smoke Pollutant: Contaminated Water: Firefighting Run-Off Pollutant: Oils And Fuel: Mixed/Waste Oils Pollutant: Specific Waste Materials: Batteries Pollutant: Specific Waste Materials: Metal Wastes Pollutant: Specific Waste Materials: Tyres Pollutant: Specific Waste Materials: Vehicles And Vehicle Parts	A18NW (NW)	851	2	538304 181867

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
59	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 5th April 2012 Incident Reference: 978629 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants And Effects: Smoke	A19SW (NE)	841	2	539156 181747
60	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 27th July 2004 Incident Reference: 254455 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants And Effects: Dust	A19NW (NE)	865	2	539114 181807
60	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 27th July 2004 Incident Reference: 254128 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants And Effects: Dust	A19NW (NE)	886	2	539123 181826
61	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 20th March 2014 Incident Reference: 1219761 Water Impact: Category 3 - Minor Incident Air Impact: Category 3 - Minor Incident Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Specific Waste Materials: Household Waste Pollutant: Specific Waste Materials: Tyres	A17NE (NW)	890	2	538245 181882
62	**Water Abstractions** Operator: Celtic Technologies Ltd Licence Number: 28/39/39/0187 Permit Version: Not Supplied Location: East India Dock, LONDON Authority: Environment Agency, Thames Region Abstraction: Groundwater Remediation Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 90 Yearly Rate (m3): 6000 Details: Alluvium Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A13NE (E)	162	2	538800 181100
63	**Water Abstractions** Operator: Lee Valley Regional Park Licence Number: 29/38/9/0162 Permit Version: Not Supplied Location: Limmo Peninsula, CANNING TOWN Authority: Environment Agency, Thames Region Abstraction: Wildlife Pond/Lake Transfer Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 152 Yearly Rate (m3): 30000 Details: River Gravel Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NW (E)	462	2	539100 181095

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
64	**Water Abstractions** Operator: Lee Valley Regional Park Authority Licence Number: 29/38/09/0162 Permit Version: 101 Location: Limmo Peninsula Authority: Environment Agency, Thames Region Abstraction: Environmental: Non-remedial River/Wetland Support: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Limmo Peninsula, Canning Town, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th August 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14NW (E)	499	2	539130 181170
64	**Water Abstractions** Operator: Lee Valley Regional Park Authority Licence Number: 29/38/09/0162 Permit Version: 100 Location: Limmo Peninsula Authority: Environment Agency, Thames Region Abstraction: Environmental: Non-remedial River/Wetland Support: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 146 Yearly Rate (m3): 30000 Details: Limmo Peninsula, Canning Town, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NW (E)	499	2	539130 181170
65	**Water Abstractions** Operator: Pura Foods Limited Licence Number: 29/38/09/0138 Permit Version: 101 Location: Bow Creek Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): 982 Yearly Rate (m3): 240938 Details: Glasshouse Wharf, Orchard Place, Blackwall, Tower Hamlets, London, E14 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th June 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NW (E)	573	2	539200 181200
	Water Abstractions Operator: English Partnerships Licence Number: 28/39/44/0042 Permit Version: 2 Location: The Millennium Dome Borehole Authority: Environment Agency, Thames Region Abstraction: Private Water Supply: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: The Millennium Dome Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st July 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3NE (S)	1068	2	538900 180050

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: The New Millennium Experience Company Licence Number: 28/39/44/0042 Permit Version: 1 Location: The Millennium Dome Borehole Authority: Environment Agency, Thames Region Abstraction: Private Water Supply: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: The Millennium Dome Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 30th November 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3NE (S)	1068	2	538900 180050
	Water Abstractions Operator: Pioneer Willment Concrete Ltd Licence Number: 28/39/44/0025 Permit Version: 100 Location: 303 Tunnel Avenue, Greenwich, - Borehole 'A' Authority: Environment Agency, Thames Region Abstraction: Mineral Products: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 436 Yearly Rate (m3): 86376 Details: 303 Tunnel Avenue, Greenwich, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 14th June 1991 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A3NE (S)	1214	2	538900 179900
	Water Abstractions Operator: Hanson Quarry Prod Europe Ltd Licence Number: 28/39/44/0046 Permit Version: 1 Location: 303 Tunnel Avenue, Greenwich. Authority: Environment Agency, Thames Region Abstraction: Mineral Products: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 303 Tunnel Avenue, Greenwich. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st January 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3NE (S)	1282	2	538900 179830
	Water Abstractions Operator: Blackwall Aggregates Limited Licence Number: 28/39/44/0024 Permit Version: 101 Location: 303 Tunnel Avenue, Greenwich. Authority: Environment Agency, Thames Region Abstraction: Mineral Products: Mineral Washing Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 400 Yearly Rate (m3): 70000 Details: 303 Tunnel Avenue, Greenwich Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th January 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3NE (S)	1282	2	538900 179830

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Canal And River Trust Licence Number: Th/039/0039/096 Permit Version: 1 Location: Dollar Bay, South Dock - A Authority: Environment Agency, Thames Region Abstraction: Production of Energy: Electricity: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th September 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2NE (S)	1314	2	538198 179848
	Water Abstractions Operator: Blackwall Aggregates Limited Licence Number: 28/39/44/0023 Permit Version: 101 Location: Tunnel Avenue, Greenwich - River Thames At Point 'A' Authority: Environment Agency, Thames Region Abstraction: Mineral Products: Mineral Washing Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): 1000 Yearly Rate (m3): 343200 Details: Tunnel Avenue, Greenwich, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 21st November 1995 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3NE (S)	1328	2	538730 179760
	Water Abstractions Operator: Westinvest Gesellschaft Fur Investmentfonds Mbh Licence Number: Th/039/0044/013 Permit Version: 1 Location: Borehole B - Greenwich Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 11th September 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4NW (SE)	1371	2	539311 179891
	Water Abstractions Operator: Greenwich Peninsula N0204 Block A Nominee 1 & 2 Limited Licence Number: 28/39/44/0051 Permit Version: 1 Location: Abstraction Point 'B' - Chalk, Green Place, Greenwich Authority: Environment Agency, Thames Region Abstraction: Business Parks: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Green Place, Greenwich Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 6th April 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4NW (SE)	1371	2	539311 179891

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Westinvest Gesellschaft Fur Investmentfonds Mbh Licence Number: Th/039/0044/013 Permit Version: 1 Location: Borehole A - Greenwich Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 11th September 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4NE (SE)	1401	2	539329 179866
	Water Abstractions Operator: Greenwich Peninsula N0204 Block A Nominee 1 & 2 Limited Licence Number: 28/39/44/0051 Permit Version: 1 Location: Abstraction Point 'A' - Chalk, Green Place, Greenwich Authority: Environment Agency, Thames Region Abstraction: Business Parks: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Green Place, Greenwich Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 6th April 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4NE (SE)	1401	2	539329 179866
	Water Abstractions Operator: Oxygen Property Management Limited Licence Number: Th/037/0054/014 Permit Version: 2 Location: 18 Western Gateway, Royal Victoria Dock, London Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 19th January 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NE (E)	1646	2	540248 180741
	Water Abstractions Operator: Meadowshire Ltd Licence Number: Th/037/0054/014 Permit Version: 1 Location: 18 Western Gateway, Royal Victoria Dock, London Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 20th May 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NE (E)	1646	2	540248 180741

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Meadowshire Ltd Licence Number: Th/037/0054/001 Permit Version: 1 Location: 18 Western Gateway, Royal Victoria Dock, London Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 7th May 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NE (E)	1678	2	540280 180740
	Water Abstractions Operator: Britannia Hotels Limited Licence Number: 28/39/39/0234 Permit Version: 1 Location: Britannia International Hotel, Isle Of Dogs E14- Borehole Authority: Environment Agency, Thames Region Abstraction: Hotels; Public Houses And Conference Centres: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Britannia International Hotel, E14 Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 30th April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1NE (SW)	1731	2	537350 179930
	Water Abstractions Operator: Britannia Hotels Limited Licence Number: 28/39/39/0220 Permit Version: 1 Location: The International Hotel, Isle Of Dogs - Borehole Authority: Environment Agency, Thames Region Abstraction: Hotels; Public Houses And Conference Centres: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: The International Hotel, Marsh Wall, Isle Of Dogs, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th October 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1NE (SW)	1731	2	537350 179930
	Water Abstractions Operator: Brittania International Hotels Ltd Licence Number: 28/39/39/0179 Permit Version: 100 Location: The International Hotel, Isle Of Dogs - Borehole Authority: Environment Agency, Thames Region Abstraction: Hotels; Public Houses And Conference Centres: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 264 Yearly Rate (m3): 96624 Details: The International Hotel, Marsh Wall, Isle Of Dogs, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th January 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A1NE (SW)	1731	2	537350 179930

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Canal And River Trust Licence Number: 28/39/39/0204/R01 Permit Version: 1 Location: West India Dock, Marsh Wall, London-Point A Authority: Environment Agency, Thames Region Abstraction: Hotels, Public Houses and Conference centres: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Britannia International Hotel, Marsh Wall, London Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1NE (SW)	1743	2	537294 179977
	Water Abstractions Operator: Price Waterhouse Licence Number: 28/39/39/0181 Permit Version: 100 Location: Scandanavia Centre, Isle Of Dogs - West India Dock Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): 4680 Yearly Rate (m3): 1712880 Details: Scandanavia Centre, Marsh Wall, Isle Of Dogs, London, E14 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 30th October 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1NW (SW)	1755	2	537260 180000
	Water Abstractions Operator: Canal And River Trust Licence Number: 28/39/39/0204 Permit Version: 3 Location: West India Dock, Marsh Wall, London-Point A Authority: Environment Agency, Thames Region Abstraction: Hotels, Public Houses and Conference centres: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Britannia International Hotel, Marsh Wall, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1NW (SW)	1758	2	537280 179970
	Water Abstractions Operator: British Waterways Board Licence Number: 28/39/39/0204 Permit Version: 2 Location: West India Dock, Marsh Wall, London-Point A Authority: Environment Agency, Thames Region Abstraction: Hotels, Public Houses and Conference centres: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Britannia International Hotel, Marsh Wall, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 3rd November 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1NW (SW)	1758	2	537280 179970

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: British Waterways Board Licence Number: 28/39/39/0204 Permit Version: 1 Location: West India Dock, Marsh Wall, London-Point A Authority: Environment Agency, Thames Region Abstraction: Hotels, Public Houses and Conference centres: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Britannia International Hotel, Marsh Wall, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 18th November 2003 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1NW (SW)	1758	2	537280 179970
	Water Abstractions Operator: Hanson Quarry Products Europe Ltd Licence Number: 28/39/44/0047/R01 Permit Version: 1 Location: Victoria Deep Water Terminal Greenwich Se10- Borehole Authority: Environment Agency, Thames Region Abstraction: Mineral Products: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Victoria Deep Water Terminal Tunnel Ave Greemwich Se10 Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 25th April 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1763	2	538997 179359
	Water Abstractions Operator: Canal And River Trust Licence Number: Th/039/0039/102 Permit Version: 1 Location: Millwall Inner Dock - A Authority: Environment Agency, Thames Region Abstraction: Production of Energy: Electricity: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 8th March 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2SW (SW)	1763	2	537817 179526
	Water Abstractions Operator: Canal And River Trust Licence Number: Th/039/0039/102 Permit Version: 1 Location: Millwall Inner Dock - B Authority: Environment Agency, Thames Region Abstraction: Production of Energy: Electricity: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 8th March 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2SW (SW)	1764	2	537817 179525

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Canal And River Trust Licence Number: Th/039/0039/102 Permit Version: 1 Location: Millwall Inner Dock - C Authority: Environment Agency, Thames Region Abstraction: Production of Energy: Electricity: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 8th March 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2SW (SW)	1764	2	537817 179524
	Water Abstractions Operator: Britannia Hotels Limited Licence Number: Th/039/0039/077 Permit Version: 1 Location: Britannia International Hotel, Isle Of Dogs E14- Borehole Authority: Environment Agency, Thames Region Abstraction: Hotels; Public Houses And Conference Centres: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Britannia International Hotel, E14 Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 14th October 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1NE (SW)	1766	2	537313 179919
	Water Abstractions Operator: Hanson Quarry Products Europe Ltd Licence Number: 28/39/44/0047 Permit Version: 2 Location: Victoria Deep Water Terminal Greenwich Se10- Borehole Authority: Environment Agency, Thames Region Abstraction: Mineral Products: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Victoria Deep Water Terminal Tunnel Ave Greemwich Se10 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 10th July 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1773	2	539000 179350
	Water Abstractions Operator: Hanson Quarry Prod Europe Ltd Licence Number: 28/39/44/0047 Permit Version: 1 Location: Victoria Deep Water Terminal Greenwich Se10- Borehole Authority: Environment Agency, Thames Region Abstraction: Mineral Products: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Victoria Deep Water Terminal Tunnel Ave Greemwich Se10 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd September 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1773	2	539000 179350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Anjuman-E-Iscahul-Muslimeen Of Uk Licence Number: 29/38/09/0149 Permit Version: 100 Location: Canning Road - Borehole A Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 1964 Yearly Rate (m3): 107000 Details: Canning Road, Stratford, London, E15 3nx Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 5th November 1996 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(N)	1933	2	538900 183000
	Water Abstractions Operator: The Land Trust Licence Number: 28/39/44/0049 Permit Version: 3 Location: Boord Street, Greenwich - Borehole Authority: Environment Agency, Thames Region Abstraction: Business Parks: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Boord Street, Greenwich, London Se10 Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 10th July 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1941	2	539400 179300
	Water Abstractions Operator: The Land Trust Licence Number: 28/39/44/0049 Permit Version: 3 Location: Boord Street, Greenwich - Borehole Authority: Environment Agency, Thames Region Abstraction: Business Parks: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Boord Street, Greenwich, London, Se10 Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 10th July 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1941	2	539400 179300
	Water Abstractions Operator: The Land Trust Licence Number: 28/39/44/0049 Permit Version: 2 Location: Boord Street, Greenwich - Borehole Authority: Environment Agency, Thames Region Abstraction: Business Parks: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Boord Street, Greenwich, London Se10 Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 16th October 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1941	2	539400 179300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: The Land Trust Licence Number: 28/39/44/0049 Permit Version: 2 Location: Boord Street, Greenwich - Borehole Authority: Environment Agency, Thames Region Abstraction: Business Parks: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Boord Street, Greenwich, London, Se10 Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 16th October 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1941	2	539400 179300
	Water Abstractions Operator: Urban Regeneration Agency Licence Number: 28/39/44/0049 Permit Version: 1 Location: Boord Street, Greenwich - Borehole Authority: Environment Agency, Thames Region Abstraction: Business Parks: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Boord Street, Greenwich, London Se10 Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 9th February 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1941	2	539400 179300
	Water Abstractions Operator: Urban Regeneration Agency Licence Number: 28/39/44/0049 Permit Version: 1 Location: Boord Street, Greenwich - Borehole Authority: Environment Agency, Thames Region Abstraction: Business Parks: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Boord Street, Greenwich, London, Se10 Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 9th February 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1941	2	539400 179300
	Water Abstractions Operator: Urban Regeneration Agency Licence Number: 28/39/44/0040 Permit Version: 100 Location: Blackwall Lane / Boord Street, Greenwich - Borehole Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Make-Up Or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Blackwall Lane Boord Street, Greenwich Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 18th June 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(SE)	1941	2	539400 179300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Urban Regeneration Agency Licence Number: 28/39/44/0040 Permit Version: 100 Location: Blackwall Lane / Boord Street, Greenwich - Borehole Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Blackwall Lane / Boord Street, Greenwich Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 18th June 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(SE)	1941	2	539400 179300
	Water Abstractions Operator: Anjuman-E-Iscahul-Muslimeen Of Uk Licence Number: 29/38/09/0149 Permit Version: 100 Location: Canning Road - Borehole B Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 1964 Yearly Rate (m3): 107000 Details: Canning Road, Stratford, London, E15 3nx Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 5th November 1996 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(N)	1970	2	539100 183000
66	**Water Industry Act Referrals** Name: John Mowlem Construction Plc Location: JOHN MOWLEM CONSTRUCTION PLC, CANNING TOWN STATION, CANNING TOWN STATION, SILVERTOWN, LONDON, E16 1DQ Authority: Environment Agency, Thames Region Permit Reference: AQ1331 Dated: 14th February 1995 Process Type: Permissions or amendments to discharge under the Water Industry Act 1991 Description: Processes which result in the discharge of Special Category effluents under The Trade Effluents (Prescribed Processes and Substances) Regulations **Status: Application cancelled** Positional Accuracy: Manually positioned to the address or location	A14NE (E)	875	2	539460 181386
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 40 Thames Estuary Scale: 1:100,000	A13NE (NE)	0	2	538639 181085
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A13NE (NE)	0	1	538639 181085
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NE (NE)	0	1	538639 181085
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NE (NE)	0	2	538639 181085
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial / Tidal Models and Fluvial Events Boundary Accuracy: As Supplied	A13SE (S)	4	2	538639 181081
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A13NW (N)	75	2	538615 181156

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A13SW (W)	196	2	538455 181017
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A13SE (S)	238	2	538639 180847
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial / Tidal Models and Fluvial Events Boundary Accuracy: As Supplied	A13NE (NE)	243	2	538797 181269
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NE (NE)	0	2	538639 181085
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A13NW (N)	75	2	538615 181156
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NE (NE)	188	2	538758 181229
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13NE (NE)	0	2	538639 181085
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13NE (N)	35	2	538646 181119
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13NE (E)	104	2	538738 181113
	Flood Water Storage Areas None				
	Flood Defences None				
67	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 357.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Lea or Lee Catchment Name: Not Supplied Primacy: 1	A14SW (E)	403	5	539039 181044
68	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 1658.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Lea or Lee Catchment Name: Thames Primacy: 1	A14SW (E)	438	5	539064 180979
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 58.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NW (E)	458	5	539096 181096
70	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 14.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NW (E)	459	5	539097 181103

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
71	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 49.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NW (E)	467	5	539105 181115
72	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 3.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A14SW (E)	482	5	539120 181057
73	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 5.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: River Lea or Lee Catchment Name: Not Supplied Primacy: 1	A14NW (NE)	540	5	539127 181313
74	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 683.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Lea or Lee Catchment Name: Thames Primacy: 1	A14NW (NE)	544	5	539129 181318
75	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 1066.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Lea or Lee Catchment Name: Thames Primacy: 1	A18SW (N)	554	5	538526 181627
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 83.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A8NW (S)	605	5	538575 180484
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 71.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8NW (S)	626	5	538547 180466
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8NW (S)	626	5	538544 180467
79	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 2	A8NW (S)	637	5	538602 180450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
80	**OS Water Network Lines** Watercourse Form: Foreshore Watercourse Length: 4.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 2	A8NW (S)	644	5	538608 180442
81	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 134.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 2	A8NW (S)	648	5	538611 180438
82	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 820.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Primacy: 1	A8NE (SE)	670	5	538918 180476
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 13.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A8SW (S)	694	5	538557 180396
84	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 4.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: River Lea or Lee Catchment Name: Not Supplied Primacy: 1	A18NE (N)	698	5	538724 181777
85	**OS Water Network Lines** Watercourse Form: Foreshore Watercourse Length: 6.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A8SW (S)	706	5	538562 180384
86	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 136.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A8SW (S)	709	5	538568 180380
87	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 190.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Primacy: 1	A8SE (S)	753	5	538696 180334
88	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 10.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Poplar Dock Catchment Name: Thames Primacy: 1	A7SE (SW)	837	5	538295 180322

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
89	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 64.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Poplar Dock Cut Catchment Name: Thames Primacy: 1	A7SE (SW)	846	5	538285 180317
90	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 196.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A8SW (S)	904	5	538434 180205
91	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 190.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8SW (S)	904	5	538434 180205
92	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 13.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7SE (SW)	910	5	538261 180257
93	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 25.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7SE (SW)	921	5	538249 180251
94	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 261.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Primacy: 1	A8SW (S)	928	5	538625 180157

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
95	**Historical Landfill Sites** Licence Holder: Not Supplied Location: South Bromley, Tower Hamlets, London Name: Eastern Dock Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD11239 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 5900/0006 BGS Ref: Not Supplied Other Ref: 8TH002, TOW002	A13SE (S)	10	2	538642 181075
96	**Historical Landfill Sites** Licence Holder: Not Supplied Location: London E14 Name: East India Dock Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD11428 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 5900/0003 BGS Ref: Not Supplied Other Ref: 8TH005, TOW005	A13SE (S)	281	2	538721 180817
97	**Historical Landfill Sites** Licence Holder: Not Supplied Location: London E14 Name: Lanrick Road Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD12117 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: SHA046	A14NW (NE)	512	2	539040 181403
98	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Blackwall, Tower Hamlets, London Name: Poplar Dock Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD11429 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 5900/0004 BGS Ref: Not Supplied Other Ref: 8TH004, TOW004	A8NW (SW)	629	2	538332 180537
99	**Licensed Waste Management Facilities (Locations)** Licence Number: 80138 Location: Moody Wharf, Lanrick Road, Canning Town, London, E14 0JF Operator Name: Erith Haulage Company Limited Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Surrendered** Issued: 18th October 1994 Last Modified: 19th March 1999 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 6th January 2003 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	514	2	539030 181418

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Licensed Waste Management Facilities (Locations)				
100	Licence Number: 80125 Location: 29 Bidder Street, Canning Town, London, E16 4SZ Operator Name: Mayer Parry Recycling Ltd Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Metal Recycling Sites (Mixed) **Licence Status: Modified** Issued: 5th November 1996 Last Modified: 11th December 2009 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	726	2	539075 181665
	Licensed Waste Management Facilities (Locations)				
101	Licence Number: 80133 Location: Northumberland Wharf, Yabsley Street, Poplar, London, E14 9RG Operator Name: Veolia E S (U K) Limited Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Household Waste Amenity Sites **Licence Status: Modified** Issued: 23rd September 1994 Last Modified: 1st June 2012 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	759	2	538488 180341
	Licensed Waste Management Facilities (Locations)				
102	Licence Number: 104101 Location: Northumberland Wharf, Yabsley Street, Poplar, London Operator Name: Cory Environmental Ltd Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Part Transferred** Issued: 1st June 2012 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	812	2	538459 180294
	Licensed Waste Management Facilities (Locations)				
103	Licence Number: 104013 Location: Unit 2, Ailsa Street, London, E14 0LE Operator Name: Blackwall Marine Diesel Limited Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Vehicle depollution facility **Licence Status: Issued** Issued: 20th April 2012 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A17NE (NW)	823	2	538263 181816
	Licensed Waste Management Facilities (Locations)				
104	Licence Number: 104011 Location: Unit 3, Ailsa Street, London, E14 0NE Operator Name: Quick Skips London Limited Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: HCI Waste TS + treatment **Licence Status: Transferred** Issued: 27th March 2012 Last Modified: 27th May 2015 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NW (NW)	823	2	538316 181841

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
105	**Licensed Waste Management Facilities (Locations)** Licence Number: 80515 Location: 32 Stephenson Street, Canning Town, London, E16 4SA Operator Name: IOD Skip Hire Ltd Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status:** **Modified** Issued: 11th August 2000 Last Modified: 11th December 2015 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19NW (NE)	901	2	539132 181838
106	**Licensed Waste Management Facilities (Locations)** Licence Number: 80132 Location: 40 Gillender Street, London, E14 6RH Operator Name: Veolia E S Cleanaway (U K) Ltd Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status:** **Surrendered** Issued: 2nd February 1990 Last Modified: 21st April 1997 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 6th June 2016 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A17NE (NW)	933	2	538234 181925
107	**Licensed Waste Management Facilities (Locations)** Licence Number: 80115 Location: 9a Cody Business Centre South Crescent, London, E16 4TL Operator Name: The Remet Company Ltd Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Metal Recycling Sites (Mixed) **Licence Status:** **Modified** Issued: 13th October 1992 Last Modified: 18th May 2012 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NW (N)	935	2	538595 182018
108	**Licensed Waste Management Facilities (Locations)** Licence Number: 402266 Location: 7c South Crescent, London, E16 4TL Operator Name: Mcfen Plant Limited Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: HCI Waste TS + treatment **Licence Status:** **Issued** Issued: 1st April 2015 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NE (N)	941	2	538844 182003
	Local Authority Landfill Coverage Name: London Borough of Tower Hamlets - Has supplied landfill data		0	3	538639 181085
	Local Authority Landfill Coverage Name: London Borough of Newham - Has supplied landfill data		405	6	539043 181071
	Local Authority Landfill Coverage Name: London Borough of Greenwich - Has supplied landfill data		780	7	538863 180338

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
109	**Local Authority Recorded Landfill Sites** Location: East India Dock Reference: 1 Authority: London Borough of Tower Hamlets, Environmental Health Department **Last Reported Status:** **Closed** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A13SE (S)	45	3	538653 181043
110	**Local Authority Recorded Landfill Sites** Location: Poplar Basin Reference: 4 Authority: London Borough of Tower Hamlets, Environmental Health Department **Last Reported Status:** **Closed** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A8NW (SW)	657	3	538338 180501
111	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1951	A13SE (S)	13	12	538643 181073
112	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13NW (NW)	260	12	538427 181235
113	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13NE (N)	286	12	538665 181369
114	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1951	A13SE (S)	286	12	538732 180815
115	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13NW (N)	328	12	538537 181397
116	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13NE (N)	343	12	538764 181404
117	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A13NW (NW)	367	12	538404 181366
118	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A18SW (NW)	433	12	538402 181447
119	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A18SW (N)	484	12	538526 181555
120	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A18SW (N)	488	12	538520 181558
121	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A18NE (N)	776	12	538817 181840
122	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A18NE (N)	804	12	538701 181886
123	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A19SW (NE)	847	12	539289 181626
124	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A19SW (NE)	849	12	539284 181636
125	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A18NW (N)	874	12	538519 181950

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
126	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A17NE (NW)	878	12	538257 181875
127	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A19SW (NE)	890	12	539230 181749
128	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A19NW (NE)	949	12	539243 181816
129	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A9SW (SE)	951	12	539075 180240
130	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A9SW (SE)	968	12	539012 180192
131	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1951	A18NE (N)	982	12	538786 182055
132	**Registered Waste Transfer Sites** Licence Holder: Blackwall Transfer Station Licence Reference: DL194 Site Location: Blackwall Goods Yard, East India Dock Road, Blackwall, London Operator Location: As Site Address Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st December 1984 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Commercial Waste Construction And Demolition Wastes Prohibited Waste: Biodegradable/Putrescible Waste Clinical Wastes Notifiable Wastes Special Wastes	A13NE (NE)	207	2	538825 181175
132	**Registered Waste Transfer Sites** Licence Holder: Wells Haulage Licence Reference: DL099 Site Location: Blackwall Goods Yard, East India Dock Road, BLACKWALL, London, E14 Operator Location: As Site Address Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st June 1982 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Commercial Waste Construction And Demolition Wastes Prohibited Waste: Biodegradable/Putrescible Waste Clinical Wastes Notifiable Wastes Special Wastes	A13NE (NE)	210	2	538825 181180

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
132	**Registered Waste Transfer Sites** Licence Holder: R.S. Contractors Ltd Licence Reference: DL205 Site Location: Unit 92 East India Dock, Blackwall, LONDON, Greater London, E14 Operator Location: 2A Denmark Road, SOUTHWARK, London, SE5 Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st May 1985 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Construction And Demolition Wastes Household + Commercial Waste Prohibited Waste: Biodegradable/Putrescible Waste Clinical Wastes Notifiable Wastes Special Wastes	A13NE (NE)	212	2	538830 181175
133	**Registered Waste Transfer Sites** Licence Holder: W Kavanagh Licence Reference: DL091 Site Location: Site A Scouler Street, BLACKWALL, London, E14 Operator Location: 16 Valleyfield Road, NEWHAM, London, E16 Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st December 1984 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Commercial Waste Construction And Demolition Wastes Prohibited Waste: Biodegradable/Putrescible Waste Clinical Wastes Notifiable Wastes Special Wastes	A13SW (S)	347	2	538550 180750
133	**Registered Waste Transfer Sites** Licence Holder: B Brewster Licence Reference: DL104 Site Location: Site A Quixley Street, BLACKWALL, London, E14 Operator Location: 1 Dove House Gardens, Chingford, Waltham Forest, London Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st July 1982 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Construction And Demolition Wastes Household + Commercial Waste Prohibited Waste: Biodegradable/Putrescible Waste Clinical Wastes Notifiable Wastes Special Wastes	A13SW (S)	347	2	538550 180750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
133	**Registered Waste Transfer Sites** Licence Holder: F J Harris Licence Reference: DL088 Site Location: Site B Scouler Street, BLACKWALL, London, E14 Operator Location: 11 St.Quintin Road, Plaistow, NEWHAM, London, E13 Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st October 1981 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste Commercial Waste Construction And Demolition Wastes Prohibited Waste Biodegradable/Putrescible Waste Clinical Wastes Notifiable Wastes Special Wastes	A13SW (S)	347	2	538550 180750
134	**Registered Waste Transfer Sites** Licence Holder: Erith Haulage Co Ltd Licence Reference: DL288 Site Location: Moody Wharf, Lanrick Road, Canning Town, London, E14 0jf Operator Location: Riverside House, Maypole Crescent, Darent Industrial Estate, ERITH, Kent, DA8 2JZ Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 18th October 1994 Preceded By Licence: DL288 Superseded By Licence: Not Given Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Supplied Authorised Waste Lwra Cat. A = Inert Wastes Lwra Cat. Bi Gen.Non-Putresc Some Lwra Cat. E = Difficult Gen.W Prohibited Waste Clinical - As In Coll/Disp.Regs Of '88 Special Wastes Waste N.O.S.	A14NW (NE)	509	2	539030 181410
134	**Registered Waste Transfer Sites** Licence Holder: Shanks & Mc Ewan (Southern) Ltd Licence Reference: DL288 Site Location: Moody Wharf, Lanrick Road, Canning Town, London, E14 0jf Operator Location: Woodside House, Church Road, WOBURN SANDS, Buckinghamshire, MK17 8TA Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st September 1988 Preceded By Licence: Not Given Superseded By Licence: DL288 Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Supplied Authorised Waste Commercial Waste Construction Ind. Wastes Prohibited Waste Clinical Wastes Notifiable Wastes Putrescible Waste Special Wastes	A14NW (NE)	509	2	539030 181410

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
135	**Registered Waste Transfer Sites** Licence Holder: Cleanaway Ltd Licence Reference: DL279 Site Location: Northumberland Wharf, Yabsley Street, POPLAR, London, E14 9RG Operator Location: The Drive, Warley, BRENTWOOD, Essex, CM13 3BE Authority: Environment Agency - Thames Region, North East Area Site Category: Civic Amenity - with transfer Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 23rd September 1994 Preceded By Licence: DL279 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Civic Amenity Lead/Acid Batteries Civic Amenity Waste Cats A,Bi,Bii,C Civic Amenitylwra Cat. E Difficult General Waste Lwra Cat Bii Gen. Scrap Metal Some Of Lwra Cat. A = Inert Wastes Lwra Cat. Bi Gen.Non-Putresc Lwra Cat. C 'Putresc' Lwra Cat. E = Diff.Gen.Waste Some Of Max.Waste Permitted By Licence Mineral Oils (Wmp.26 - Gp M10) Waste Vegetable Oil Prohibited Waste: Clinical - As In Coll/Disp.Regs Of '88 Special Wastes Waste N.O.S.	A8SW (S)	813	2	538450 180295
135	**Registered Waste Transfer Sites** Licence Holder: Cleanaway Ltd Licence Reference: DL279 Site Location: Northumberland Wharf R.T.S., Yabsley Street, BLACKWALL, London, E14 Operator Location: The Drive, Warley, BRENTWOOD, Essex, CM13 3BE Authority: Environment Agency - Thames Region, North East Area Site Category: Civic Amenity - with transfer Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st October 1991 Preceded By Licence: DL279 Superseded By Licence: DL279 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Lwra Cat. A = Inert Wastes Lwra Cat. Bi Gen.Non-Putresc Lwra Cat. C 'Putresc.' Lwra Cat. E = Difficult Gen.W Max.Waste Permitted By Licence-Stated Prohibited Waste: Clinical - As In Coll/Disp.Regs Of '88 Special Wastes Waste N.O.S.	A8SW (S)	817	2	538450 180290
135	**Registered Waste Transfer Sites** Licence Holder: L.B. of Tower Hamlets Licence Reference: DL279 Site Location: Northumberland Wharf R.T.S., Yabsley Street, BLACKWALL, London, E14 Operator Location: Town Hall, Bow Road, TOWER HAMLETS, London, E3 2SE Authority: Environment Agency - Thames Region, North East Area Site Category: Civic Amenity - with transfer Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st March 1988 Preceded By Licence: DL246 Superseded By Licence: DL279 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Construction Ind. Wastes Household + Commercial Waste Mineral Oils Prohibited Waste: Clinical Waste -Clause 2 & 4 Hsc 1982 Notifiable Wastes Special Wastes	A8SW (S)	817	2	538450 180290

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
135	**Registered Waste Transfer Sites** Licence Holder: L.B. of Tower Hamlets Licence Reference: DL246 Site Location: Northumberland Wharf R.T.S., Yabsley Street, BLACKWALL, London, E14 Operator Location: Town Hall, Bow Road, TOWER HAMLETS, London, E3 2SE Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer - River Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st February 1987 Preceded By Licence: CR/014 Superseded By Licence: DL279 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Construction Ind. Wastes Household + Commercial Waste Prohibited Waste: Clinical Wastes Notifiable Wastes Special Wastes	A8SW (S)	817	2	538450 180290
135	**Registered Waste Transfer Sites** Licence Holder: L.B. of Tower Hamlets Licence Reference: CR/014 Site Location: Northumberland Wharf, Raleana Road, BLACKWALL, London, E14 9RH Operator Location: Town Hall, Bow Road, TOWER HAMLETS, London, E3 2SE Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer - River Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st October 1979 Preceded By Licence: Not Given Superseded By Licence: DL246 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: House, Com + Ind.Waste Prohibited Waste: Clinical Wastes Difficult Wastes Notifiable Wastes	A8SW (S)	817	2	538450 180290
136	**Registered Waste Transfer Sites** Licence Holder: Huckles Transport Ltd Licence Reference: DL220 Site Location: St Leonards Wharf, Gillender Street, BROMLEY BY BOW, London, E14 Operator Location: As Site Address Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st November 1985 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Construction And Demolition Wastes House. + Com. Untreated Waste Prohibited Waste: Clinical Wastes Notifiable Wastes Putrescible Waste Special Wastes	A17NE (NW)	837	2	538300 181850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Waste Transfer Sites				
137	Licence Holder: I.O.D Skip Hire Ltd Licence Reference: WML80515 Site Location: Oasis Park, 32 Stephenson Street, CANNING TOWN, London, E11 4ST Operator Location: Cambridge House, 27 Cambridge Road, WANSTEAD, London, E11 2PU Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 16th October 2001 Preceded By Licence: WML80515 Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Quality: Good Authorised Waste: Degradable Commercial Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.02) Degradable Industrial Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.03) Inert Materials (As In Post'98 E.A.Lics And Equivalent To 21.00.00) Maximum Daily Waste Permitted By Licence Metal Waste/Scrap Metal (As In Post'98 E.A.Lics And Equivalent To 23.00.00) With Annual Maximum Waste Prohibited Waste: Degradable Household Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.01) Other Waste/Waste Not Otherwise Specified Special Waste (As In Epa 1990:S62 Of 1996 Regs)	A19NW (NE)	843	2	539102 181789
	Registered Waste Transfer Sites				
138	Licence Holder: East London Recycling (London) Ltd Licence Reference: DL336 Site Location: 30 Stephenson Street, CANNING TOWN, London, E16 4NE Operator Location: As Site Address Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st March 1991 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Cardboard, Fibreboard Cement Decontam. Empty Used Containers Electric Cable/Wire Electric/Electronic Comp/Fixt/Fit/Appl Empty Used Containers Floor Sweepings Household Waste Iron,Steel,Alum.,Brass,Copper,Tin,Zinc Leather Lighting Lamps, Tubes, Flourescents Lwra Cat. A = Inert Wastes Lwra Cat. Bi Gen.Non-Putresc - Only As Lwra Cat. C 'Putresc.' - But Only Lwra Cat. E = Difficult W. - But Only Max.Waste Permitted By Licence-Stated Paper Incl. Oiled Or Tarred Plasterboard Plastics As Finished Products/Scrap Rubber/Latex (Including Tyres) Solidified Paint Waste String,Rope,Natural Or Man-Made Fibre Synthetic Adhesive/Other Solid Resins Tar, Pitch, Bitumen Trees,Bushes,Garden/Horticult. Waste Vegetable Matter Waste Food & Veg.Matter Wood Incl. Sawdust/Sanderdust Wood Prods Incl. Hardboard, Chipboard Wool,Cotton,Linen,Hemp,Sisal,Hessian Prohibited Waste: Clinical - As In Coll/Disp.Regs Of '88 Special Wastes Waste N.O.S.	A19SW (NE)	856	2	539200 181730

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
139	**Registered Waste Transfer Sites** Licence Holder: I.O.D Skip Hire Ltd Licence Reference: WML80515 Site Location: Oasis Park, 32 Stephenson Street, CANNING TOWN, London, E11 4ST Operator Location: Cambridge House, 27 Cambridge Road, WANSTEAD, London, E11 2PU Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 11th August 2000 Preceded By Licence: Not Given Superseded By Licence: WML80515 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Degradable Commercial Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.02) Degradable Industrial Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.03) Inert Materials (As In Post'98 E.A.Lics And Equivalent To 21.00.00) Maximum Daily Waste Permitted By Licence Metal Waste/Scrap Metal (As In Post'98 E.A.Lics And Equivalent To 23.00.00) With Annual Maximum Waste Prohibited Waste: Degradable Household Waste (As In Post'98 E.A.Lics & Equivalent To 22.09.01) Other Waste/Waste Not Otherwise Specified Special Waste (As In Epa 1990:S62 Of 1996 Regs)	A19NW (NE)	896	2	539120 181840
140	**Registered Waste Transfer Sites** Licence Holder: Cleanaway Ltd Licence Reference: DL308 Site Location: Tunnel Approach Transfer Station, 40 Gillender Street, BROMLEY BY BOW, London, E14 6RH Operator Location: The Drive, Warley, BRENTWOOD, Essex, CM13 3BE Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 2nd February 1990 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: L.W.R.A. Cat. A = Inert Wastes L.W.R.A. Cat. Bi Gen.Non-Putresc Waste Lwra Cat. A = Inert Wastes Max.Waste Permitted By Licence-Stated Prohibited Waste: Clinical - As In Coll/Disp.Regs Of '88 Special Wastes Waste N.O.S.	A17NE (NW)	953	2	538200 181930

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
141	**Registered Waste Treatment or Disposal Sites** Licence Holder: Mayer Parry Recycling Ltd Licence Reference: T/NE/MAY043 Site Location: 29 Bidder Street, CANNING TOWN, London, E16 4SZ Operator Location: Sovereign House, Manor Road, Erith, Kent, Da8 2ad Authority: Environment Agency - Thames Region, North East Area Site Category: Scrapyard Max Input Rate: Large (Equal to or greater than 75,000 and less than 250,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 5th November 1996 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Car Fragmentiser Waste Cfcs Contained In Appliances Electric Cable/Wire Electric/Electronic Compt/Fit/Fix/Apps Lead/Acid Batteries Lighting Lamps/Tubes/Fluorescents Liquid Special Waste Comprising Lwra Cat Bii Gen. Scrap Metal Waste Machinery Motor Oils As Part Of Vehicles Photocopiers Tyres Prohibited Waste: Contam.Demol.Mat'(Unless By Prior App) Contam.Soil (Unless By Prior App) Special Wastes N.O.S. Waste N.O.S.	A19SW (NE)	730	2	539100 181650
142	**Registered Waste Treatment or Disposal Sites** Licence Holder: The Remet Co Ltd Licence Reference: DL409 Site Location: 9A Cody Business Centre, Cody Road, WEST HAM, London, E16 4SR Operator Location: As Site Address Authority: Environment Agency - Thames Region, North East Area Site Category: Scrapyard Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 13th October 1992 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Supplied Authorised Waste: Lwra Cat Bii Gen. Scrap Metal (Some) Prohibited Waste: Clinical - As In Control.Waste Regs'92 Special Wastes Waste N.O.S.	A18NW (N)	946	2	538630 182030

Hazardous Substances

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Control of Major Accident Hazards Sites (COMAH)				
143	Name: Transco Plc Location: Leven Road, Poplar, LONDON, E14 0LL Reference: Not Supplied Type: Upper Tier **Status: Active** Positional Accuracy: Located by supplier to within 100m	A18SW (N)	417	8	538600 181500
	Control of Major Accident Hazards Sites (COMAH)				
143	Name: National Grid Gas Plc Location: Poplar Holder Station, Leven Road, Poplar, Greater London, E14 0LL Reference: Not Supplied Type: Upper Tier **Status: Active** Positional Accuracy: Manually positioned to the address or location	A18SW (N)	431	8	538566 181509
	Notification of Installations Handling Hazardous Substances (NIHHS)				
144	Name: Transco Location: Poplar Holder Station, Leven Road, Poplar, LONDON, E14 0LL **Status: Not Active** Positional Accuracy: Located by supplier to within 100m	A18SW (N)	412	8	538605 181495
	Notification of Installations Handling Hazardous Substances (NIHHS)				
145	Name: L P G Holdings Limited Location: Ailsa Wharf, Ailsa Street, Poplar, LONDON, E14 0LE **Status: Not Active** Positional Accuracy: Automatically positioned to the address	A18NW (N)	801	8	538340 181828
	Planning Hazardous Substance Consents				
146	Name: British Gas Plc Location: North Thames, Poplar Holder Station, Leven Road, Poplar, Greater London, E14 0LL Authority: London Borough of Tower Hamlets Application Ref: HS/2 Hazardous Substance: Liquefied extremely flammable gas (including LPG) and natural gas (whether liquefied or not) Maximum Quantity: 492.8 Application date: 16th November 1992 **Decision: Deemed Consent GrantedGranted** Positional Accuracy: Manually positioned to the address or location	A18SW (N)	437	9	538574 181516
	Planning Hazardous Substance Consents				
147	Name: Esso Gas Ltd Location: Ailsa Wharf Depot, Ailsa Street, POPLAR, Greater London, E14 0LE Authority: London Borough of Tower Hamlets Application Ref: HS/4 Hazardous Substance: Liquefied extremely flammable gas (including LPG) and natural gas (whether liquefied or not) Maximum Quantity: 398 Application date: 11th November 1992 **Decision: Deemed Consent GrantedGranted** Positional Accuracy: Automatically positioned to the address	A18NW (N)	801	9	538340 181828

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Thames Group	A13NE (NE)	0	1	538639 181085
	BGS Estimated Soil Chemistry No data available				
148	**BGS Recorded Mineral Sites** Site Name: Orchard Wharf Location: Orchard Place , Leamouth Road, Poplar, London, E14 0jw Source: British Geological Survey, National Geoscience Information Service Reference: 10814 Type: Wharf **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Marine Deposits Commodity: Crushed Rock Positional Accuracy: Located by supplier to within 100m	A14NW (E)	476	1	539100 181200
149	**BGS Recorded Mineral Sites** Site Name: Ordnance Wharf Location: 303 Tunnel Avenue, Blackwall, Greenwich , London, Se10 0qe Source: British Geological Survey, National Geoscience Information Service Reference: 10815 Type: Wharf **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Marine Deposits Commodity: Marine Sand And Gravel Positional Accuracy: Located by supplier to within 10m	A8SE (S)	920	1	538800 180180
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 538839, 181184 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 17.80 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 70.80 mg/kg Lead Measured Concentration: 272.70 mg/kg Nickel Measured Concentration: 30.20 mg/kg	A13NE (NE)	224	1	538839 181184
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 538726, 180793 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 18.10 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 53.50 mg/kg Lead Measured Concentration: 349.30 mg/kg Nickel Measured Concentration: 23.30 mg/kg	A13SE (S)	305	1	538726 180793
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 538272, 180891 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 13.70 mg/kg Cadmium Measured Concentration: 0.50 mg/kg Chromium Measured Concentration: 52.70 mg/kg Lead Measured Concentration: 160.80 mg/kg Nickel Measured Concentration: 18.70 mg/kg	A12SE (SW)	415	1	538272 180891

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 539124, 181168 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 27.40 mg/kg Cadmium Measured Concentration: 0.80 mg/kg Chromium Measured Concentration: 68.30 mg/kg Lead Measured Concentration: 1047.90 mg/kg Nickel Measured Concentration: 32.40 mg/kg	A14NW (E)	493	1	539124 181168
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 538861, 181533 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 18.70 mg/kg Cadmium Measured Concentration: 0.90 mg/kg Chromium Measured Concentration: 72.30 mg/kg Lead Measured Concentration: 643.70 mg/kg Nickel Measured Concentration: 27.30 mg/kg	A18SE (NE)	501	1	538861 181533
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 538180, 181390 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 16.00 mg/kg Cadmium Measured Concentration: 0.40 mg/kg Chromium Measured Concentration: 66.40 mg/kg Lead Measured Concentration: 227.90 mg/kg Nickel Measured Concentration: 27.50 mg/kg	A12NE (NW)	552	1	538180 181390
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 539256, 180835 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 13.90 mg/kg Cadmium Measured Concentration: 0.50 mg/kg Chromium Measured Concentration: 65.70 mg/kg Lead Measured Concentration: 85.80 mg/kg Nickel Measured Concentration: 22.10 mg/kg	A14SW (E)	666	1	539256 180835
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 538528, 180386 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 16.20 mg/kg Cadmium Measured Concentration: 0.50 mg/kg Chromium Measured Concentration: 66.00 mg/kg Lead Measured Concentration: 306.10 mg/kg Nickel Measured Concentration: 24.90 mg/kg	A8SW (S)	708	1	538528 180386

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 538148, 181725 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 27.90 mg/kg Cadmium Measured Concentration: 3.70 mg/kg Chromium Measured Concentration: 186.00 mg/kg Lead Measured Concentration: 240.30 mg/kg Nickel Measured Concentration: 52.40 mg/kg	A17SE (NW)	807	1	538148 181725
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 539198, 180305 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 12.60 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 54.30 mg/kg Lead Measured Concentration: 63.00 mg/kg Nickel Measured Concentration: 23.20 mg/kg	A9SW (SE)	960	1	539198 180305
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: London Count Id: 7209 Arsenic Minimum Concentration: 1.00 mg/kg Arsenic Average Concentration: 17.00 mg/kg Arsenic Maximum Concentration: 161.00 mg/kg Cadmium Minimum Concentration: 0.10 mg/kg Cadmium Average Concentration: 0.90 mg/kg Cadmium Maximum Concentration: 165.20 mg/kg Chromium Minimum Concentration: 13.00 mg/kg Chromium Average Concentration: 79.00 mg/kg Chromium Maximum Concentration: 2094.00 mg/kg Lead Minimum Concentration: 11.00 mg/kg Lead Average Concentration: 280.00 mg/kg Lead Maximum Concentration: 10000.00 mg/kg Nickel Minimum Concentration: 2.00 mg/kg Nickel Average Concentration: 28.00 mg/kg Nickel Maximum Concentration: 506.00 mg/kg	A13NE (NE)	0	1	538639 181085
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Natural Cavities Easting: 538400 Northing: 180250 Distance: 869 Quadrant Reference: A8 Quadrant Reference: SW Bearing Ref: S Cavity Type: Scour Hollows x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Alluvium	A8SW (S)	869	10	538400 180250

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 539480 Northing: 180680 Distance: 934 Quadrant Reference: A9 Quadrant Reference: NE Bearing Ref: SE Cavity Type: Scour Hollows x 1 Solid Geology Detail: Chalk Group, Lambeth Group, London Clay Formation Superficial Geology Detail: Alluvium	A9NE (SE)	934	10	539480 180680
	Natural Cavities Easting: 539050 Northing: 180220 Distance: 958 Quadrant Reference: A9 Quadrant Reference: SW Bearing Ref: SE Cavity Type: Scour Hollows x 1 Solid Geology Detail: Chalk Group, Lambeth Group, London Clay Formation Superficial Geology Detail: Alluvium	A9SW (SE)	958	10	539050 180220
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	538639 181085
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	538639 181085
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	538639 181085
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	538639 181085
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	246	1	538412 180991
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	538639 181085
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	538639 181085
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	231	1	538640 181315
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	538639 181085
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	538639 181085

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
150	**Contemporary Trade Directory Entries** Name: Busy Bees Location: Flat 14, Trident House, Blair Street, London, E14 0NX Classification: Commercial Cleaning Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	205	-	538468 181197
150	**Contemporary Trade Directory Entries** Name: Eurasia Location: 29, Aberfeldy Street, London, E14 0NU Classification: Frozen Food Processors & Distributors **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	219	-	538485 181240
150	**Contemporary Trade Directory Entries** Name: Betta Press Location: 33, Aberfeldy Street, London, E14 0NU Classification: Dry Cleaners **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	228	-	538482 181250
150	**Contemporary Trade Directory Entries** Name: Lime House Dry Cleaning & Laundry Co Location: 33, Aberfeldy Street, London, E14 0NU Classification: Dry Cleaners **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	228	-	538482 181250
151	**Contemporary Trade Directory Entries** Name: Rock Uk Ltd Location: Leamouth Road, London, E14 0JG Classification: Petrol Filling Stations **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13NE (E)	257	-	538891 181132
152	**Contemporary Trade Directory Entries** Name: Nexgor Location: 19, Benledi Road, London, E14 0NR Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (N)	285	-	538641 181369
153	**Contemporary Trade Directory Entries** Name: Esso Location: Leamouth Road, London, E14 0JG Classification: Petrol Filling Stations **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	322	-	538960 181091
154	**Contemporary Trade Directory Entries** Name: Docklands Minibuses Location: Quixley Street, London, E14 9PU Classification: Bus & Coach Operators & Stations **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (S)	325	-	538535 180777
154	**Contemporary Trade Directory Entries** Name: H Vaughan Ltd Location: 26, Naval Row, London, E14 9PS Classification: Seating Manufacturers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A13SW (S)	326	-	538515 180784
154	**Contemporary Trade Directory Entries** Name: Scaramal Motorcycles Location: London, E14 9PU Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (S)	333	-	538528 180772
155	**Contemporary Trade Directory Entries** Name: James Of Docklands Location: 2, Portree Street, London, E14 0HT Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A13NE (NE)	360	-	538919 181310
156	**Contemporary Trade Directory Entries** Name: B & S Cleaning Location: Flat 16, Anderson House, Woolmore Street, London, E14 0EP Classification: Cleaning Services - Domestic **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (SW)	429	-	538253 180899

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
157	**Contemporary Trade Directory Entries** Name: Jacobs Docklands Ltd Location: 26-32, Follett Street, London, E14 6LX Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	430	-	538210 181067
157	**Contemporary Trade Directory Entries** Name: Mixamate Location: 247-251, East India Dock Road, London, E14 0EG Classification: Concrete & Mortar Ready Mixed **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	465	-	538175 181065
158	**Contemporary Trade Directory Entries** Name: Docklands Self Drive Hire Ltd Location: 314, Poplar High Street, London, E14 0BB Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (SW)	464	-	538325 180744
158	**Contemporary Trade Directory Entries** Name: J M Ahluwalia & Sons Ltd Location: 304 Poplar High St, London, E14 0BB Classification: Sports Equipment Manufacturers & Distributors **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A8NW (SW)	488	-	538304 180731
159	**Contemporary Trade Directory Entries** Name: Monday Location: 33, Jamestown Way, London, E14 2DE Classification: Boxes & Cartons **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	467	-	538918 180711
160	**Contemporary Trade Directory Entries** Name: M K Recovery Services Location: 37 Lanrick Road, London, E14 0FE Classification: Car Breakdown & Recovery Services **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14NW (NE)	470	-	538992 181394
160	**Contemporary Trade Directory Entries** Name: M K Recovery Services Location: Glencoe House, 37, Lanrick Road, London, E14 0FE Classification: Car Breakdown & Recovery Services **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	495	-	539009 181412
161	**Contemporary Trade Directory Entries** Name: Texaco Location: 19, Cotton Street, London, E14 0EJ Classification: Petrol Filling Stations **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	475	-	538185 180948
162	**Contemporary Trade Directory Entries** Name: Joseph Ash Location: Glaucus Works, Leven Road, London, E14 0LP Classification: Corrosion Prevention & Control **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	479	-	538521 181549
163	**Contemporary Trade Directory Entries** Name: Dynamic Cleaning Services Location: Flat 3, Oban House, Oban Street, London, E14 0JB Classification: Cleaning Services - Commercial **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	482	-	538915 181479
164	**Contemporary Trade Directory Entries** Name: Arin Garage Location: Leven Rd, London, E14 0LL Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A18SW (NW)	495	-	538444 181539
164	**Contemporary Trade Directory Entries** Name: N & F Scaffolding London Location: Cornwall Cottage, Leven Road, London, E14 0LL Classification: Scaffolding & Work Platforms **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (NW)	495	-	538444 181539

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
164	**Contemporary Trade Directory Entries** Name: K H Haulage Ltd Location: Leven Road, London, E14 0LL Classification: Crane Hire, Sales & Service **Status:** **Active** Positional Accuracy: Manually positioned to the address or location	A18SW (NW)	495	-	538444 181539
164	**Contemporary Trade Directory Entries** Name: Chilton Transport Ltd Location: Devon Cottage, Leven Road, London, E14 0LL Classification: Road Haulage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (NW)	499	-	538438 181541
165	**Contemporary Trade Directory Entries** Name: Satellite Graphics Ltd Location: Unit 6, Blackwall Trading Estate, Portree Street, London, E14 0JP Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	504	-	538861 181537
166	**Contemporary Trade Directory Entries** Name: Cotton Street Service Station Location: 40, Cotton Street, London, E14 0EL Classification: Petrol Filling Stations **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	520	-	538133 180967
166	**Contemporary Trade Directory Entries** Name: Texaco Location: 40, Cotton Street, London, E14 0EL Classification: Petrol Filling Stations **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	520	-	538133 180967
166	**Contemporary Trade Directory Entries** Name: Texaco Location: 40, Cotton Street, London, E14 0EL Classification: Petrol Filling Stations **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A12SE (W)	520	-	538133 180967
167	**Contemporary Trade Directory Entries** Name: Shun Cheong Lung Ltd Location: Unit 18, Blackwall Trading Estate, Portree Street, London, E14 0JP Classification: Food Products - Manufacturers **Status:** **Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A18SE (NE)	541	-	538917 181549
167	**Contemporary Trade Directory Entries** Name: Shun Cheong Lung Ltd Location: Unit 18, Blackwall Trading Estate, Portree Street, London, E14 0JP Classification: Food Products - Manufacturers **Status:** **Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A18SE (NE)	541	-	538917 181549
167	**Contemporary Trade Directory Entries** Name: Jumbo Uk Ltd Location: Unit 9, Blackwall Trading Estate, Lanrick Road, London, E14 0JP Classification: Packaging & Wrapping Equipment & Supplies **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	573	-	538950 181566
168	**Contemporary Trade Directory Entries** Name: Waste Removals Location: Flat 1-6, 223, East India Dock Road, London, E14 0ED Classification: Rubbish Clearance **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	547	-	538094 181045
168	**Contemporary Trade Directory Entries** Name: Single Source Binding Machines Ltd Location: 223, East India Dock Road, London, E14 0ED Classification: Bookbinding & Equipment **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	547	-	538094 181045
169	**Contemporary Trade Directory Entries** Name: Fast Form Structures Location: Longstone House,Leven Rd, London, E14 0LL Classification: Concrete Contractors **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A18SW (NW)	549	-	538365 181560

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
169	**Contemporary Trade Directory Entries** Name: Ashwood Timber & Plastics Ltd Location: Leven Road, London, E14 0LN Classification: Packaging & Wrapping Equipment & Supplies **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (NW)	587	-	538346 181593
170	**Contemporary Trade Directory Entries** Name: Star Wish Laundrette Location: 100, Burcham Street, London, E14 0SH Classification: Laundries & Launderettes **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (NW)	550	-	538148 181332
171	**Contemporary Trade Directory Entries** Name: Future Designs Location: Flat 401, Wharfside Point South, 4, Prestons Road, London, E14 9EL Classification: Lighting Manufacturers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	552	-	538256 180688
172	**Contemporary Trade Directory Entries** Name: Bill'S Household D I Y Location: 247-249 Poplar High Street, London, E14 0BE Classification: Hardware **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A12SE (SW)	558	-	538183 180764
172	**Contemporary Trade Directory Entries** Name: Blackwall Carpet Cleaners Location: 260, Poplar High Street, London, E14 0BB Classification: Cleaning Services - Domestic **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	571	-	538187 180737
172	**Contemporary Trade Directory Entries** Name: Cleaners Leamouth Location: 256, Poplar High Street, London, E14 0BB Classification: Carpet, Curtain & Upholstery Cleaners **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	589	-	538167 180733
172	**Contemporary Trade Directory Entries** Name: L V Tyres Ltd Location: 256, Poplar High Street, London, E14 0BB Classification: Tyre Dealers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	589	-	538167 180733
173	**Contemporary Trade Directory Entries** Name: Tata Shoes Location: Unit 18, Blackwall Trading Estate, Portree Street, London, E14 0JP Classification: Footwear - Manufacturers and Suppliers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	565	-	538885 181593
174	**Contemporary Trade Directory Entries** Name: Speedy Lifting Ltd Location: Unit 7, Blackwall Trading Estate, Portree Street, London, E14 0JP Classification: Lifting Equipment **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	581	-	538981 181553
175	**Contemporary Trade Directory Entries** Name: Profile Office Systems Location: Unit C24, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Copying & Duplicating Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	584	-	538223 180676
175	**Contemporary Trade Directory Entries** Name: Quadtronix Business Systems Ltd Location: Unit C24, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Photocopiers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	584	-	538223 180676
175	**Contemporary Trade Directory Entries** Name: Panic Button Press Ltd Location: Unit C2, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	588	-	538204 180689

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
175	**Contemporary Trade Directory Entries** Name: W G & R Location: Unit C15, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Electrical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	589	-	538204 180689
175	**Contemporary Trade Directory Entries** Name: Pixel Colour Imaging Location: Unit C16,Poplar Business Pk,Prestons Rd, London, E14 9RL Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	592	-	538206 180681
175	**Contemporary Trade Directory Entries** Name: Pixel Colour Imaging Ltd Location: Unit C3, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	592	-	538206 180682
175	**Contemporary Trade Directory Entries** Name: 24 Hour Pest Control Location: Unit C8, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Pest & Vermin Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	594	-	538226 180659
175	**Contemporary Trade Directory Entries** Name: P G M Property Management Ltd Location: Unit B12, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Commercial Cleaning Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	623	-	538169 180677
176	**Contemporary Trade Directory Entries** Name: Benchmark Innovations Location: Flat 8, Lawless House, Bazely Street, London, E14 0ET Classification: Distribution Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (SW)	589	-	538118 180811
177	**Contemporary Trade Directory Entries** Name: Pinstripe Dry Cleaners Location: Unit 6, Michigan Building, 2, Biscayne Avenue, London, E14 9QT Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	610	-	538494 180493
178	**Contemporary Trade Directory Entries** Name: Alphatec Location: Flat 1313, New Providence Wharf, 1, Fairmont Avenue, London, E14 9PJ Classification: Office Equipment Servicing & Maintenance **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	622	-	538539 180471
178	**Contemporary Trade Directory Entries** Name: Alphatec Ltd Location: Flat 1313, New Providence Wharf, 1, Fairmont Avenue, LONDON, E14 9PJ Classification: Office Equipment Servicing & Maintenance **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	622	-	538539 180471
178	**Contemporary Trade Directory Entries** Name: Pinstripe Laundry Location: Unit 2,Michigan Building,Biscayne Av, London, E14 9QT Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8NW (S)	622	-	538496 180480
179	**Contemporary Trade Directory Entries** Name: Sparkling Cleaning Poplar Location: 189, East India Dock Road, London, E14 0EA Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	629	-	538012 181036
180	**Contemporary Trade Directory Entries** Name: Pura Foods Ltd Location: 30, Orchard Place, London, E14 0JH Classification: Food Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (E)	642	-	539272 181188

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
180	**Contemporary Trade Directory Entries** Name: Pura Foods Ltd Location: 30, Orchard Place, London, E14 0JH Classification: Food Products - Manufacturers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (E)	642	-	539272 181188
180	**Contemporary Trade Directory Entries** Name: Keywise Group Location: Orchard Pl, London, E14 0JH Classification: Printers **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (E)	667	-	539300 181172
181	**Contemporary Trade Directory Entries** Name: Two Cleaning & Maintenance Location: Unit B1, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Commercial Cleaning Services **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	649	-	538153 180656
181	**Contemporary Trade Directory Entries** Name: Insa Bv Location: POPLAR BUSINESS PK,PRESTONS RD, London, E14 9RL Classification: Distribution Services **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	665	-	538120 180670
181	**Contemporary Trade Directory Entries** Name: Service Point Plc Location: Unit A2, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Copying & Duplicating Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	669	-	538104 180684
181	**Contemporary Trade Directory Entries** Name: Rutland Print Ltd Location: A5-7, Unit, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	682	-	538107 180660
181	**Contemporary Trade Directory Entries** Name: C F (London) Ltd Location: A5-7, Unit, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Food Products - Manufacturers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	682	-	538107 180660
181	**Contemporary Trade Directory Entries** Name: London Drawing Office Location: A5-7, Unit, Poplar Business Park, Prestons Road, London, E14 9RL Classification: Copying & Duplicating Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	682	-	538107 180660
182	**Contemporary Trade Directory Entries** Name: K D T Cleaners Ltd Location: 4, Leven Road, London, E14 0LJ Classification: Cleaning Services - Domestic **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	669	-	538296 181659
183	**Contemporary Trade Directory Entries** Name: Boyle R Motor Engineering Ltd Location: St. Lawrence Cottages,St. Lawrence St, London, E14 9QR Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	670	-	538448 180443
184	**Contemporary Trade Directory Entries** Name: Impressive Cleaning Solutions Location: 1 Fairmont Av, London, E14 9PA Classification: Commercial Cleaning Services **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A8NW (S)	672	-	538542 180420
185	**Contemporary Trade Directory Entries** Name: Trad Hire & Sales Location: Orchard Pl, London, E14 0JW Classification: Scaffolding & Work Platforms **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14SW (SE)	705	-	539280 180792

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
186	**Contemporary Trade Directory Entries** Name: Leaside Wood Recycling Project Location: Islay Wharf, Lochnagar Street, London, E14 0LA Classification: Recycling Centres **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	706	-	538395 181747
186	**Contemporary Trade Directory Entries** Name: City Wood Co Location: Islay Wharf,Lochnagar St, London, E14 0LA Classification: Wood Recycling **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A18SW (N)	706	-	538394 181746
187	**Contemporary Trade Directory Entries** Name: E M R Location: 29, Bidder Street, London, E16 4ST Classification: Scrap Metal Merchants **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	715	-	539065 181659
188	**Contemporary Trade Directory Entries** Name: Domestic Appliance Repairs Location: 34, Spey Street, London, E14 6PZ Classification: Domestic Appliances - Servicing, Repairs & Parts **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	716	-	538105 181562
188	**Contemporary Trade Directory Entries** Name: Jyps & Co Ltd Location: Flat 24, St. Michael's Court, St. Leonards Road, London, E14 6PS Classification: Printers Textile **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	764	-	538067 181591
189	**Contemporary Trade Directory Entries** Name: Jaycee Vac Services Location: 17 Chrisp St, London, E14 6LL Classification: Washing Machines - Servicing & Repairs **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A12NW (W)	716	-	537924 181126
189	**Contemporary Trade Directory Entries** Name: Best Sellers Location: 29-34, Market Square, London, E14 6BU Classification: Hardware **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	748	-	537892 181116
190	**Contemporary Trade Directory Entries** Name: Jacks Tyres Location: 1, Ailsa Street, London, E14 0LE Classification: Tyre Dealers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	717	-	538379 181752
190	**Contemporary Trade Directory Entries** Name: Da Silva Location: Lochnagar, London, E14 0LE Classification: Clothing & Fabrics - Manufacturers **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A18NW (NW)	746	-	538340 181768
190	**Contemporary Trade Directory Entries** Name: Ailsa Commercials Location: Ailsa Wharf, Ailsa Street, London, E14 0LE Classification: Car Breakers & Dismantlers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (NW)	746	-	538340 181768
190	**Contemporary Trade Directory Entries** Name: Blackwall Commercials Location: Ailsa Wharf, Ailsa Street, London, E14 0LE Classification: Commercial Vehicle Bodybuilders & Repairers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (NW)	746	-	538340 181768
190	**Contemporary Trade Directory Entries** Name: Just Spears Location: Ailsa Wharf,Ailsa St, London, E14 0LE Classification: Mechanical Engineers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A18NW (NW)	746	-	538340 181768

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
190	**Contemporary Trade Directory Entries** Name: Remarkable Recycling Solutions Ltd Location: Ailsa Wharf, Ailsa Street, London, E14 0LE Classification: Recycling Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (NW)	746	-	538340 181768
191	**Contemporary Trade Directory Entries** Name: Dallys Ltd Location: 6, Vesey Path, London, E14 6BT Classification: Wallpapers & Wall Coverings **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	731	-	537909 181052
191	**Contemporary Trade Directory Entries** Name: Bright Cleaners Location: 7, Vesey Path, London, E14 6BT Classification: Dry Cleaners **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A12SW (W)	770	-	537869 181073
191	**Contemporary Trade Directory Entries** Name: Market Lock & Safe Location: 9, Vesey Path, London, E14 6BT Classification: Safes & Vaults - Suppliers & Installers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	771	-	537868 181078
191	**Contemporary Trade Directory Entries** Name: Market Lock & Safe Location: 9, Vesey Path, London, E14 6BT Classification: Safes & Vaults - Suppliers & Installers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	772	-	537868 181078
192	**Contemporary Trade Directory Entries** Name: C Aiano & Sons Ltd Location: 64-70, Chrisp Street, London, E14 6LR Classification: Wire Products - Manufacturers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	750	-	537909 181259
193	**Contemporary Trade Directory Entries** Name: L & T Commercials Location: Bromley Hall Rd, London, E14 0LF Classification: Commercial Vehicle Dealers **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A17SE (NW)	753	-	538242 181724
194	**Contemporary Trade Directory Entries** Name: London Sawmills Ltd Location: Orchard Place, London, E14 0JW Classification: Mould Manufacturers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (E)	756	-	539345 180818
195	**Contemporary Trade Directory Entries** Name: European Metal Recycling Ltd Location: Coborn Works, Bidder Street, London, E16 4SZ Classification: Scrap Metal Merchants **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	758	-	539148 181647
195	**Contemporary Trade Directory Entries** Name: Diapo Location: 29, Bidder Street, London, E16 4ST Classification: Staircase, Balustrade & Handrail Manufacturers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	771	-	539135 181675
195	**Contemporary Trade Directory Entries** Name: U 4 Print Services Location: 16a, Bidder Street, London, E16 4ST Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	779	-	539174 181650
195	**Contemporary Trade Directory Entries** Name: Icedene Ltd Location: 28, Bidder Street, London, E16 4ST Classification: Pallets, Crates & Packing Cases **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	792	-	539162 181678

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
195	**Contemporary Trade Directory Entries** Name: E U R Transport Location: 28, Bidder Street, London, E16 4ST Classification: Road Haulage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	792	-	539162 181678
196	**Contemporary Trade Directory Entries** Name: F D M Location: Unit 7, Electra Business Park, 160, Bidder Street, London, E16 4ES Classification: Printers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	770	-	539019 181754
197	**Contemporary Trade Directory Entries** Name: C C F Location: Unit 1, Electra Business Park, 160, Bidder Street, London, E16 4ES Classification: Distribution Services **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A18NE (NE)	781	-	538947 181802
198	**Contemporary Trade Directory Entries** Name: M S A S Gobal Logistics (Uk Ltd) Location: Marine Store, Orchard Place, London, E14 0JW Classification: Freight Forwarders **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	796	-	539350 180728
199	**Contemporary Trade Directory Entries** Name: Veolia Location: Northumberland Wharf, Yabsley Street, London, E14 9RG Classification: Reclamation Centres **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	808	-	538466 180296
200	**Contemporary Trade Directory Entries** Name: Ats Euromaster Ltd Location: 118-118a, Chrisp Street, London, E14 6NL Classification: Tyre Dealers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	810	-	537886 181384
200	**Contemporary Trade Directory Entries** Name: Parker Dairies Location: 120-132, Chrisp Street, London, E14 6NL Classification: Dairies **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	840	-	537862 181403
200	**Contemporary Trade Directory Entries** Name: Sage Dairies Location: 120-132, Chrisp Street, London, E14 6NL Classification: Dairies **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	840	-	537862 181403
201	**Contemporary Trade Directory Entries** Name: Quick Skips Location: Unit 3, Ailsa Street, London, E14 0LE Classification: Waste Disposal Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	812	-	538298 181822
202	**Contemporary Trade Directory Entries** Name: Victoria Cleaning Tower Hamlets Location: 23, Cottage Street, London, E14 0AA Classification: Cleaning Services - Domestic **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	821	-	537861 180824
203	**Contemporary Trade Directory Entries** Name: Urbiana Location: 10, London, E14 5GA Classification: Jewellery Manufacturers & Repairers **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A7SE (SW)	821	-	538203 180390
204	**Contemporary Trade Directory Entries** Name: Eagles Shirtmakers Ltd Location: 22, Market Square, London, E14 6AB Classification: Shirt Makers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	826	-	537814 181107

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
205	**Contemporary Trade Directory Entries** Name: Creative Distributions Uk Ltd Location: 24, Stephenson Street, London, E16 4SA Classification: Printers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	826	-	539229 181662
206	**Contemporary Trade Directory Entries** Name: Keyline Builders Merchants Location: 10b Cody Road, London, E16 4SR Classification: Builders' Merchants **Status:** **Active** Positional Accuracy: Manually positioned to the address or location	A18NE (N)	827	-	538698 181909
206	**Contemporary Trade Directory Entries** Name: Orion Location: 11a, South Crescent, London, E16 4TL Classification: Waste Disposal Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	827	-	538698 181909
207	**Contemporary Trade Directory Entries** Name: Fairlead Maritime Location: Orchard Pl, London, E14 0JW Classification: Marine Engineers **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14SE (E)	830	-	539416 180796
208	**Contemporary Trade Directory Entries** Name: Jaycee Vac Services Location: 17, Market Square, London, E14 6AQ Classification: Domestic Appliances - Servicing, Repairs & Parts **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	833	-	537812 181177
209	**Contemporary Trade Directory Entries** Name: Orion Support Services Ltd Location: 11a, South Crescent, London, E16 4TL Classification: Waste Disposal Services **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A18NE (N)	834	-	538784 181906
209	**Contemporary Trade Directory Entries** Name: Recycle (London) Location: 11b, South Crescent, London, E16 4TL Classification: Waste Disposal Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	880	-	538789 181951
210	**Contemporary Trade Directory Entries** Name: O'Grady Plant & Haulage Ltd Location: East London Mail Centre, Twelvetrees Crescent, London, E3 3TT Classification: Road Haulage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (N)	839	-	538467 181905
211	**Contemporary Trade Directory Entries** Name: T & N Hill Waste Services Ltd Location: 1, Ives Road, London, E16 4SH Classification: Scrap Metal Merchants **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	841	-	539157 181747
211	**Contemporary Trade Directory Entries** Name: Lo Cost Location: 32, Stephenson Street, London, E16 4SA Classification: Packaging & Wrapping Equipment & Supplies **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	872	-	539164 181781
211	**Contemporary Trade Directory Entries** Name: Cory Environmental Location: 32, Stephenson Street, London, E16 4SA Classification: Recycling Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	872	-	539164 181781
212	**Contemporary Trade Directory Entries** Name: Charles Kendall Freight Ltd Location: Stephenson Street, London, E16 4SA Classification: Freight Forwarders **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	841	-	539214 181697

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
212	**Contemporary Trade Directory Entries** Name: Always Recycling Location: 29, Stephenson Street, London, E16 4SA Classification: Waste Disposal Services **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	841	-	539214 181697
212	**Contemporary Trade Directory Entries** Name: East London Services Location: 30, Stephenson Street, London, E16 4SA Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	855	-	539203 181727
212	**Contemporary Trade Directory Entries** Name: East London Buses Location: Stephenson St, London, E16 4SA Classification: Bus & Coach Operators & Stations **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	872	-	539207 181746
212	**Contemporary Trade Directory Entries** Name: Lo-Cost Packaging Ltd Location: 32 Stephenson St, London, E16 4SA Classification: Packaging & Wrapping Equipment & Supplies **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	873	-	539206 181748
213	**Contemporary Trade Directory Entries** Name: Bidder Street Motors Location: 7, Bidder Street, London, E16 4ST Classification: Mot Testing Centres **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	844	-	539113 181782
213	**Contemporary Trade Directory Entries** Name: Screensports Location: Bidder Street, London, E16 4ST Classification: T-Shirts **Status:** **Inactive** Positional Accuracy: Manually positioned to an adjacent address or location	A19NW (NE)	844	-	539113 181782
213	**Contemporary Trade Directory Entries** Name: M V Motor Repairs Location: London, E16 4st Classification: Garage Services **Status:** **Active** Positional Accuracy: Manually positioned within the geographical locality	A19NW (NE)	874	-	539141 181799
214	**Contemporary Trade Directory Entries** Name: Cleaning Experts Location: 37, Ullin Street, London, E14 6PN Classification: Carpet, Curtain & Upholstery Cleaners **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	847	-	538016 181658
215	**Contemporary Trade Directory Entries** Name: Reliance Freight Services Location: 71, Carmen Street, London, E14 6NW Classification: Freight Forwarders **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	853	-	537874 181462
216	**Contemporary Trade Directory Entries** Name: Waidson Transport Ltd Location: 121-123, Poplar High Street, London, E14 0AE Classification: Road Haulage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	859	-	537838 180776
217	**Contemporary Trade Directory Entries** Name: Courtleigh Ltd Location: Cody Road, London, E16 4SR Classification: Linen Manufacturers & Wholesalers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	866	-	538969 181885
218	**Contemporary Trade Directory Entries** Name: Clothes Care , Dry Cleaning Location: 21, Market Way, London, E14 6AH Classification: Dry Cleaners **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	868	-	537787 181248

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
218	**Contemporary Trade Directory Entries** Name: Photo Genisis 2 Location: 19, Market Way, London, E14 6AH Classification: Photographic Processors **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	868	-	537787 181248
218	**Contemporary Trade Directory Entries** Name: Clothes Care Dry Cleaning Location: 21, Market Way, London, E14 6AH Classification: Dry Cleaners **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	868	-	537787 181248
219	**Contemporary Trade Directory Entries** Name: Trans T Transport Ltd Location: St Leonards Wharf,Bromley Hall Rd, London, E14 0LF Classification: Road Haulage Services **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A17NE (NW)	874	-	538290 181886
220	**Contemporary Trade Directory Entries** Name: Tramar Trading Location: 64 Orchard Pl, London, E14 0JW Classification: Tile Manufacturers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (SE)	876	-	539437 180724
220	**Contemporary Trade Directory Entries** Name: Time Art Gallery Location: 64 Trinity Buoy Wharf, Orchard Place, London, E14 0JY Classification: Farriers **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A9NE (SE)	877	-	539438 180724
220	**Contemporary Trade Directory Entries** Name: The Communications Co Uk.Ltd Location: 64, Orchard Place, London, E14 0JW Classification: Radio Communication Equipment **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	877	-	539438 180724
220	**Contemporary Trade Directory Entries** Name: Westminster Petroleum Location: 64, Orchard Place, LONDON, E14 0JW Classification: Oil Fuel Distributors **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	877	-	539438 180724
220	**Contemporary Trade Directory Entries** Name: Pq2 Ltd Location: 64, Orchard Place, London, E14 0JW Classification: Greeting Card Publishers & Wholesalers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (SE)	877	-	539438 180724
220	**Contemporary Trade Directory Entries** Name: Comast Construction Location: 64, Orchard Place, London, E14 0JW Classification: Concrete Contractors **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	883	-	539452 180742
220	**Contemporary Trade Directory Entries** Name: 4 Life Promotions Location: 64 Orchard Pl, London, E14 0JW Classification: T-Shirts **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14SE (E)	894	-	539467 180750
221	**Contemporary Trade Directory Entries** Name: Lightning Office Supplies Ltd Location: 300, Manor Road, London, E16 4PA Classification: Office Furniture & Equipment **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	886	-	539343 181622
222	**Contemporary Trade Directory Entries** Name: Fridgehire.Co.Uk Location: 1, Wellspring Close, London, E14 6FB Classification: Refrigeration Equipment - Commercial **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	890	-	538189 181852

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
222	**Contemporary Trade Directory Entries** Name: Motor Show Planet Ltd Location: 44 Gillender St, London, E14 6RN Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	909	-	538193 181876
222	**Contemporary Trade Directory Entries** Name: Repro Image Location: 44 Gillender St, London, E14 6RN Classification: Copying & Duplicating Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	909	-	538193 181876
223	**Contemporary Trade Directory Entries** Name: Cranfield Paper Recycling Ltd Location: 18a, Cording Street, London, E14 6NR Classification: Recycling Services **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	897	-	537863 181534
224	**Contemporary Trade Directory Entries** Name: Lanham Print Finishers Location: 156 Chrisp St, London, E14 6NL Classification: Print Finishers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A17SW (NW)	912	-	537826 181498
224	**Contemporary Trade Directory Entries** Name: V & N Print Finishers Ltd Location: 1, Cording Street, London, E14 6NR Classification: Print Finishers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	941	-	537810 181529
224	**Contemporary Trade Directory Entries** Name: Contrast Ltd Location: 160, Chrisp Street, London, E14 6NL Classification: Printers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A17SW (NW)	941	-	537810 181529
224	**Contemporary Trade Directory Entries** Name: Mainstore Ltd Location: 156-160, Chrisp Street, London, E14 6NL Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A17SW (NW)	947	-	537795 181515
224	**Contemporary Trade Directory Entries** Name: D K Print & Design Location: 156-160, Chrisp Street, London, E14 6NL Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A17SW (NW)	947	-	537795 181515
225	**Contemporary Trade Directory Entries** Name: Addlefields Location: 1, Bridge House Quay, London, E14 9QW Classification: Cleaning Services - Domestic **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	912	-	538322 180230
226	**Contemporary Trade Directory Entries** Name: Keolis Amey Docklands Location: Castor Lane, London, E14 0BL Classification: Railways **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	915	-	537846 180630
226	**Contemporary Trade Directory Entries** Name: Solutions Technology Ltd Location: Castor Lane, London, E14 0BL Classification: Electronic Engineers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	915	-	537846 180630
226	**Contemporary Trade Directory Entries** Name: Serco Docklands Ltd Location: Castor Lane, London, E14 0DS Classification: Railways **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	915	-	537846 180630

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
227	**Contemporary Trade Directory Entries** Name: Frequency Precision Location: 21 Clipper House, 33 Trinity Buoy Wharf, London, E14 0FL Classification: Medical Equipment Manufacturers **Status:** **Active** Positional Accuracy: Manually positioned within the geographical locality	A9NE (SE)	919	-	539461 180675
228	**Contemporary Trade Directory Entries** Name: Consolidated Freightways Location: Stephenson St, London, E16 4SA Classification: Freight Forwarders **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19NW (NE)	924	-	539179 181834
228	**Contemporary Trade Directory Entries** Name: Cory Enviromental Location: Oasis Park, Stephenson Street, London, E16 4SA Classification: Recycling Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	927	-	539154 181855
229	**Contemporary Trade Directory Entries** Name: The Remet Company Ltd Location: 9a, South Crescent, London, E16 4TL Classification: Scrap Metal Merchants **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A18NW (N)	928	-	538609 182012
229	**Contemporary Trade Directory Entries** Name: The Remet Co Ltd Location: 9a, South Crescent, London, E16 4TL Classification: Non-Ferrous Metals **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (N)	928	-	538609 182012
230	**Contemporary Trade Directory Entries** Name: A Eames Ltd Location: Unit Q8 Billingsgate Market,Trafalgar Way, London, E14 5ST Classification: Packaging Materials Manufacturers & Suppliers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	955	-	537904 180476
230	**Contemporary Trade Directory Entries** Name: Peter Mills Location: Billingsgate Market,Trafalgar Way, London, E14 5ST Classification: Photo & Digital Imaging Bureaus **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A7NW (SW)	964	-	537872 180501
231	**Contemporary Trade Directory Entries** Name: Napier Jones Location: Gillian House, Stephenson Street, London, E16 4SA Classification: Printers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	958	-	539119 181913
231	**Contemporary Trade Directory Entries** Name: Printing In London Location: Bidder Street, London, E16 4SA Classification: Digital Printing **Status:** **Active** Positional Accuracy: Manually positioned to the address or location	A19NW (NE)	959	-	539120 181914
231	**Contemporary Trade Directory Entries** Name: Ink Spot Location: Gillian House, Stephenson Street, London, E16 4SA Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	962	-	539134 181909
231	**Contemporary Trade Directory Entries** Name: Marshall Offset Printing Ltd Location: Gillian House, Stephenson Street, London, E16 4SA Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	962	-	539134 181909
231	**Contemporary Trade Directory Entries** Name: Arboreal Print Group Location: Gillian House, Stephenson Street, London, E16 4SA Classification: Printers **Status:** **Active** Positional Accuracy: Manually positioned to the address or location	A19NW (NE)	962	-	539126 181914

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
231	**Contemporary Trade Directory Entries** Name: Colourscript Location: Gillian House, Stephenson Street, London, E16 4SA Classification: Printers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	962	-	539134 181909
231	**Contemporary Trade Directory Entries** Name: Dolphin Print Ltd Location: Gillian House, Stephenson Street, LONDON, E16 4SA Classification: Printers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	962	-	539134 181909
231	**Contemporary Trade Directory Entries** Name: Ink Sport Location: Gillian House, Stephenson Street, London, E16 4SA Classification: Printers Textile **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	962	-	539134 181909
231	**Contemporary Trade Directory Entries** Name: Dockland Packaging Supplies Ltd Location: 67, Stephenson Street, London, E16 4SA Classification: Packaging & Wrapping Equipment & Supplies **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	984	-	539111 181947
231	**Contemporary Trade Directory Entries** Name: Perfection Print Finishers Location: 67, Stephenson Street, London, E16 4SA Classification: Print Finishers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	984	-	539111 181947
231	**Contemporary Trade Directory Entries** Name: S S Print Solutions Location: 67, Stephenson Street, London, E16 4SA Classification: Print Finishers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A19NW (NE)	984	-	539111 181947
232	**Contemporary Trade Directory Entries** Name: Kilnbridge Construction Services Ltd Location: 9b, South Crescent, London, E16 4TL Classification: Waste Disposal Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	961	-	538655 182045
233	**Contemporary Trade Directory Entries** Name: Cleaners Silvertown Location: 115 Silvertown Way, London, E16 1EA Classification: Carpet, Curtain & Upholstery Cleaners **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14NE (E)	964	-	539567 181344
233	**Contemporary Trade Directory Entries** Name: Just Fords Location: 102, Silvertown Way, London, E16 1EA Classification: Car Body Repairs **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	964	-	539567 181344
234	**Contemporary Trade Directory Entries** Name: Veolia Environmental Services Location: Tunnel Approach Transfer Station, 40, Gillender Street, London, E14 6RH Classification: Waste Disposal Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	973	-	538180 181943
234	**Contemporary Trade Directory Entries** Name: B M W Spare Parts Location: 52 Gillender Street, London, E14 6RN Classification: Garage Services **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A17NE (NW)	982	-	538160 181942
234	**Contemporary Trade Directory Entries** Name: Mr Beamer'S Location: 52 Gillender St, London, E14 6RN Classification: Car Breakers & Dismantlers **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A17NE (NW)	998	-	538160 181960

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
235	**Contemporary Trade Directory Entries** Name: Cemex Canning Town Plant Location: Unit 10a Cody Business Centre,Cody Road, London, E16 4TL Classification: Sand, Gravel & Other Aggregates **Status:** **Active** Positional Accuracy: Manually positioned within the geographical locality	A18NE (N)	982	-	538792 182054
235	**Contemporary Trade Directory Entries** Name: M & M Print Location: Unit 5/6, Datapoint Business Centre, 6, South Crescent, London, E16 4TL Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	982	-	538792 182054
235	**Contemporary Trade Directory Entries** Name: M & M Print Ltd Location: Unit 5/6, Datapoint Business Centre, 6, South Crescent, London, E16 4TL Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	982	-	538792 182054
235	**Contemporary Trade Directory Entries** Name: Surreal Finishing Studio Ltd Location: Unit 5/6, Datapoint Business Centre, 6, South Crescent, London, E16 4TL Classification: Printers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	982	-	538792 182054
235	**Contemporary Trade Directory Entries** Name: Avalon Print Services Ltd Location: Unit 5/6, Datapoint Business Centre, 6, South Crescent, London, E16 4TL Classification: Printers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A18NE (N)	982	-	538792 182054
235	**Contemporary Trade Directory Entries** Name: Fleet Finishing Location: Unit 5/6, Datapoint Business Centre, 6, South Crescent, London, E16 4TL Classification: Print Finishers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A18NE (N)	982	-	538792 182054
235	**Contemporary Trade Directory Entries** Name: Aquarius Print Finishers Location: Unit 5/6, Datapoint Business Centre, 6, South Crescent, London, E16 4TL Classification: Print Finishers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A18NE (N)	982	-	538792 182054
236	**Contemporary Trade Directory Entries** Name: Xcelsus Location: Xcelsus Ltd, 2, Hallsville Road, London, E16 1EE Classification: Mot Testing Centres **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	998	-	539620 181267
237	**Fuel Station Entries** Name: Orchard Wharf Service Station Location: Leamouth Road Lower Lea Crossing, Leamouth , London, Inner London, E14 0JG Brand: ESSO Premises Type: Not Applicable **Status:** **Obsolete** Positional Accuracy: Located by supplier to within 10m	A13SE (E)	318	-	538955 181051
238	**Fuel Station Entries** Name: Cotton Street Service Station Location: 40, Cotton Street , Poplar , London, Inner London, E14 0EL Brand: TEXACO Premises Type: Petrol Station **Status:** **Open** Positional Accuracy: Manually positioned to the address or location	A12SE (W)	520	-	538133 180967
239	**Fuel Station Entries** Name: Castle Location: Silvertown Way Hallsville Road, Canning Town , London, Inner London, E16 1DG Brand: Obsolete Premises Type: Not Applicable **Status:** **Obsolete** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	979	-	539616 181137

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
240	**Fuel Station Entries** Name: Tylers (London) Ltd Location: 43, Gillender Street , Bromley By Bow , London, Inner London, E14 6RN Brand: Obsolete Premises Type: Not Applicable **Status:** **Obsolete** Positional Accuracy: Located by supplier to within 10m	A17NE (NW)	979	-	538168 181943
241	**Fuel Station Entries** Name: Silver Town Service Station Location: Silvertown Way , Canning Town , London, Inner London, E16 1EA Brand: Obsolete Premises Type: Not Applicable **Status:** **Obsolete** Positional Accuracy: Located by supplier to within 10m	A14NE (E)	985	-	539600 181300
242	**Points of Interest - Commercial Services** Name: Orchard Wharf Service Station Location: Leamouth Road, Lower Lea Crossing, Leamouth, London, E6 5SJ Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A13NE (E)	300	11	538938 181087
242	**Points of Interest - Commercial Services** Name: Car Wash Location: Leamouth Road, Lower Lea Crossing, Leamouth, London, Greater London, E6 5SJ Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A13NE (E)	319	11	538957 181090
243	**Points of Interest - Commercial Services** Name: Scaramal Motorcycles Location: 34 Quixley Street, London, E14 9PU Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (S)	334	11	538527 180771
244	**Points of Interest - Commercial Services** Name: Dockland Service Centre Ltd Location: 314 Poplar High Street, London, E14 0BB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (SW)	464	11	538325 180744
245	**Points of Interest - Commercial Services** Name: Chilton Transport (Poplar) Ltd Location: Devon Cottage, Leven Road, London, E14 0LL Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A18SW (NW)	499	11	538438 181541
246	**Points of Interest - Commercial Services** Name: Car Wash Location: 40 Cotton Street, London, E14 0EL Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A12SE (W)	520	11	538133 180967
246	**Points of Interest - Commercial Services** Name: Shah Jalal Express Ltd Location: 231 East India Dock Road, London, E14 0EG Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12SE (W)	521	11	538120 181043
246	**Points of Interest - Commercial Services** Name: Waste Removal Location: 223 East India Dock Road, London, E14 0ED Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A12SE (W)	547	11	538094 181045
247	**Points of Interest - Commercial Services** Name: Line Maker Ltd Location: 20 Lanrick Road, London, E14 0JF Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A19SW (NE)	551	11	539027 181475

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
248	**Points of Interest - Commercial Services** Name: Benchmark Innovations Location: Flat 8 Lawless House, Bazely Street, London, E14 0ET Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12SE (SW)	589	11	538118 180811
249	**Points of Interest - Commercial Services** Name: RAC Auto Windscreens Location: Unit C3 Poplar Business Park, Prestons Road, London, E14 9RL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	592	11	538206 180682
249	**Points of Interest - Commercial Services** Name: RAC Auto Windscreens Location: Unit C3 Poplar Business Park, Prestons Road, London, E14 9RL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	592	11	538206 180682
250	**Points of Interest - Commercial Services** Name: Alfa Victor Sierra Ltd Location: Flat 719 New Providence Wharf 1, Fairmont Avenue, London, E14 9PF Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NW (S)	622	11	538539 180471
251	**Points of Interest - Commercial Services** Name: Leaside Wood Recycling Project Location: Islay Wharf, Lochnagar Street, London, E14 0LA Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A18SW (N)	706	11	538395 181747
251	**Points of Interest - Commercial Services** Name: City Wood Co Location: Islay Wharf, Lochnagar St, London, E14 0LA Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A18SW (N)	706	11	538394 181746
252	**Points of Interest - Commercial Services** Name: Scrap Yard Location: Not Supplied Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	714	11	539066 181656
252	**Points of Interest - Commercial Services** Name: E M R Location: 29 Bidder Street, London, E16 4ST Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A19SW (NE)	714	11	539064 181658
252	**Points of Interest - Commercial Services** Name: Scrap Yard Location: E16 Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A19SW (NE)	717	11	539066 181660
253	**Points of Interest - Commercial Services** Name: Veolia Environnement Location: 2 Yabsley Street, London, E14 9RG Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A8SW (S)	744	11	538486 180357
254	**Points of Interest - Commercial Services** Name: C C F Location: Unit 1 Electra Business Park 160, Bidder Street, London, E16 4ES Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A18NE (NE)	778	11	538960 181793
255	**Points of Interest - Commercial Services** Name: Nimbrook Enterprises Location: 28 Bidder Street, London, E16 4ST Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A19SW (NE)	792	11	539162 181678

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255	**Points of Interest - Commercial Services** Name: T & N Hill Waste Services Ltd Location: 1 Ives Road, London, E16 4SH Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A19SW (NE)	841	11	539156 181747
255	**Points of Interest - Commercial Services** Name: East London Services Location: 30 Stephenson Street, London, E16 4SA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19SW (NE)	855	11	539203 181727
255	**Points of Interest - Commercial Services** Name: East London Services Location: 30 Stephenson Street, London, E16 4SA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19SW (NE)	855	11	539203 181727
255	**Points of Interest - Commercial Services** Name: Cory Environmental Location: 32 Stephenson Street, London, E16 4SA Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A19NW (NE)	872	11	539164 181781
256	**Points of Interest - Commercial Services** Name: Orion Location: 11a South Crescent, London, E16 4TL Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A18NE (N)	827	11	538698 181909
257	**Points of Interest - Commercial Services** Name: O'Grady Plant & Haulage Ltd Location: East London Mail Centre, Twelvetrees Crescent, London, E3 3TT Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A18NW (N)	839	11	538467 181905
258	**Points of Interest - Commercial Services** Name: Bidder Street Motors Location: Bidder Street, London, E16 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	843	11	539112 181782
258	**Points of Interest - Commercial Services** Name: Bidder Street Motors Location: Bidder Street, London, E16 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	844	11	539113 181782
258	**Points of Interest - Commercial Services** Name: J & J Peugeot Spares Location: 9 Bidder Street, London, E16 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	846	11	539126 181776
258	**Points of Interest - Commercial Services** Name: M V Motor Repairs Location: 7 Bidder Street, London, E16 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	872	11	539140 181798
258	**Points of Interest - Commercial Services** Name: Cory Enviromental Location: Oasis Park, Stephenson Street, London, E16 4SA Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A19NW (NE)	927	11	539154 181855
259	**Points of Interest - Commercial Services** Name: Waidson Transport Ltd Location: 121-123 Poplar High Street, London, E14 0AE Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12SW (W)	859	11	537838 180776

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
260	**Points of Interest - Commercial Services** Name: B M W Spare Parts Location: 52-53 Gillender Street, London, E14 6RN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	871	11	538190 181831
261	**Points of Interest - Commercial Services** Name: Viridor Ltd Location: 11b South Crescent, London, E16 4TL Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A18NE (N)	880	11	538789 181951
262	**Points of Interest - Commercial Services** Name: Cranfield Paper Recycling Ltd Location: 18a Cording Street, London, E14 6NR Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A17SW (NW)	897	11	537863 181534
263	**Points of Interest - Commercial Services** Name: Pad Home Ltd Location: 1 Trinity Buoy Wharf, London, E14 0FH Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A9NE (E)	925	11	539499 180747
264	**Points of Interest - Commercial Services** Name: The Remet Company Ltd Location: 9a South Crescent, London, E16 4TL Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A18NW (N)	928	11	538609 182012
264	**Points of Interest - Commercial Services** Name: The Remet Company Ltd Location: 9a South Crescent, London, E16 4TL Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A18NW (N)	928	11	538609 182012
265	**Points of Interest - Commercial Services** Name: Greenshield Services Location: 1-10 Sabbarton Street, London, E16 1DT Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A14NE (E)	938	11	539561 181254
265	**Points of Interest - Commercial Services** Name: Greenshield Services Location: 1-10 Sabbarton Street, London, E16 1DT Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A14NE (E)	938	11	539561 181254
265	**Points of Interest - Commercial Services** Name: Xcelsus Location: Xcelsus Ltd 2, Hallsville Road, London, E16 1EE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NE (E)	997	11	539619 181266
266	**Points of Interest - Commercial Services** Name: E1 Taxis Ltd Location: 67 Stephenson Street, London, E16 4SA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	983	11	539111 181947
267	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	346	11	538479 180778
267	**Points of Interest - Manufacturing and Production** Name: Works Location: E14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	348	11	538476 180778

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
268	**Points of Interest - Manufacturing and Production** Name: Gas Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	395	11	538702 181474
269	**Points of Interest - Manufacturing and Production** Name: Works Location: E14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18SW (N)	422	11	538595 181504
269	**Points of Interest - Manufacturing and Production** Name: Tank Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18SW (N)	481	11	538556 181558
269	**Points of Interest - Manufacturing and Production** Name: Tank Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18SW (N)	490	11	538563 181568
270	**Points of Interest - Manufacturing and Production** Name: Tank Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	572	11	539050 181482
271	**Points of Interest - Manufacturing and Production** Name: Works Location: 38 Susannah Street, London, E14 6LS Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A12SE (W)	575	11	538064 181070
272	**Points of Interest - Manufacturing and Production** Name: Tanks Location: Not Supplied Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SW (E)	589	11	539222 181003
272	**Points of Interest - Manufacturing and Production** Name: Tank Location: Not Supplied Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SW (E)	613	11	539245 180998
273	**Points of Interest - Manufacturing and Production** Name: Factory Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	601	11	538345 181609
274	**Points of Interest - Manufacturing and Production** Name: Tanks Location: Not Supplied Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14NW (E)	618	11	539256 181114
274	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NW (E)	620	11	539258 181085
274	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NW (E)	637	11	539269 181171

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
274	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	703	11	539340 181132
275	**Points of Interest - Manufacturing and Production** Name: Poplar Business Park Location: Unit B1-B2 Poplar Business Park, Prestons Road, London, E14 9RL Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A7NE (SW)	627	11	538153 180690
275	**Points of Interest - Manufacturing and Production** Name: Poplar Business Park Location: E14 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	662	11	538159 180629
276	**Points of Interest - Manufacturing and Production** Name: Tank Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SW (SE)	733	11	539304 180777
277	**Points of Interest - Manufacturing and Production** Name: London Small Business Centre Location: 12-14 Vesey Path, London, E14 6BT Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A12SW (W)	734	11	537905 181081
278	**Points of Interest - Manufacturing and Production** Name: Works Location: E16 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	776	11	539206 181614
278	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	779	11	539210 181614
278	**Points of Interest - Manufacturing and Production** Name: Works Location: E16 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	787	11	539247 181584
278	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	791	11	539251 181585
278	**Points of Interest - Manufacturing and Production** Name: Works Location: E16 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	792	11	539160 181681
278	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	795	11	539164 181681
279	**Points of Interest - Manufacturing and Production** Name: Tank Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A14SE (SE)	811	11	539382 180761

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
279	**Points of Interest - Manufacturing and Production** Name: Tank Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (SE)	815	11	539383 180754
279	**Points of Interest - Manufacturing and Production** Name: Tanks Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (SE)	826	11	539396 180757
280	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	813	11	537885 181387
280	**Points of Interest - Manufacturing and Production** Name: Works Location: E14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	813	11	537885 181387
281	**Points of Interest - Manufacturing and Production** Name: Tank Location: E16 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	815	11	539378 181426
282	**Points of Interest - Manufacturing and Production** Name: Works Location: E16 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	848	11	539137 181770
282	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	852	11	539147 181768
282	**Points of Interest - Manufacturing and Production** Name: Works Location: E16 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	865	11	539164 181771
282	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	868	11	539169 181772
283	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: E16 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	856	11	538679 181939
283	**Points of Interest - Manufacturing and Production** Name: Works Location: E16 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A18NW (N)	890	11	538626 181974
284	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	877	11	537852 181470

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
284	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	881	11	537856 181488
285	**Points of Interest - Manufacturing and Production** Name: Tanks Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	888	11	537938 180540
285	**Points of Interest - Manufacturing and Production** Name: Tank Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A7NW (SW)	892	11	537932 180542
285	**Points of Interest - Manufacturing and Production** Name: Tank Location: E14 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A7NW (SW)	895	11	537931 180538
286	**Points of Interest - Manufacturing and Production** Name: Electricity Generating Station Location: E16 Category: Industrial Features Class Code: Energy Production Positional Accuracy: Positioned to address or location	A19NW (NE)	903	11	539028 181899
287	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	969	11	537789 181549
288	**Points of Interest - Manufacturing and Production** Name: Tank Location: E16 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A18NE (N)	975	11	538652 182059
288	**Points of Interest - Manufacturing and Production** Name: Tanks Location: E16 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	975	11	538652 182059
289	**Points of Interest - Manufacturing and Production** Name: Works Location: E16 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	988	11	539101 181958
289	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	992	11	539106 181959
289	**Points of Interest - Manufacturing and Production** Name: Works Location: E16 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	996	11	539121 181956
289	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	999	11	539126 181956

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290	**Points of Interest - Manufacturing and Production** Name: Electricity Generating Station Location: E16 Category: Industrial Features Class Code: Energy Production Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	993	11	539019 182002
291	**Points of Interest - Manufacturing and Production** Name: Works Location: E3 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	995	11	538211 181983
292	**Points of Interest - Manufacturing and Production** Name: Tank Location: E3 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18NW (N)	998	11	538431 182060
293	**Points of Interest - Public Infrastructure** Name: Rock UK Ltd Location: Leamouth Road, London, E14 0JG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NE (E)	319	11	538957 181092
293	**Points of Interest - Public Infrastructure** Name: Orchard Wharf Otr Service Station Location: Leamouth Road, Lower Lea Crossing, Leamouth, London, Greater London, E6 5SJ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NE (E)	319	11	538957 181090
293	**Points of Interest - Public Infrastructure** Name: Esso Location: Leamouth Road, London, E14 0JG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NE (E)	322	11	538960 181091
293	**Points of Interest - Public Infrastructure** Name: Esso Location: Leamouth Road, London, E14 0JG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NE (E)	322	11	538960 181091
294	**Points of Interest - Public Infrastructure** Name: Bus Terminus Location: E14 Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to an adjacent address or location	A8NW (SW)	455	11	538396 180701
295	**Points of Interest - Public Infrastructure** Name: Texaco Location: 19 Cotton Street, London, E14 0EJ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	475	11	538185 180948
295	**Points of Interest - Public Infrastructure** Name: Texaco Ltd Location: 19 Cotton Street, London, E14 0EJ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	475	11	538185 180948
295	**Points of Interest - Public Infrastructure** Name: Cotton Street Service Station Location: 40 Cotton Street, London, E14 0EL Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	520	11	538133 180967
295	**Points of Interest - Public Infrastructure** Name: Texaco Location: 40 Cotton Street, London, E14 0EL Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	520	11	538133 180967

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
295	**Points of Interest - Public Infrastructure** Name: Cotton Street Sstn Location: 40 Cotton Street, London, E14 0EL Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	520	11	538133 180967
295	**Points of Interest - Public Infrastructure** Name: Cotton Street Service Station Location: 40 Cotton Street, London, E14 0EL Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A12SE (W)	520	11	538133 180967
296	**Points of Interest - Public Infrastructure** Name: Waste Transfer Station Location: E14 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	540	11	539046 181439
297	**Points of Interest - Public Infrastructure** Name: Leaside Wood Recycling Project Location: Islay Wharf, Lochnagar Street, London, E14 0LA Category: Infrastructure and Facilities Class Code: Recycling Centres Positional Accuracy: Positioned to address or location	A18SW (N)	706	11	538395 181747
298	**Points of Interest - Public Infrastructure** Name: Sluice Location: E16 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	751	11	538672 181835
299	**Points of Interest - Public Infrastructure** Name: Poplar Fire Station Location: Poplar Fire Station 168, East India Dock Road, London, E14 0BP Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A12SW (W)	773	11	537874 180976
300	**Points of Interest - Public Infrastructure** Name: Waste Transfer Station Location: E14 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	816	11	538452 180291
301	**Points of Interest - Public Infrastructure** Name: Poplar Police Station Location: Poplar Police Station 2, Market Way, London, E14 6AH Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A12NW (W)	822	11	537830 181230
301	**Points of Interest - Public Infrastructure** Name: Metropolitan Police Service Location: Poplar Police Station 2, Market Way, London, E14 6AH Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A12NW (W)	822	11	537830 181230
301	**Points of Interest - Public Infrastructure** Name: Metropolitan Police Service Poplar Location: Poplar Police Station 2, Market Way, London, E14 6AH Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A12NW (W)	822	11	537830 181230
302	**Points of Interest - Public Infrastructure** Name: Mortuary Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	828	11	537867 180786
303	**Points of Interest - Public Infrastructure** Name: T & N Hill Waste Services Ltd Location: 1 Ives Road, London, E16 4SH Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A19SW (NE)	841	11	539156 181747

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303	**Points of Interest - Public Infrastructure** Name: Always Recycling Location: 29 Stephenson Street, London, E16 4SA Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A19SW (NE)	841	11	539214 181697
303	**Points of Interest - Public Infrastructure** Name: Always Recycling Ltd Location: 29 Stephenson Street, London, E16 4SA Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A19SW (NE)	841	11	539214 181697
304	**Points of Interest - Public Infrastructure** Name: Canning Town Station Location: Nr Silvertown Way, E16 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A14NE (E)	847	11	539442 181352
304	**Points of Interest - Public Infrastructure** Name: Canning Town Bus Station Location: E16 Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	876	11	539437 181445
305	**Points of Interest - Public Infrastructure** Name: Kilnbridge Construction Services Ltd Location: 9b South Crescent, London, E16 4TL Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A18NE (N)	961	11	538655 182045
306	**Points of Interest - Public Infrastructure** Name: Veolia Environmental Services Location: Tunnel Approach Transfer Station 40, Gillender Street, London, E14 6RH Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A17NE (NW)	973	11	538180 181943
306	**Points of Interest - Public Infrastructure** Name: Cleanaway Ltd Location: Tunnel Approach Transfer Station 40, Gillender Street, London, E14 6RH Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A17NE (NW)	973	11	538180 181943
307	**Points of Interest - Recreational and Environmental** Name: Playground Location: Ettrick Street, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13NW (NW)	354	11	538436 181374
308	**Points of Interest - Recreational and Environmental** Name: Playground Location: Newport Avenue, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13SE (SE)	365	11	538792 180754
308	**Points of Interest - Recreational and Environmental** Name: Playground Location: Newport Avenue, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	374	11	538794 180745
309	**Points of Interest - Recreational and Environmental** Name: Playground Location: Fortrose Close, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13NE (NE)	380	11	538869 181387
310	**Points of Interest - Recreational and Environmental** Name: Playground Location: Naval Row, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13SW (SW)	448	11	538317 180774

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
310	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	449	11	538317 180773
311	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Balmore Close, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A18SW (NW)	479	11	538308 181431
312	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Blackwall Way, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A8NW (S)	618	11	538475 180489
313	**Points of Interest - Recreational and Environmental** Name: Playground Location: Poplar High Street, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SE (SW)	639	11	538083 180770
313	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SE (SW)	640	11	538081 180772
314	**Points of Interest - Recreational and Environmental** Name: Playground Location: East India Dock Road, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SE (W)	646	11	537999 181002
314	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	652	11	537993 181002
315	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	781	11	537889 180868
315	**Points of Interest - Recreational and Environmental** Name: Playground Location: Cottage Street, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (W)	781	11	537888 180870
316	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	848	11	537910 181517
317	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	883	11	537774 180909
317	**Points of Interest - Recreational and Environmental** Name: Playground Location: Woodstock Terrace, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (W)	883	11	537774 180908

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
317	**Points of Interest - Recreational and Environmental** Name: Games Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	914	11	537743 180907
318	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	925	11	537717 181158
318	**Points of Interest - Recreational and Environmental** Name: Playground Location: Ricardo Street, E14 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	925	11	537717 181158
319	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	947	11	539312 181750
319	**Points of Interest - Recreational and Environmental** Name: Playground Location: Manor Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A19SW (NE)	948	11	539312 181751
320	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	955	11	538073 181854
321	**Underground Electrical Cables** Unique Feature Identifier: 262104 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 16th January 2015	A18NE (N)	790	12	538890 181834
322	**Underground Electrical Cables** Unique Feature Identifier: 262105 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 5th August 2013	A18NE (N)	794	12	538892 181837
323	**Underground Electrical Cables** Unique Feature Identifier: 262103 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 16th January 2015	A18NE (N)	820	12	538911 181858
324	**Underground Electrical Cables** Unique Feature Identifier: 270334 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 4th June 2013	A18NE (N)	822	12	538884 181869
325	**Underground Electrical Cables** Unique Feature Identifier: 262106 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 5th August 2013	A18NE (N)	823	12	538912 181861

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
326	**Underground Electrical Cables** Unique Feature Identifier: 270335 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 4th June 2013	A18NE (N)	833	12	538900 181876
327	**Underground Electrical Cables** Unique Feature Identifier: 262274 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 4th August 2014	A18NE (N)	883	12	538873 181935
328	**Underground Electrical Cables** Unique Feature Identifier: 279543 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 4th June 2013	A18NE (N)	885	12	538914 181926
329	**Underground Electrical Cables** Unique Feature Identifier: 262250 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 4th August 2014	A18NE (N)	886	12	538876 181938
330	**Underground Electrical Cables** Unique Feature Identifier: 279544 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 4th June 2013	A18NE (N)	887	12	538909 181929
331	**Underground Electrical Cables** Unique Feature Identifier: 279546 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 4th June 2013	A18NE (N)	915	12	538965 181940
332	**Underground Electrical Cables** Unique Feature Identifier: 279448 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 3rd February 2014	A18NE (N)	941	12	538859 181999
333	**Underground Electrical Cables** Unique Feature Identifier: 279545 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 4th June 2013	A18NE (N)	942	12	538926 181982
334	**Underground Electrical Cables** Unique Feature Identifier: 279447 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 3rd February 2014	A18NE (N)	944	12	538860 182002
335	**Underground Electrical Cables** Unique Feature Identifier: 279446 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 3rd February 2014	A18NE (N)	968	12	538941 182004

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
336	**Underground Electrical Cables** Unique Feature Identifier: 279449 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 3rd February 2014	A18NE (N)	982	12	538941 182019

Sensitive Land Use

Map ID	Details		Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Marine Nature Reserves					
337	Name: Multiple Area: Area (m2): Source:	Thames Estuary Y 111738953.07 Natural England	A8NE (S)	485	13	538775 180620
	Nitrate Vulnerable Zones					
338	Name: Description: Source:	Lee Nvz Surface Water Environment Agency, Head Office	A14SW (E)	422	14	539060 181072

Data Currency

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
London Borough of Southwark - Pollution Control Unit	April 2013	Annual Rolling Update
London Borough of Greenwich - Environmental Health Department	April 2014	Annual Rolling Update
London Borough of Lewisham - Environmental Health Department	January 2013	Annual Rolling Update
London Borough of Barking And Dagenham - Health and Consumer Services	July 2014	Annual Rolling Update
London Borough of Newham - Environmental Health Department	March 2015	Annual Rolling Update
London Borough of Waltham Forest - Environmental Health Department	October 2013	Annual Rolling Update
City of London - Environmental Health Department	October 2014	Annual Rolling Update
London Borough of Redbridge - Environmental Health Department	October 2014	Annual Rolling Update
London Borough of Tower Hamlets - Environmental Health Department	October 2014	Annual Rolling Update
London Borough of Hackney - Environmental Health Department	October 2017	Annual Rolling Update
London Borough of Islington - Public Protection	September 2017	Annual Rolling Update
Discharge Consents		
Environment Agency - Thames Region	October 2017	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Thames Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Thames Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - Kent & South London Area	October 2017	Quarterly
Environment Agency - South East Region - North East Thames Area	October 2017	Quarterly
Environment Agency - Thames Region	October 2017	Quarterly
Local Authority Integrated Pollution Prevention And Control		
London Borough of Southwark - Environmental Health Department	April 2014	Variable
City of London - Environmental Health Department	August 2014	Variable
London Borough of Redbridge - Environmental Health Department	December 2014	Variable
London Borough of Islington - Environmental Health Department	January 2015	Variable
London Borough of Greenwich - Environmental Health Department	June 2014	Variable
London Borough of Hackney - Environmental Health Department	March 2015	Variable
London Borough of Barking And Dagenham - Environmental Health Department	May 2016	Variable
London Borough of Tower Hamlets - Environmental Health Department	October 2014	Variable
London Port Health Authority - Environmental Services	October 2014	Variable
London Borough of Newham - Environmental Health Department	September 2013	Variable
London Borough of Lewisham - Environmental Health Department	September 2014	Variable
London Borough of Waltham Forest - Environmental Health Department	September 2014	Variable
Local Authority Pollution Prevention and Controls		
London Borough of Southwark - Environmental Health Department	April 2014	Annual Rolling Update
City of London - Environmental Health Department	August 2014	Annual Rolling Update
London Borough of Redbridge - Environmental Health Department	December 2014	Annual Rolling Update
London Borough of Islington - Environmental Health Department	January 2015	Annual Rolling Update
London Borough of Greenwich - Environmental Health Department	June 2014	Annual Rolling Update
London Borough of Hackney - Environmental Health Department	March 2015	Annual Rolling Update
London Borough of Newham - Environmental Health Department	March 2015	Annual Rolling Update
London Borough of Barking And Dagenham - Environmental Health Department	May 2016	Annual Rolling Update
London Borough of Tower Hamlets - Environmental Health Department	October 2014	Annual Rolling Update
London Port Health Authority - Environmental Services	October 2014	Annual Rolling Update
London Borough of Lewisham - Environmental Health Department	September 2014	Annual Rolling Update
London Borough of Waltham Forest - Environmental Health Department	September 2014	Annual Rolling Update

Agency & Hydrological	Version	Update Cycle
Local Authority Pollution Prevention and Control Enforcements		
London Borough of Southwark - Environmental Health Department	April 2014	Variable
City of London - Environmental Health Department	August 2014	Variable
London Borough of Redbridge - Environmental Health Department	December 2014	Variable
London Borough of Islington - Environmental Health Department	January 2015	Variable
London Borough of Greenwich - Environmental Health Department	June 2014	Variable
London Borough of Hackney - Environmental Health Department	March 2015	Variable
London Borough of Barking And Dagenham - Environmental Health Department	May 2016	Variable
London Borough of Tower Hamlets - Environmental Health Department	October 2014	Variable
London Port Health Authority - Environmental Services	October 2014	Variable
London Borough of Newham - Environmental Health Department	September 2013	Variable
London Borough of Lewisham - Environmental Health Department	September 2014	Variable
London Borough of Waltham Forest - Environmental Health Department	September 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters		
Environment Agency - Thames Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Thames Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Thames Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - Thames Region	January 2015	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South East Region - Kent & South London Area	October 2017	Quarterly
Environment Agency - South East Region - North East Thames Area	October 2017	Quarterly
Environment Agency - Thames Region - North East Area	October 2017	Quarterly
Environment Agency - Thames Region - South East Area	October 2017	Quarterly
Water Abstractions		
Environment Agency - Thames Region	October 2017	Quarterly
Water Industry Act Referrals		
Environment Agency - Thames Region	October 2017	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones		
Environment Agency - Head Office	October 2017	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	November 2017	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	November 2017	Quarterly

Agency & Hydrological	Version	Update Cycle
Areas Benefiting from Flood Defences Environment Agency - Head Office	November 2017	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	November 2017	Quarterly
Flood Defences Environment Agency - Head Office	November 2017	Quarterly
OS Water Network Lines Ordnance Survey	January 2018	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	October 2017	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - Kent & South London Area	October 2017	Quarterly
Environment Agency - South East Region - North East Thames Area	October 2017	Quarterly
Environment Agency - Thames Region - North East Area	October 2017	Quarterly
Environment Agency - Thames Region - South East Area	October 2017	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Kent & South London Area	October 2017	Quarterly
Environment Agency - South East Region - North East Thames Area	October 2017	Quarterly
Environment Agency - Thames Region - North East Area	October 2017	Quarterly
Environment Agency - Thames Region - South East Area	October 2017	Quarterly
Local Authority Landfill Coverage		
City of London - Environmental Health Department	May 2000	Not Applicable
London Borough of Barking And Dagenham - Environmental Health Department	May 2000	Not Applicable
London Borough of Greenwich - Environmental Health Department	May 2000	Not Applicable
London Borough of Hackney	May 2000	Not Applicable
London Borough of Islington - Environmental Health Department	May 2000	Not Applicable
London Borough of Lewisham - Environmental Health Department	May 2000	Not Applicable
London Borough of Newham	May 2000	Not Applicable
London Borough of Redbridge - Environmental Health Department	May 2000	Not Applicable
London Borough of Southwark - Environmental Health Department	May 2000	Not Applicable
London Borough of Tower Hamlets - Environmental Health Department	May 2000	Not Applicable
London Borough of Waltham Forest - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
London Borough of Tower Hamlets - Environmental Health Department	April 2003	Not Applicable
City of London - Environmental Health Department	May 2000	Not Applicable
London Borough of Barking And Dagenham - Environmental Health Department	May 2000	Not Applicable
London Borough of Greenwich - Environmental Health Department	May 2000	Not Applicable
London Borough of Hackney	May 2000	Not Applicable
London Borough of Islington - Environmental Health Department	May 2000	Not Applicable
London Borough of Lewisham - Environmental Health Department	May 2000	Not Applicable
London Borough of Newham	May 2000	Not Applicable
London Borough of Redbridge - Environmental Health Department	May 2000	Not Applicable
London Borough of Southwark - Environmental Health Department	May 2000	Not Applicable
London Borough of Waltham Forest - Environmental Health Department	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - Thames Region - North East Area	March 2003	Not Applicable
Environment Agency - Thames Region - South East Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Thames Region - North East Area	March 2003	Not Applicable
Environment Agency - Thames Region - South East Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Thames Region - North East Area	June 2015	Not Applicable
Environment Agency - Thames Region - South East Area	March 2003	Not Applicable

Data Currency

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
London Borough of Lewisham - Planning Services	April 2015	Variable
City of London	February 2016	Variable
London Borough of Barking And Dagenham	February 2016	Variable
London Borough of Greenwich - Planning Department	February 2016	Variable
London Borough of Hackney	February 2016	Variable
London Borough of Newham	February 2016	Variable
London Borough of Redbridge	February 2016	Variable
London Borough of Southwark - Regeneration Department	February 2016	Variable
London Borough of Tower Hamlets	February 2016	Variable
London Borough of Waltham Forest - Environmental Services	February 2016	Variable
London Port Health Authority - Environmental Services	January 2008	Annual Rolling Update
London Borough of Islington	October 2015	Variable
Planning Hazardous Substance Consents		
London Borough of Lewisham - Planning Services	April 2015	Variable
City of London	February 2016	Variable
London Borough of Barking And Dagenham	February 2016	Variable
London Borough of Greenwich - Planning Department	February 2016	Variable
London Borough of Hackney	February 2016	Variable
London Borough of Newham	February 2016	Variable
London Borough of Redbridge	February 2016	Variable
London Borough of Southwark - Regeneration Department	February 2016	Variable
London Borough of Tower Hamlets	February 2016	Variable
London Borough of Waltham Forest - Environmental Services	February 2016	Variable
London Port Health Authority - Environmental Services	January 2008	Annual Rolling Update
London Borough of Islington	October 2015	Variable

Data Currency

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2017	Bi-Annually
BGS Urban Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	October 2015	As notified
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	November 2017	Quarterly
Fuel Station Entries Catalist Ltd - Experian	February 2018	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	December 2017	Quarterly
Points of Interest - Education and Health PointX	December 2017	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2017	Quarterly
Points of Interest - Public Infrastructure PointX	December 2017	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2017	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually

Data Currency

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	October 2017	Bi-Annually
Areas of Adopted Green Belt		
London Borough of Barking And Dagenham	November 2017	As notified
London Borough of Greenwich	November 2017	As notified
London Borough of Newham	November 2017	As notified
London Borough of Redbridge	November 2017	As notified
London Borough of Waltham Forest	November 2017	As notified
Areas of Unadopted Green Belt		
London Borough of Barking And Dagenham	November 2017	As notified
London Borough of Greenwich	November 2017	As notified
London Borough of Newham	November 2017	As notified
London Borough of Redbridge	November 2017	As notified
London Borough of Waltham Forest	November 2017	As notified
Areas of Outstanding Natural Beauty		
Natural England	February 2018	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	February 2018	Bi-Annually
Marine Nature Reserves		
Natural England	January 2018	Bi-Annually
National Nature Reserves		
Natural England	February 2018	Bi-Annually
National Parks		
Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones		
Environment Agency - Head Office	December 2017	Bi-Annually
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	
Ramsar Sites		
Natural England	February 2018	Bi-Annually
Sites of Special Scientific Interest		
Natural England	August 2017	Bi-Annually
Special Areas of Conservation		
Natural England	January 2018	Bi-Annually
Special Protection Areas		
Natural England	February 2018	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	OS Map data
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	The Coal Authority
British Geological Survey	BGS 1835 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	CEH Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	Cyfoeth Naturiol Cymru Natural Resources Wales
Scottish Natural Heritage	SCOTTISH NATURAL HERITAGE
Natural England	NATURAL ENGLAND
Public Health England	Public Health England
Ove Arup	ARUP
Peter Brett Associates	pba peterbrett

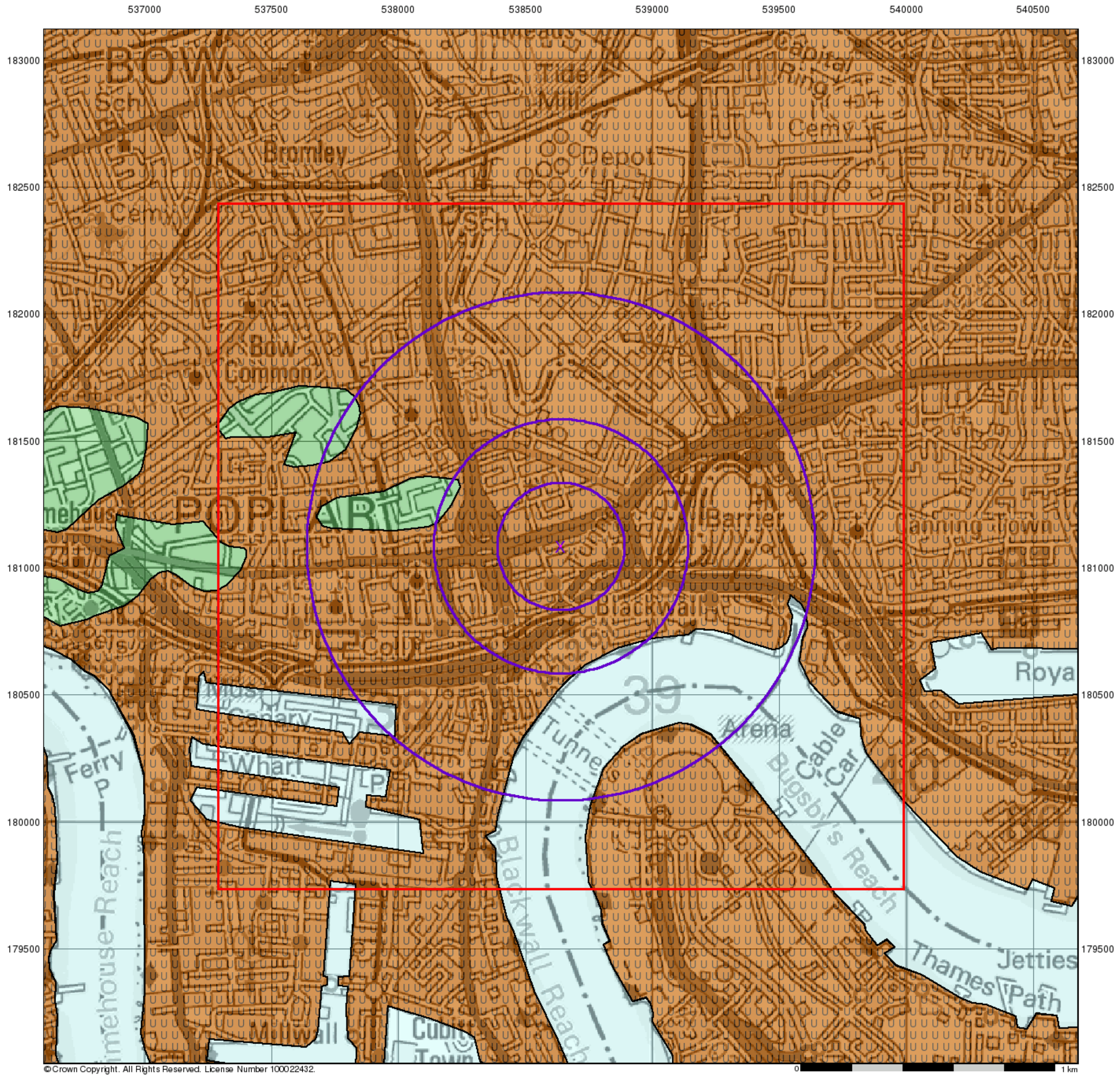
Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**London Borough of Tower Hamlets - Environmental Health Department** Council Offices, Southern Grove, London, E3 4PN	Telephone: 020 7364 5000 Fax: 0171 512 4919 Website: www.towerhamlets.gov.uk
4	**London Borough of Newham - Environmental Health Department** Alice Billings House, 2-12 West Ham Lane, London, E15 4SF	Telephone: 020 8430 2000 Fax: 020 8557 8869 Website: www.newham.gov.uk
5	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	**London Borough of Newham** Town Hall Annexe, Barking Road, East Ham, London, E6 2RP	Telephone: 020 8430 2000 Fax: 020 8472 2284 Website: www.newham.gov.uk
7	**London Borough of Greenwich - Environmental Health Department** 12th Floor, Riverside House, Woolwich, London, SE18 6DN	Telephone: 020 8854 8888 Fax: 020 8921 8322 Website: www.greenwich.gov.uk
8	**Health and Safety Executive** 5S.2 Redgrave Court, Merton Road, Bootle, L20 7HS	Website: www.hse.gov.uk
9	**London Borough of Tower Hamlets** Mulberry Place, 5 Clove Crescent, London, E14 2BG	Telephone: 020 7364 5000 Fax: 0207 364 5421 Website: www.towerhamlets.gov.uk
10	**Peter Brett Associates** Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
11	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
12	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9966 Fax: 0844 844 9951 Email: helpdesk@landmark.co.uk Website: www.landmark.co.uk
13	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
14	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org

Useful Contacts

Contact	Name and Address	Contact Details
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.



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Groundwater Vulnerability

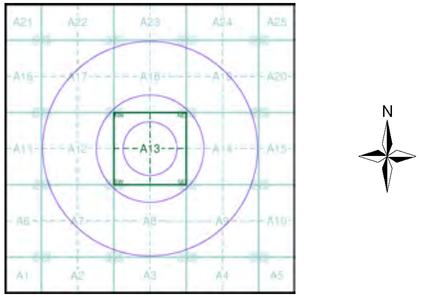
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- 🟥 Slice
- 8 Map ID

Agency and Hydrological

Geological Classes		Soil Classes
Major Aquifer (Highly Permeable)	■	High (H) 1, 2, 3, U
	■	Intermediate (I) 1, 2
	■	Low
Minor Aquifer (Variably Permeable)	■	High (H) 1, 2, 3, U
	■	Intermediate (I) 1, 2
	■	Low
Non Aquifer (Negligibly Permeable)	🟩	
Water or Sea	■	
Drift Deposit	⁞	

Site Sensitivity Context Map - Slice A



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Order Details

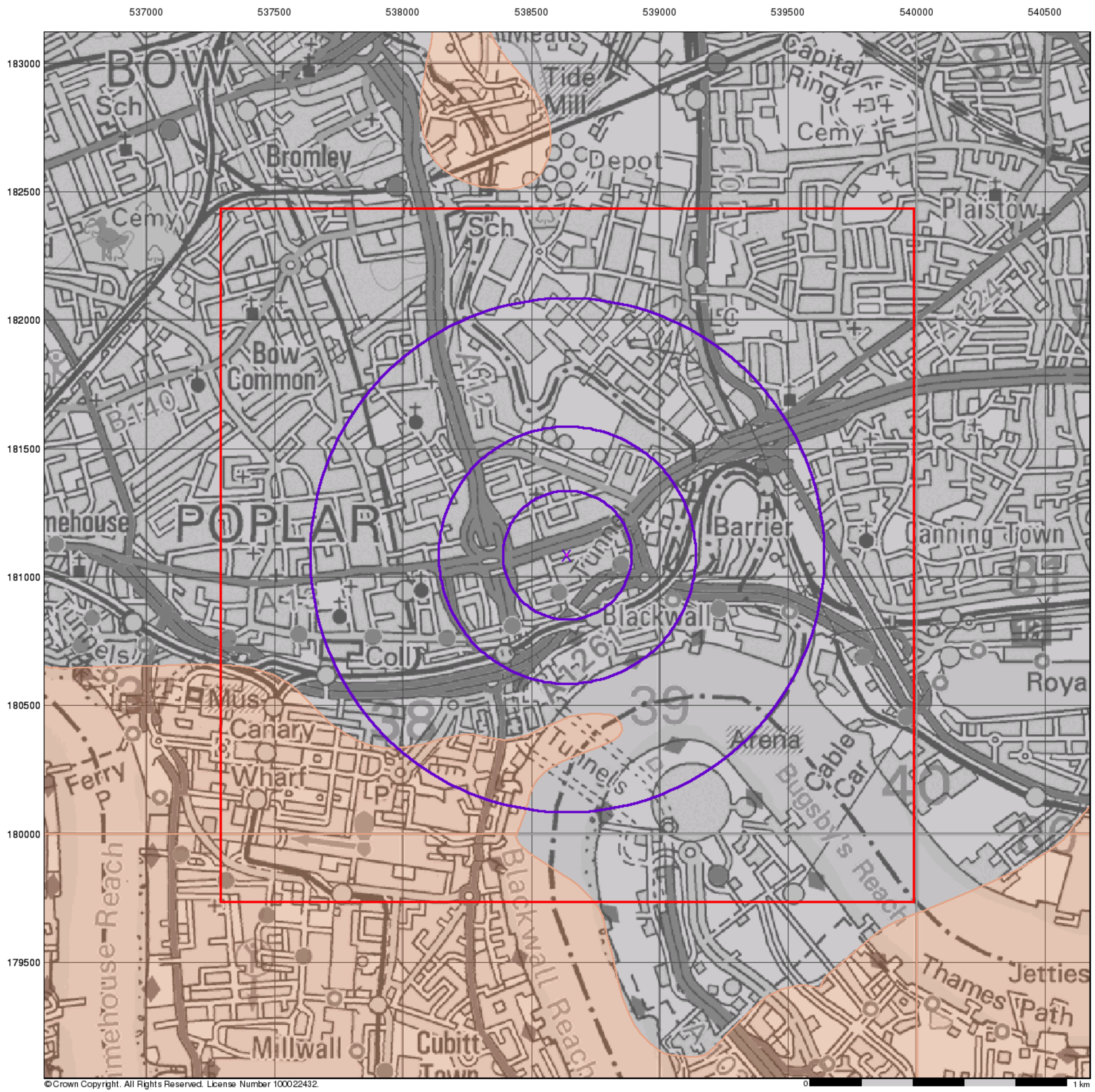
Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk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Bedrock Aquifer Designation

General

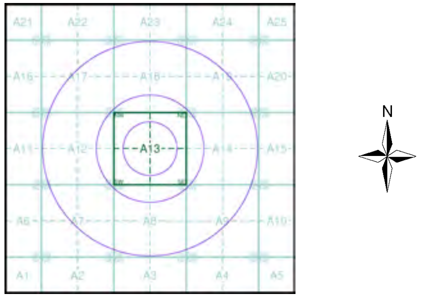
- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- ☐ Slice
- 8 Map ID

Agency and Hydrological

Geological Classes

- 🟪 Principal Aquifer
- 🟧 Secondary A Aquifer
- 🟧 Secondary B Aquifer
- 🟨 Secondary Undifferentiated
- ⬜ Unproductive Strata
- 🟩 Unknown
- 🟦 Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A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Order Details

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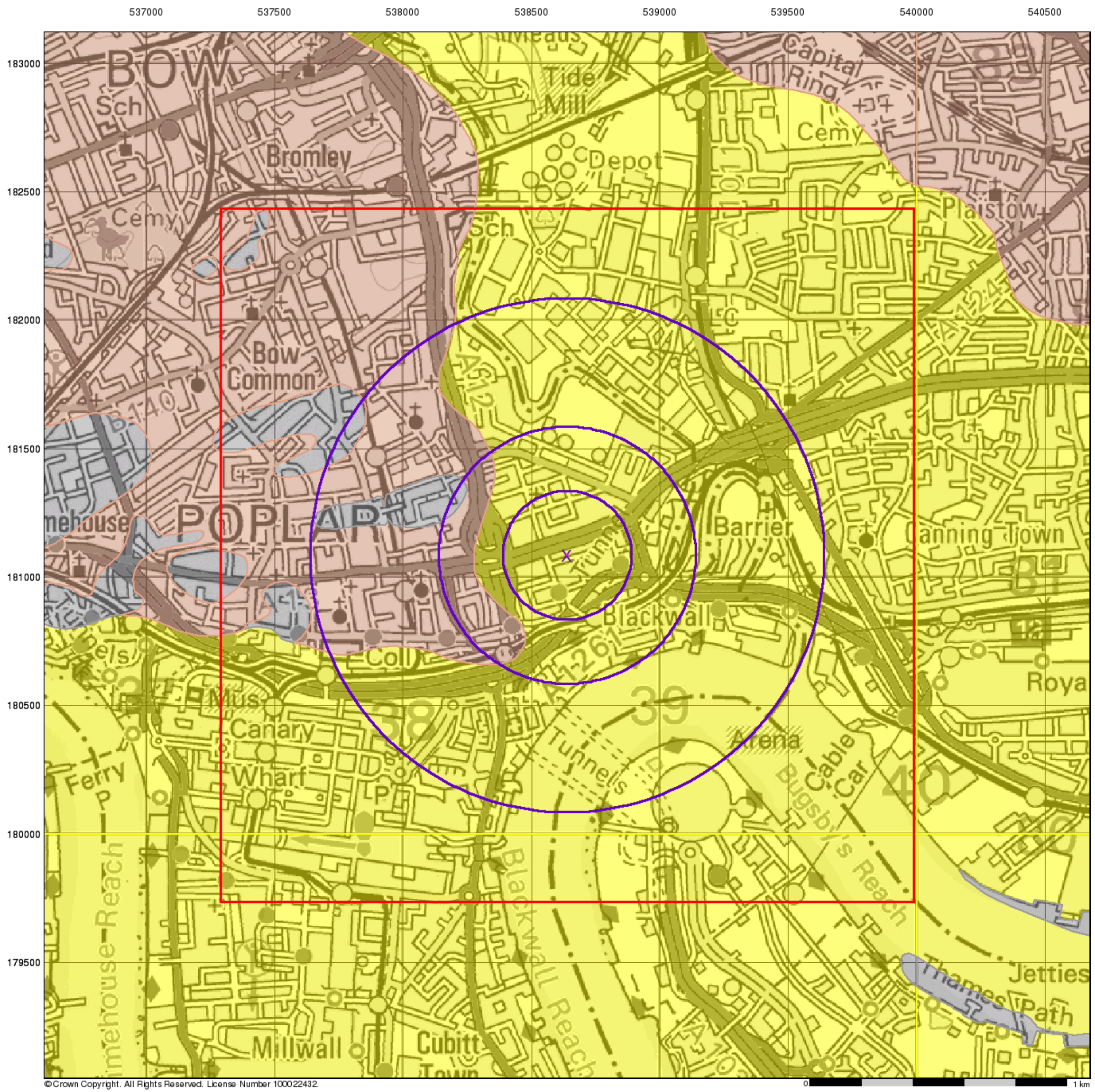
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Superficial Aquifer Designation

General

Specified Site

Specified Buffer(s)

X Bearing Reference Point

☐ Slice

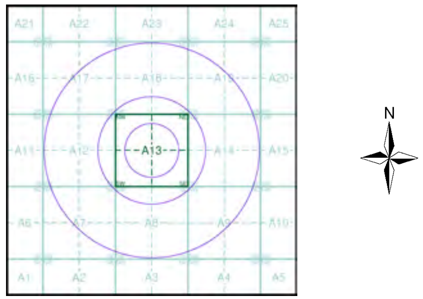
8 Map ID

Agency and Hydrological

Geological Classes

🟪	Principal Aquifer
🟫	Secondary A Aquifer
🟧	Secondary B Aquifer
🟨	Secondary Undifferentiated
⬜	Unproductive Strata
🟩	Unknown
🟦	Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A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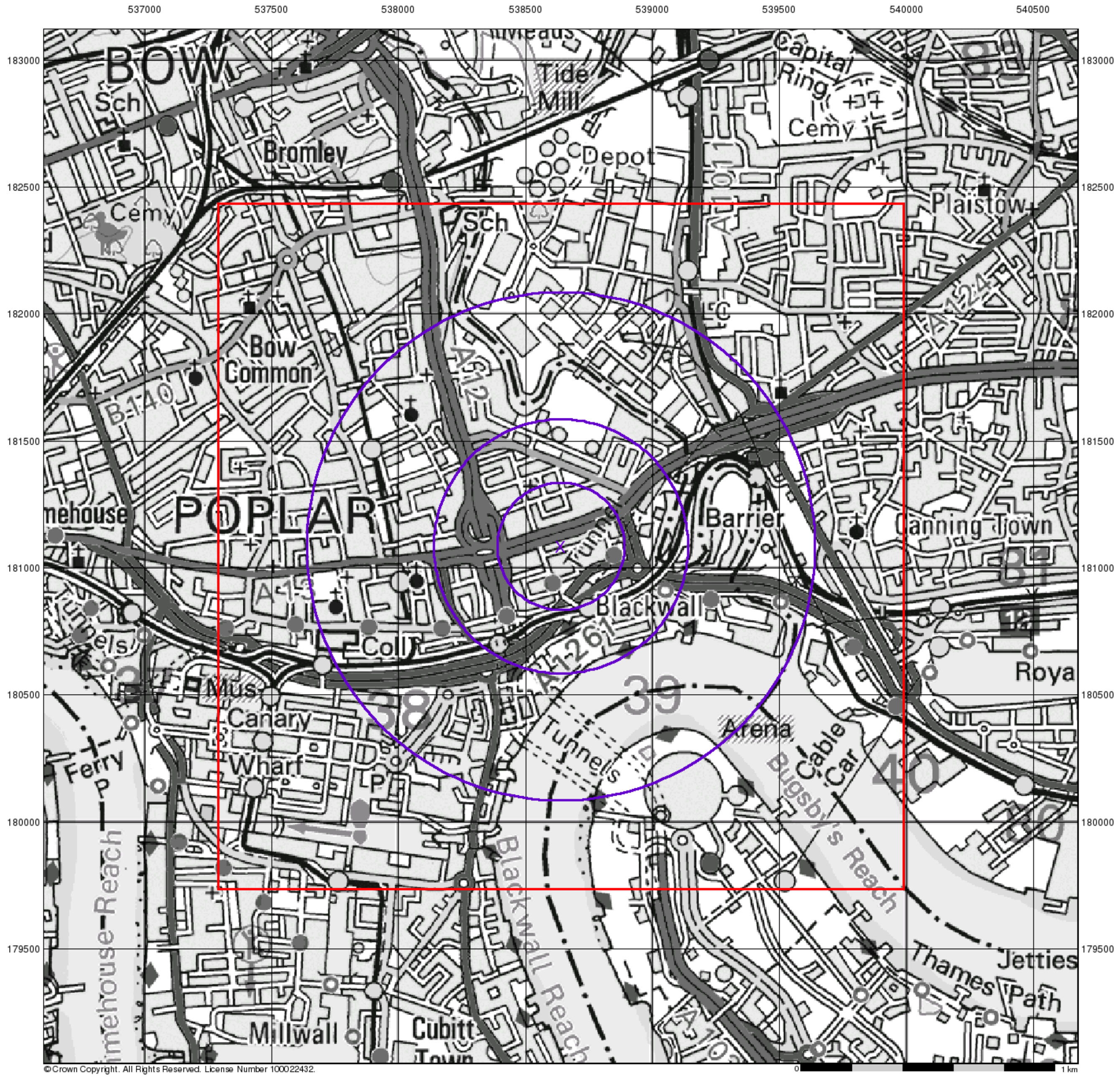

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Source Protection Zones

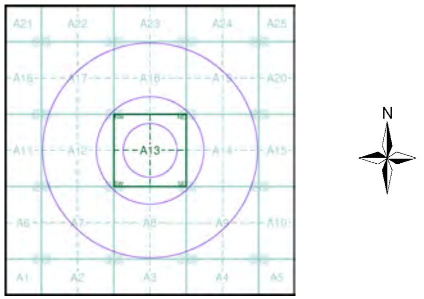
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- ☐ Slice
- 8 Map ID

Agency and Hydrological

- 🟥 Inner zone (Zone 1)
- ▨ Inner zone - subsurface activity only (Zone 1c)
- 🟩 Outer zone (Zone 2)
- ▨ Outer zone - subsurface activity only (Zone 2c)
- 🟦 Total catchment (Zone 3)
- ▨ Total catchment - subsurface activity only (Zone 3c)
- 🟫 Special interest (Zone 4)
- 🟥 Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



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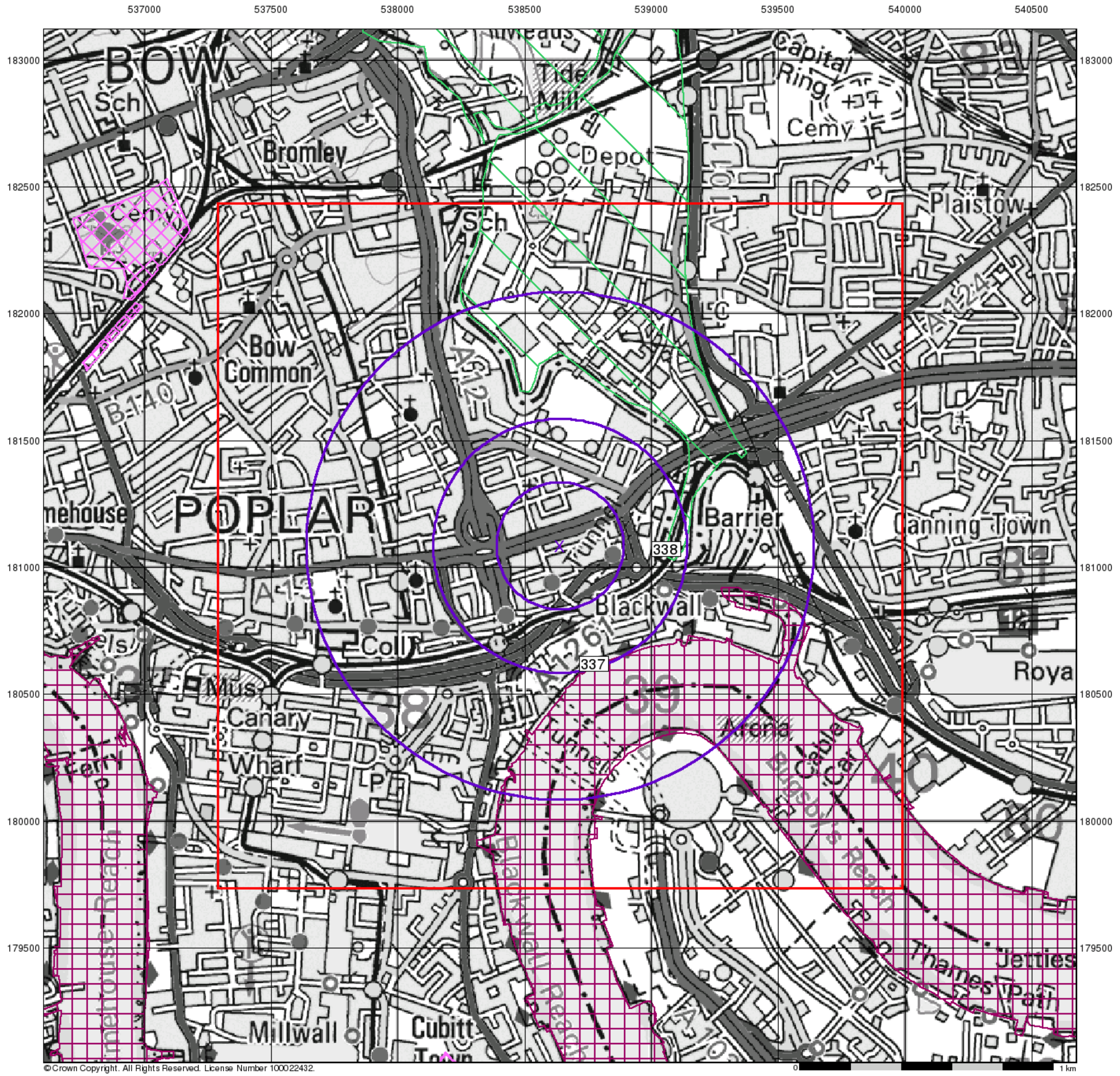
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Sensitive Land Uses

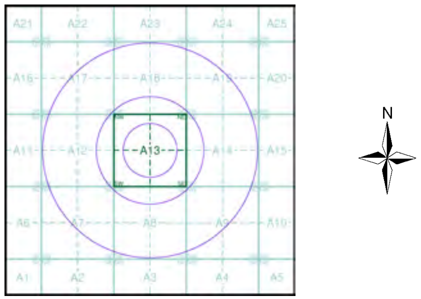
General

⬡ Specified Site
⬡ Specified Buffer(s)
X Bearing Reference Point
☐ Slice
8 Map ID

Sensitive Land Uses

■ Ancient Woodland
▥ Area of Adopted Green Belt
▨ Area of Unadopted Green Belt
■ Area of Outstanding Natural Beauty
▨ Environmentally Sensitive Area
⊞ Forest Park
☒ Local Nature Reserve
⊞ Marine Nature Reserve
▨ National Nature Reserve
▨ National Park
▥ Nitrate Sensitive Area
▨ Nitrate Vulnerable Zone
▨ Ramsar Site
▤ Site of Special Scientific Interest
▨ Special Area of Conservation
▨ Special Protection Area
■ World Heritage Sites

Site Sensitivity Context Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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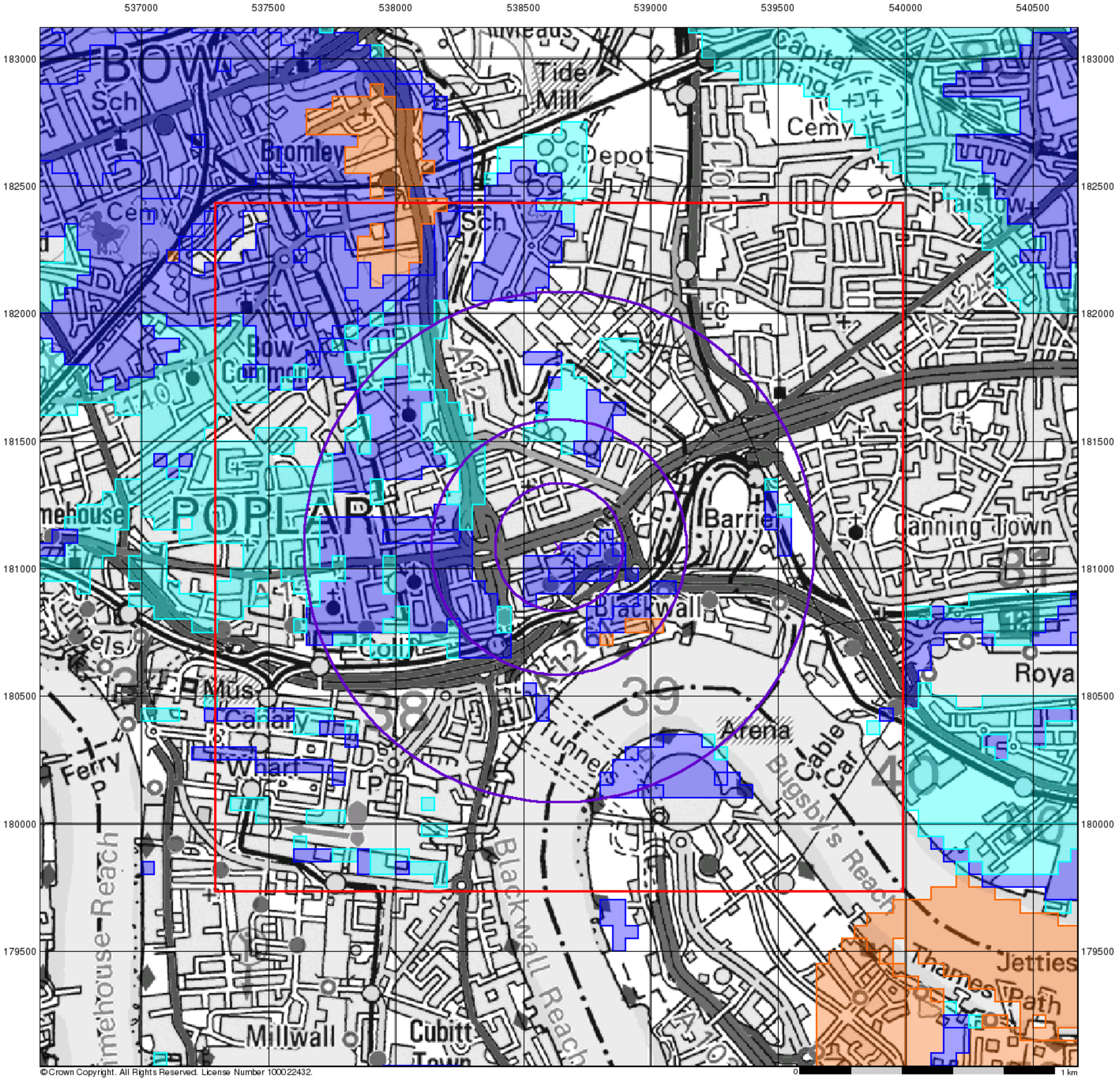
Web: www.envirocheck.co.uk



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BGS Flood GFS Data

General

Specified Site

Specified Buffer(s)

X Bearing Reference Point

□ Slice

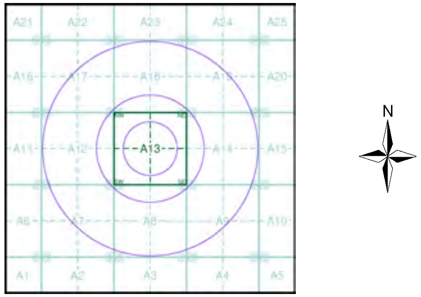
Agency and Hydrological (Flood)

🟧 Limited Potential for Groundwater Flooding to Occur

🟦 Potential for Groundwater Flooding of Property Situated Below Ground Level

🟦 Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



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Order Details

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Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

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Fax:	0844 844 9951
Web:	www.envirocheck.co.uk

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
🟥	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
▨	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
🟥	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
🟨	ALV	Alluvium	Clay	Flandrian - Pleistocene
🟨	ALV	Alluvium	Silt	Flandrian - Pleistocene
🟧	KPGR	Kempton Park Gravel Formation	Sand and Gravel	Devensian - Ipswichian
🟨	LASI	Langley Silt Member	Silt	Devensian - Ipswichian
🟧	TPGR	Taplow Gravel Formation	Sand and Gravel	Wolstonian - Chokierian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
⬜	LC	London Clay Formation	Clay	Eocene - Eocene
🟫	LMBE	Lambeth Group	Clay	Paleocene - Paleocene

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Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

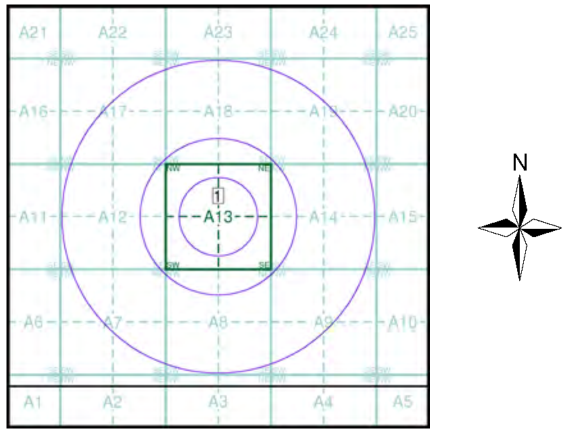
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:		**Map ID:**	1
Map Name:	TQ37NE	**Map Name:**	TQ38SE
Map Date:	1995	**Map Date:**	1999
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Available	**Faults:**	Not Available
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Not Available	**Rock Segments:**	Not Available

Geology 1:10,000 Maps - Slice A

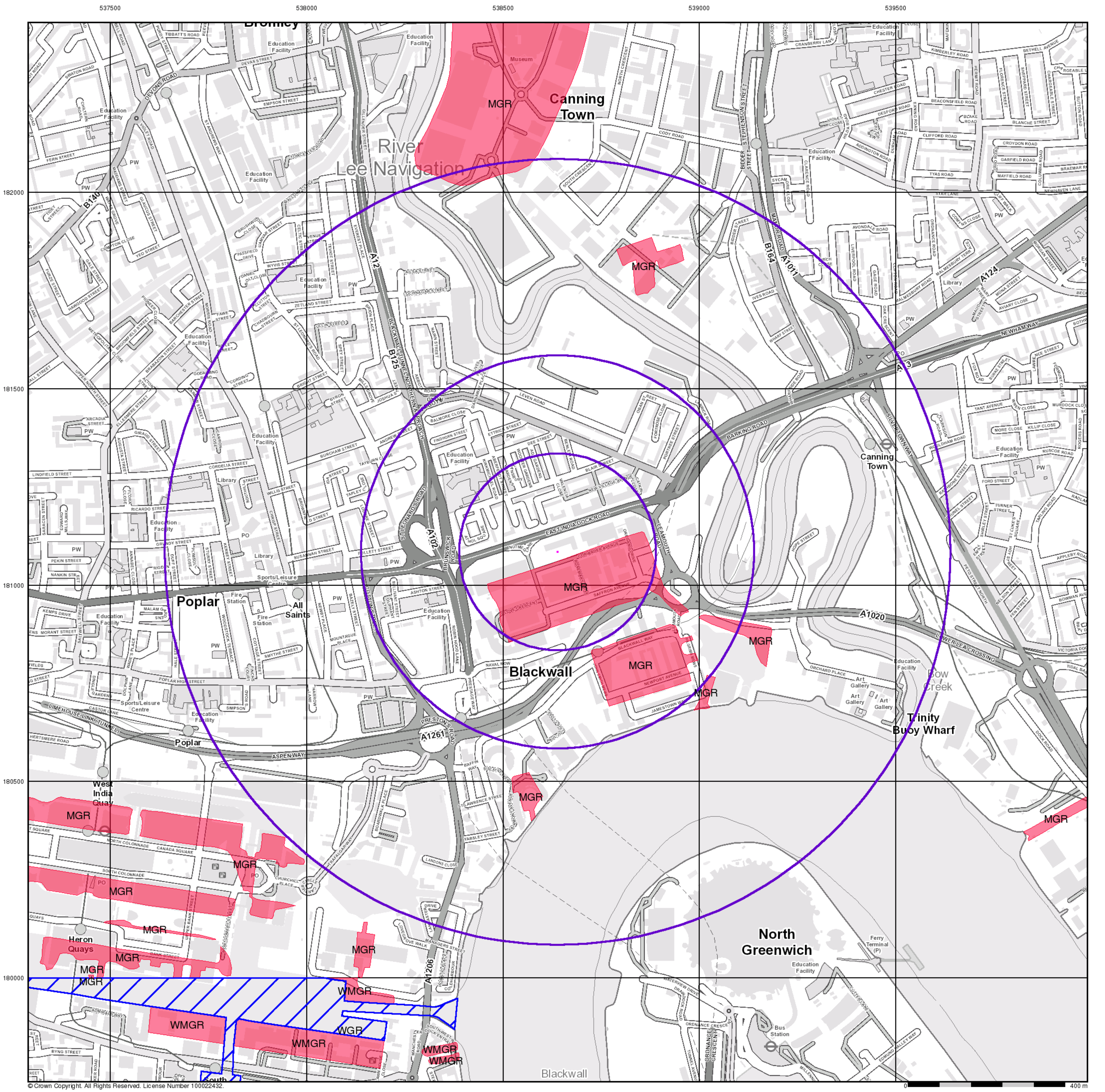


Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London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Artificial Ground and Landslip

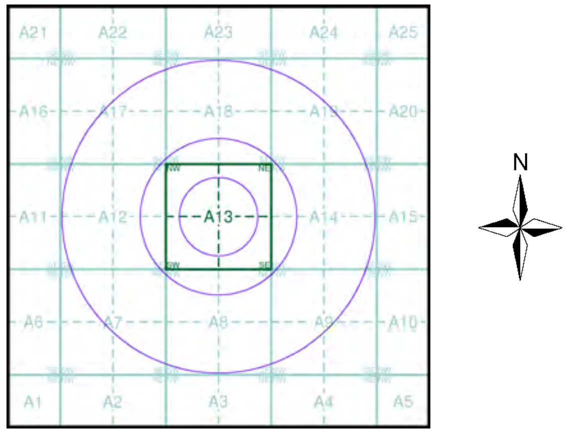
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A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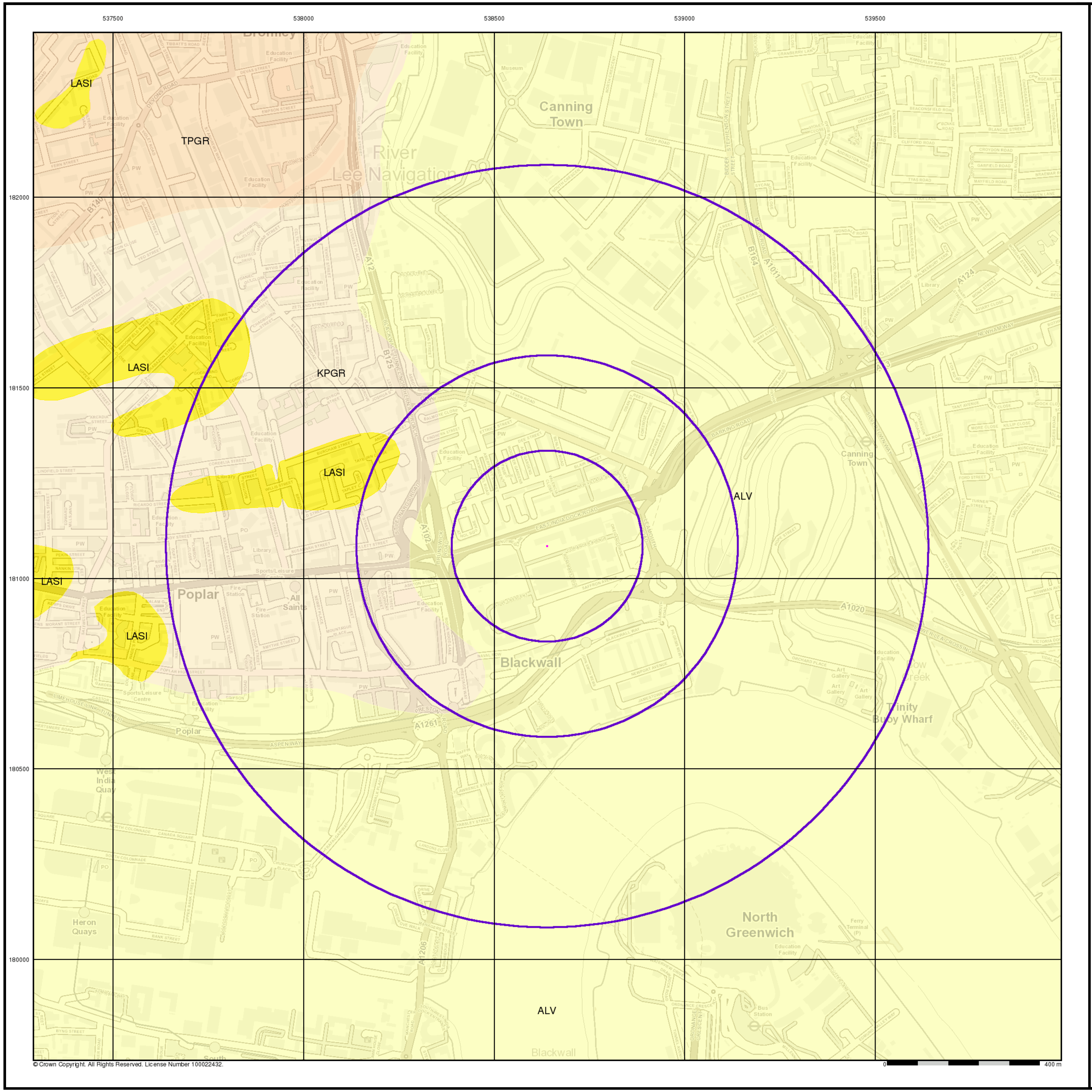
Site Details

Coriander Avenue, London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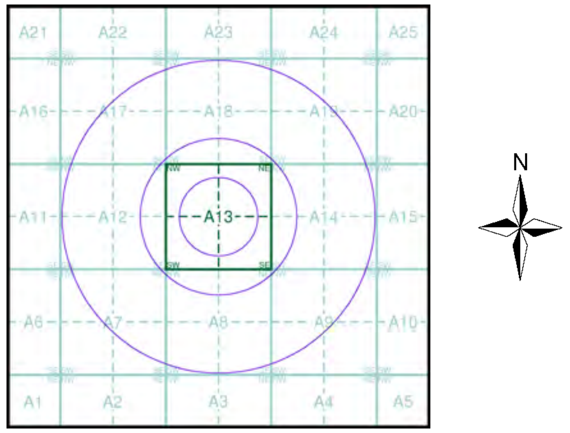
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A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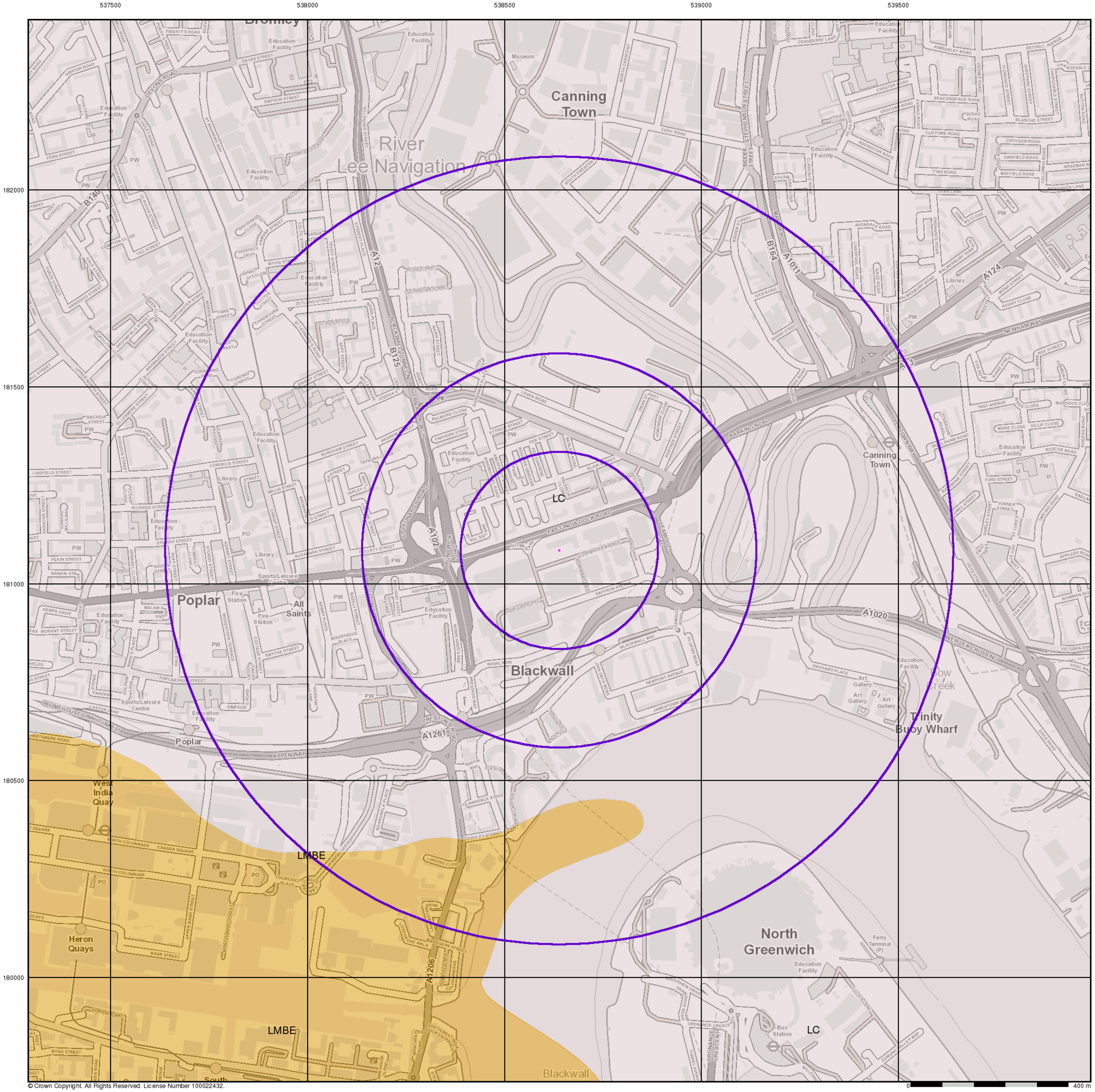
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Bedrock and Faults

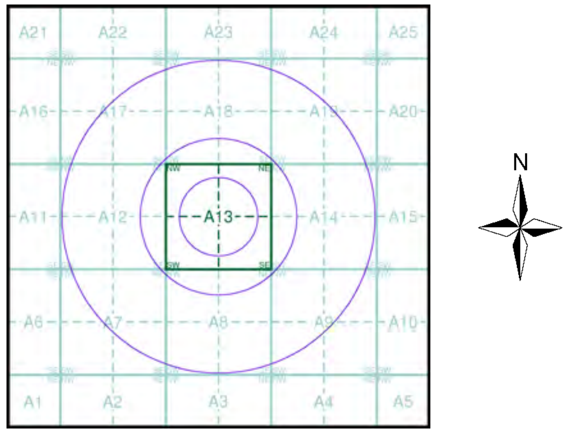
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A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Order Details

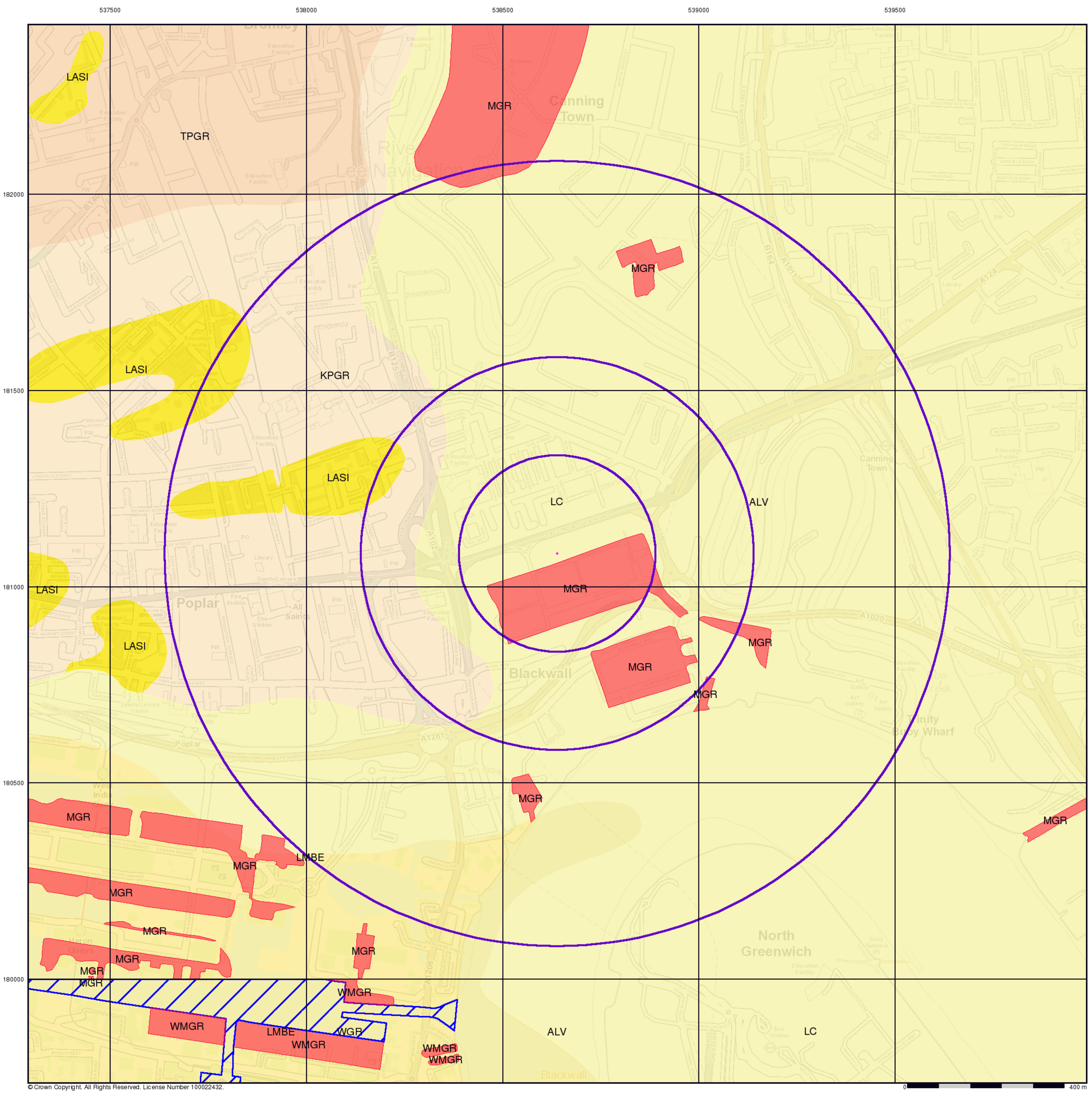
Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
INFORMATION GROUP

Tel:	0844 844 9952
Fax:	0844 844 9951
Web:	www.envirocheck.co.uk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North Greenwich
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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

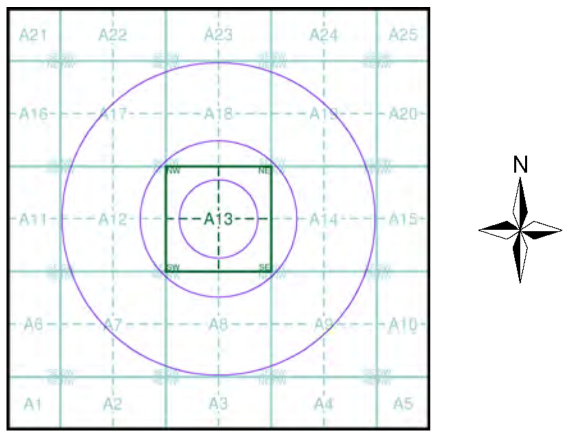
Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A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Order Details

Order Number:	157608383_1_1
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Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
▤	WMGR	Infilled Ground	Artificial Deposit	Cenozoic - Cenozoic
▤	LSGR	Landscaped Ground (Undivided)	Artificially Modified Ground	Holocene - Holocene
▨	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
▧	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
🟨	ALV	Alluvium	Clay, Silty, Peaty, Sandy [Unlithified Deposits Coding Scheme]	Flandrian - Flandrian
🟨	TRD	Tidal River Or Creek Deposits	Clay and Silt	Flandrian - Flandrian
🟧	KPGR	Kempton Park Gravel Formation	Sand and Gravel	Devensian - Devensian
🟨	LASI	Langley Silt Member	Clay and Silt	Devensian - Devensian
🟧	TPGR	Taplow Gravel Formation	Sand and Gravel	Wolstonian - Wolstonian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
⬜	LC	London Clay Formation	Clay, Silt and Sand	Eocene - Eocene
⬜	LC	London Clay Formation	Clay and Silt	Eocene - Eocene
🟦	TAB	Thanet Formation	Sand	Thanetian - Thanetian
🟧	LMBE	Lambeth Group	Clay, Silt and Sand	Paleocene - Paleocene
🟧	LMBE	Lambeth Group	Sand, Silt and Clay	Paleocene - Paleocene

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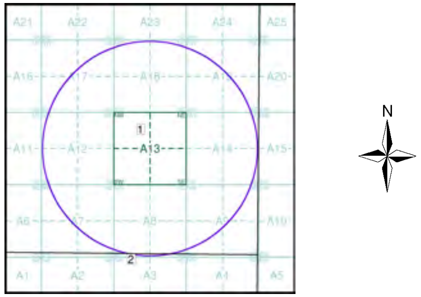
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**1**	**Map ID:**	**2**
Map Sheet No:	**256**	**Map Sheet No:**	**270**
Map Name:	**North London**	**Map Name:**	**South London**
Map Date:	**2006**	**Map Date:**	**1998**
Bedrock Geology:	**Available**	**Bedrock Geology:**	**Available**
Superficial Geology:	**Available**	**Superficial Geology:**	**Available**
Artificial Geology:	**Available**	**Artificial Geology:**	**Available**
Faults:	**Not Supplied**	**Faults:**	**Not Supplied**
Landslip:	**Available**	**Landslip:**	**Available**
Rock Segments:	**Not Supplied**	**Rock Segments:**	**Not Supplied**

Geology 1:50,000 Maps - Slice A



Order Details:

Order Number:	157608383_1_1
Customer Reference:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details:

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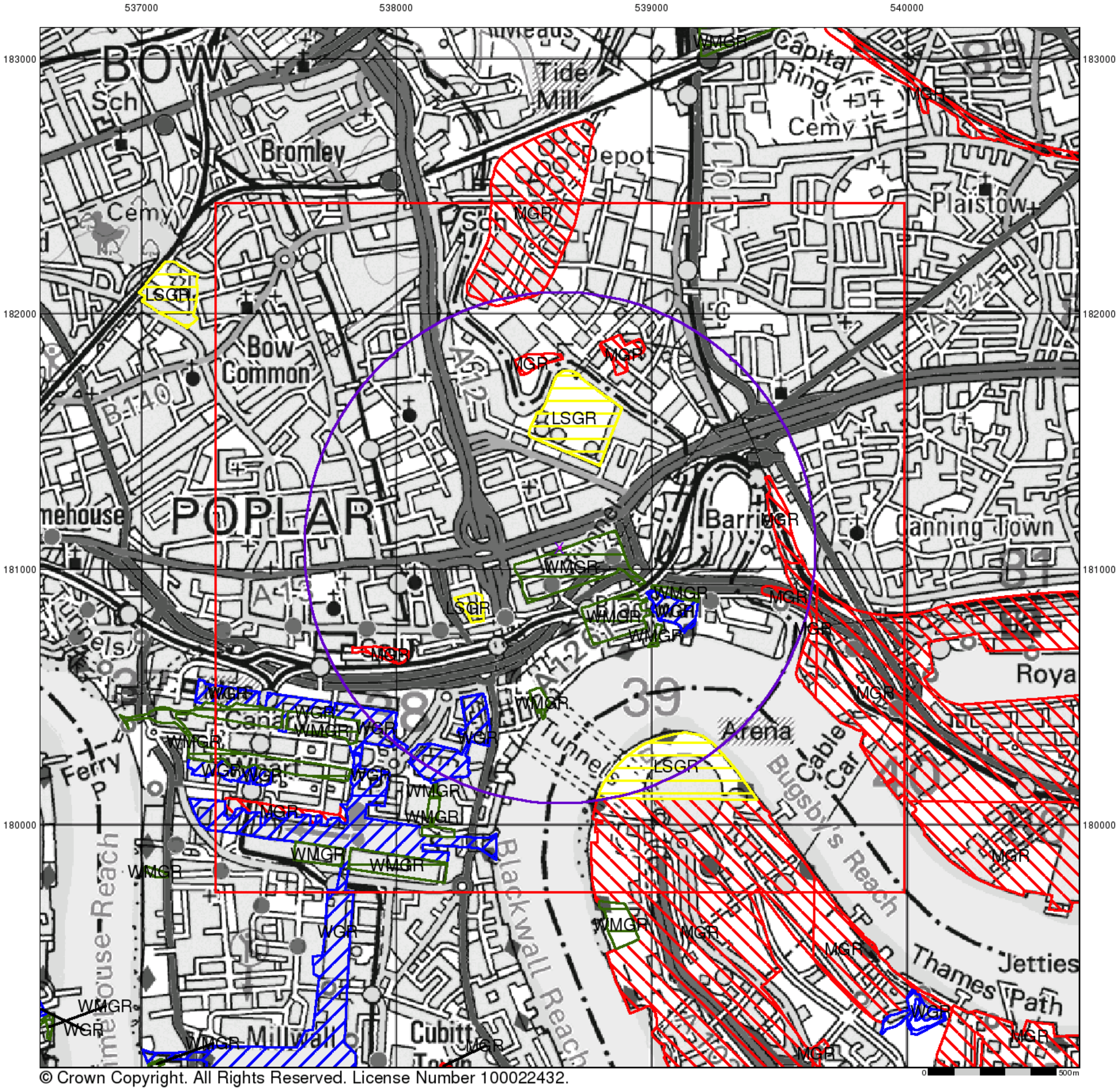
Artificial Ground and Landslip

Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.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POPLAR
Barrier
Canning Town
Royal
Arena
Cable Car
Bugsby's Reach
Thames Path
Jetties
Blackwall Reach
Millwall
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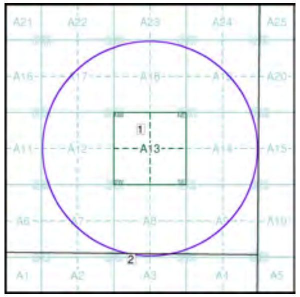
Artificial Ground and Landslip Map - Slice A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Order Details:

Order Number:	157608383_1_1
Customer Reference:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

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Coriander Avenue, London

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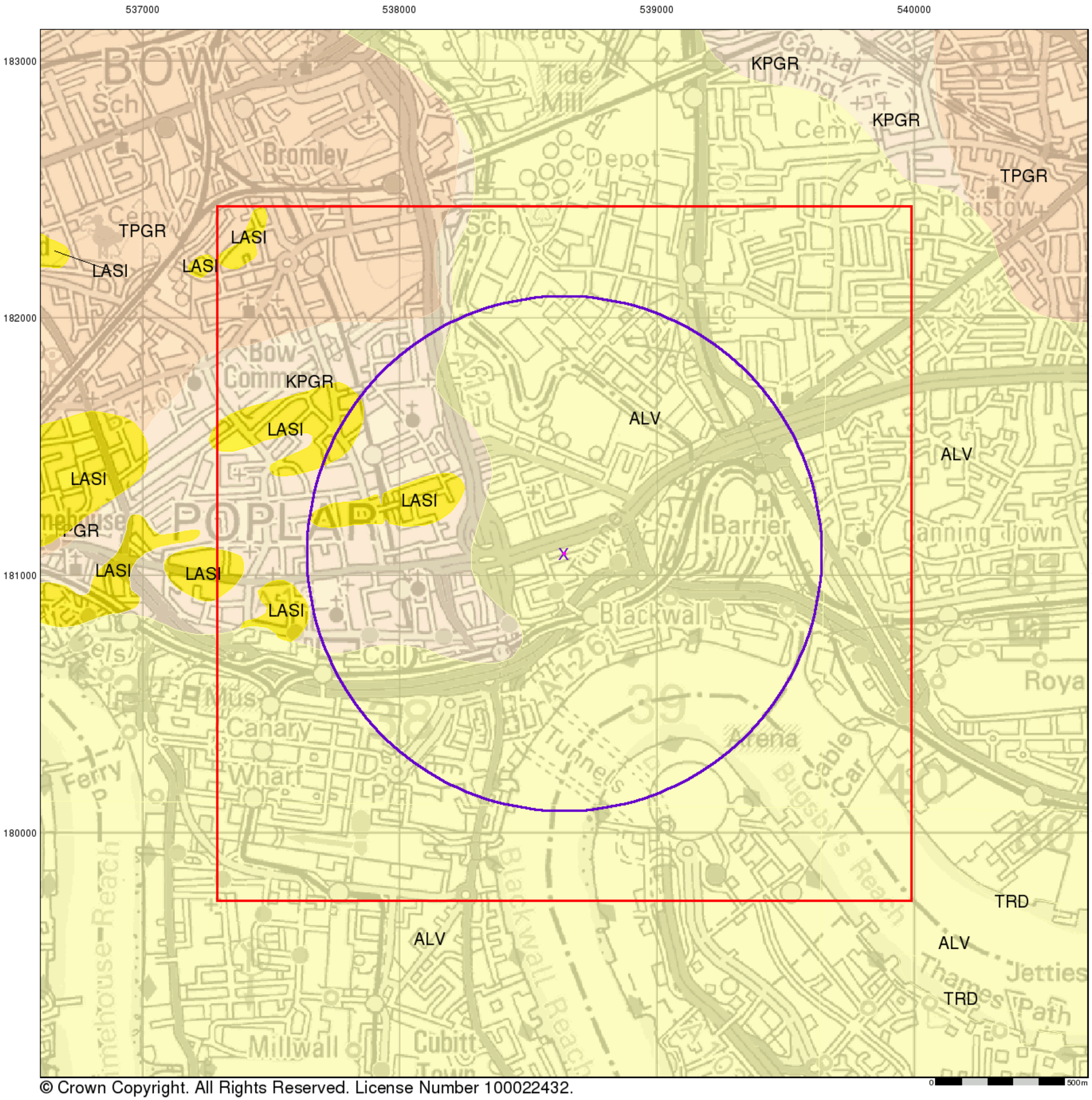
Fax:	0844 844 9951
Web:	www.envirocheck.co.uk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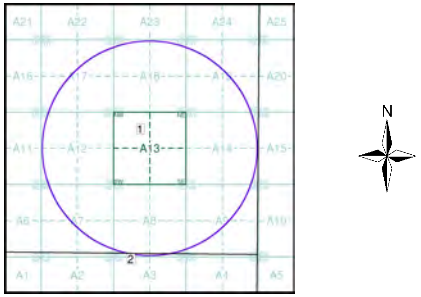
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A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Order Details:

Order Number:	157608383_1_1
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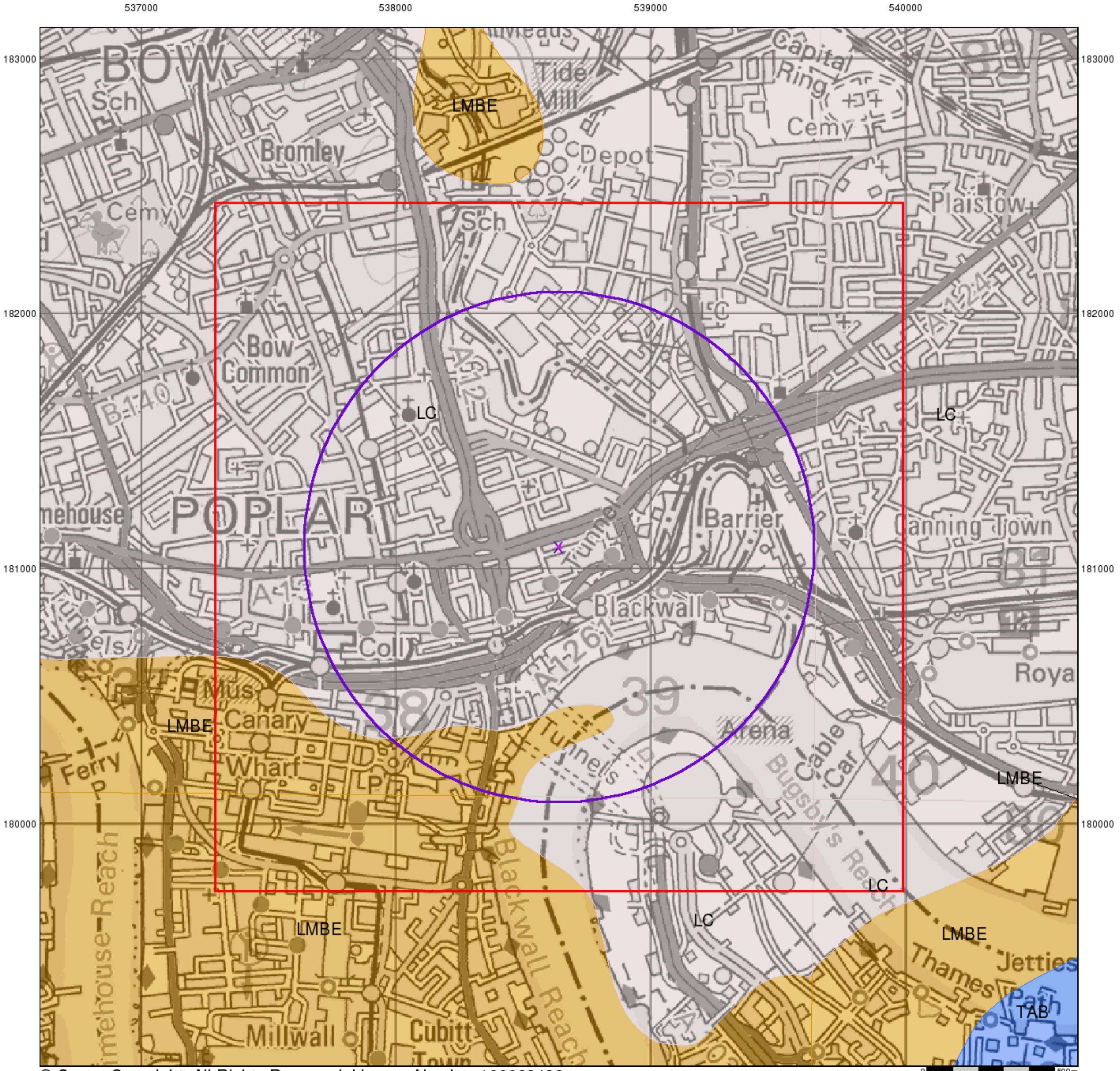
Site Details:

Coriander Avenue, London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Blackwall
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Ferry
Limehouse Reach
Millwall
Cubitt Town
Blackwall Reach
Tunnels
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Bugsby's Reach
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Jetties
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Bedrock and Faults

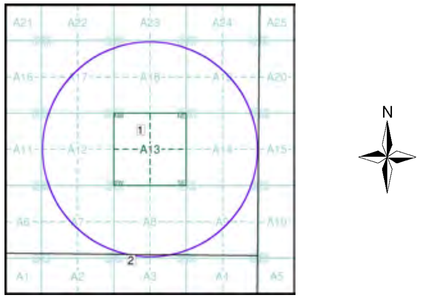
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A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Order Details:

Order Number:	157608383_1_1
Customer Reference:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details:

Coriander Avenue, London

Landmark
INFORMATION GROUP

Tel:	0844 844 9952
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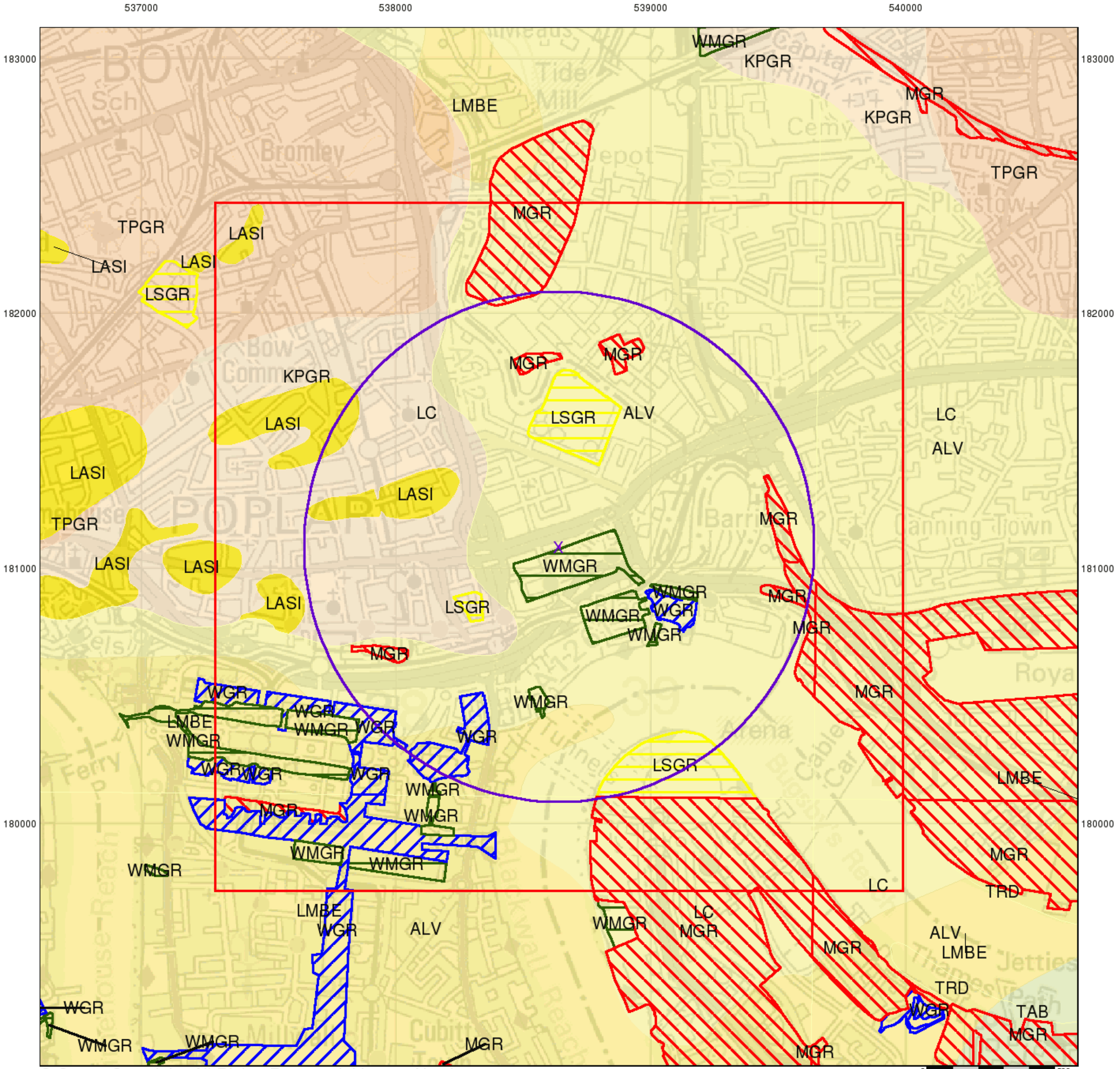
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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

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Additional Information

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Contact

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Kingsley Dunham Centre
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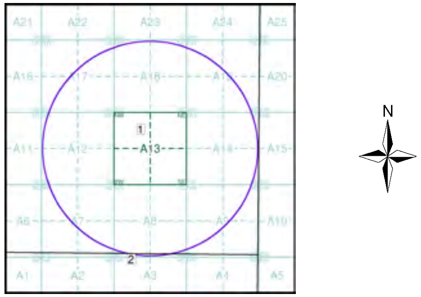
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A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Order Details:

Order Number:	157608383_1_1
Customer Reference:	1016734
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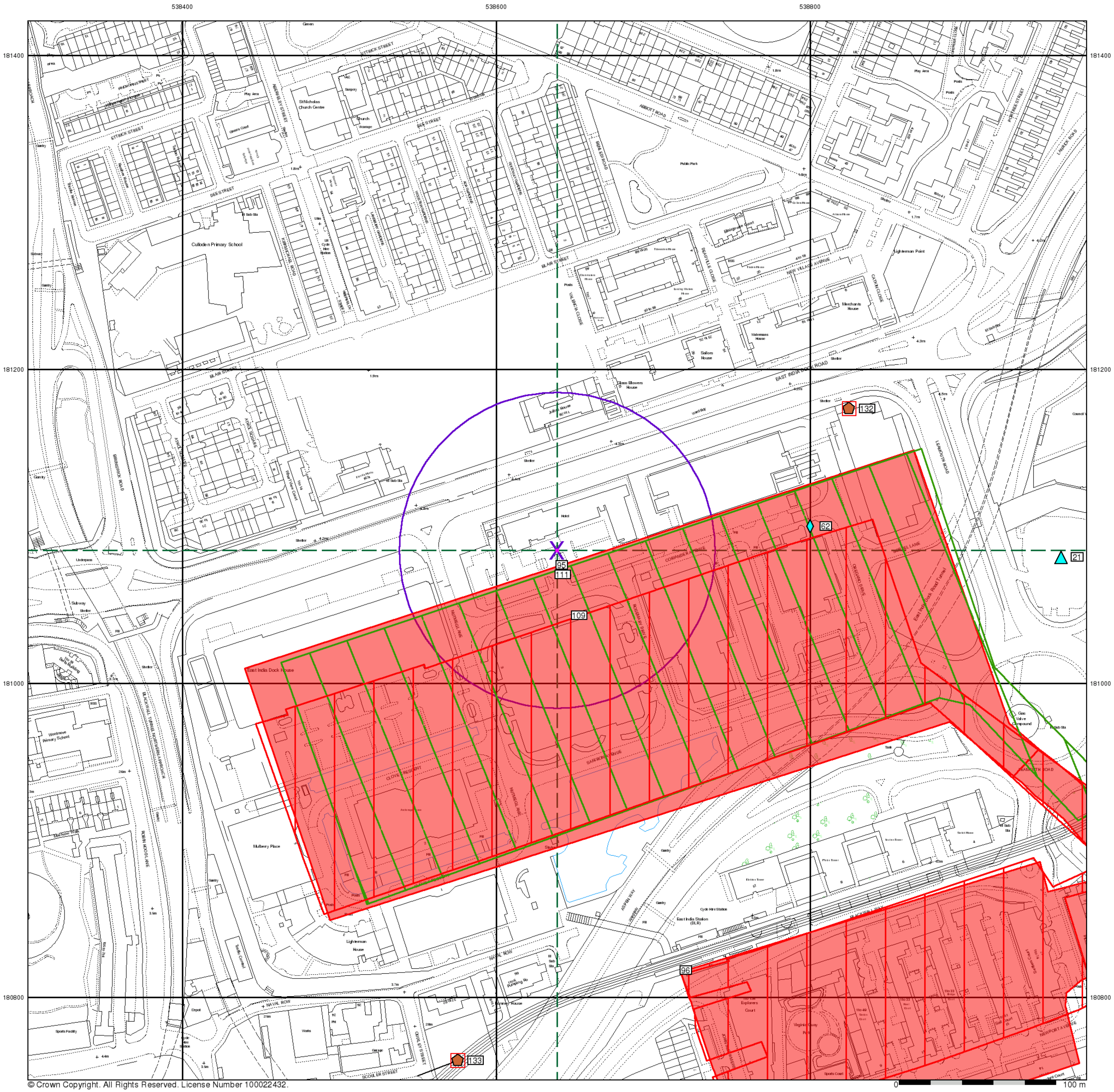
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details:

Coriander Avenue, London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Culloden Primary School
East India Dock House
EAST INDIA DOCK ROAD
BLAIR STREET
ETTRICK STREET
ABBOTT ROAD
Public Park
Lighterman Point
Mulberry Place
Lighterman House
East India Station (DLR)
NAVAL ROW
Woolmore Primary School
Explorers Court
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General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- 8 Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

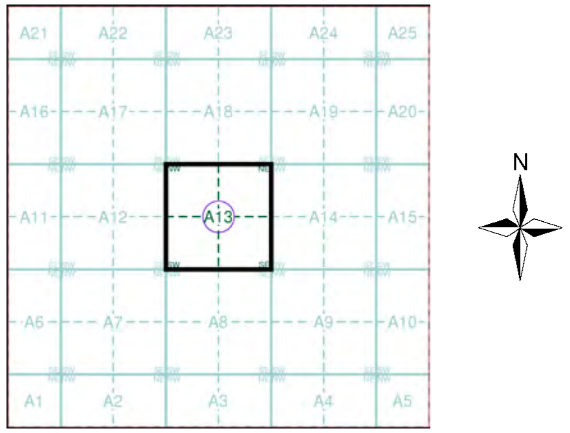
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A13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Order Details

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Slice:	A
Site Area (Ha):	0.01
Plot Buffer (m):	100

Site Details

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Landmark
INFORMATION GROUP

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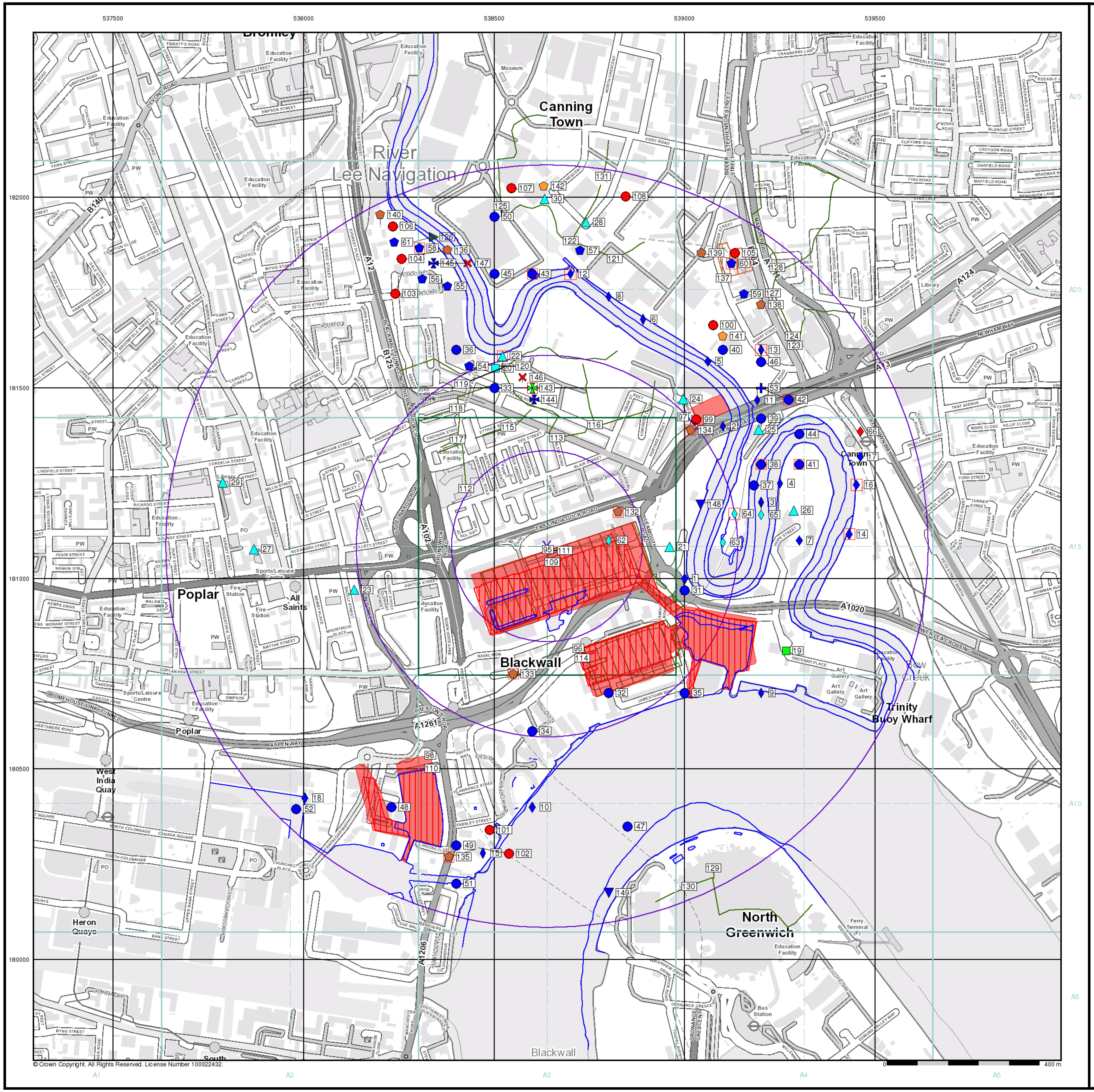
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Canning Town
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Blackwall
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Bow Creek
Trinity Buoy Wharf
West India Quay
Heron Quays
North Greenwich
Poplar
A12
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A124
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B125
B140
EAST INDIA DOCK ROAD
ASPEN WAY
LIMEHOUSE LINK (TUNNEL)
Blackwall
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General

- ⬡ Specified Site
- ⬡ Specified Buffer(s)
- X Bearing Reference Point
- 8 Map ID
- ☐ Several of Type at Location

Agency and Hydrological

- ● Contaminated Land Register Entry or Notice (Location)
- ▨ Contaminated Land Register Entry or Notice
- ◆ Discharge Consent
- ▲ Enforcement or Prohibition Notice
- ▲ Integrated Pollution Control
- ■ Integrated Pollution Prevention Control
- ■ Local Authority Integrated Pollution Prevention and Control
- ▲ Local Authority Pollution Prevention and Control
- ▼ Local Authority Pollution Prevention and Control Enforcement
- ● Pollution Incident to Controlled Waters
- ▼ Prosecution Relating to Authorised Processes
- ◆ Prosecution Relating to Controlled Waters
- ▲ Registered Radioactive Substance
- ~ River Network or Water Feature
- ✚ River Quality Sampling Point
- ⬟ Substantiated Pollution Incident Register
- ◆ Water Abstraction
- ◆ Water Industry Act Referral

Hazardous Substances

- ✖ COMAH Site
- ✖ Explosive Site
- ✖ NIHHS Site
- ✖ Planning Hazardous Substance Consent
- ✖ Planning Hazardous Substance Enforcement

Geological

- ▼ BGS Recorded Mineral Site

Waste

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- ▶ Potentially Infilled Land (Water)
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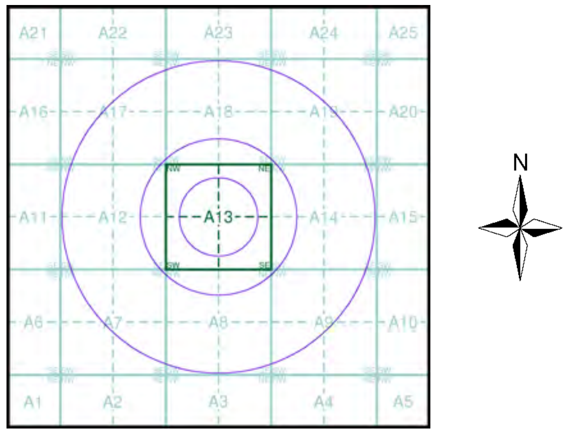
- ▨ Potentially Infilled Land (Water)
- ▨ Registered Landfill Site
- ▶ Registered Landfill Site (Location)
- ▤ Registered Landfill Site (Point Buffered to 100m)
- ▤ Registered Landfill Site (Point Buffered to 250m)
- ⬟ Registered Waste Transfer Site (Location)
- ▥ Registered Waste Transfer Site
- ⬟ Registered Waste Treatment or Disposal Site (Location)
- ▤ Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

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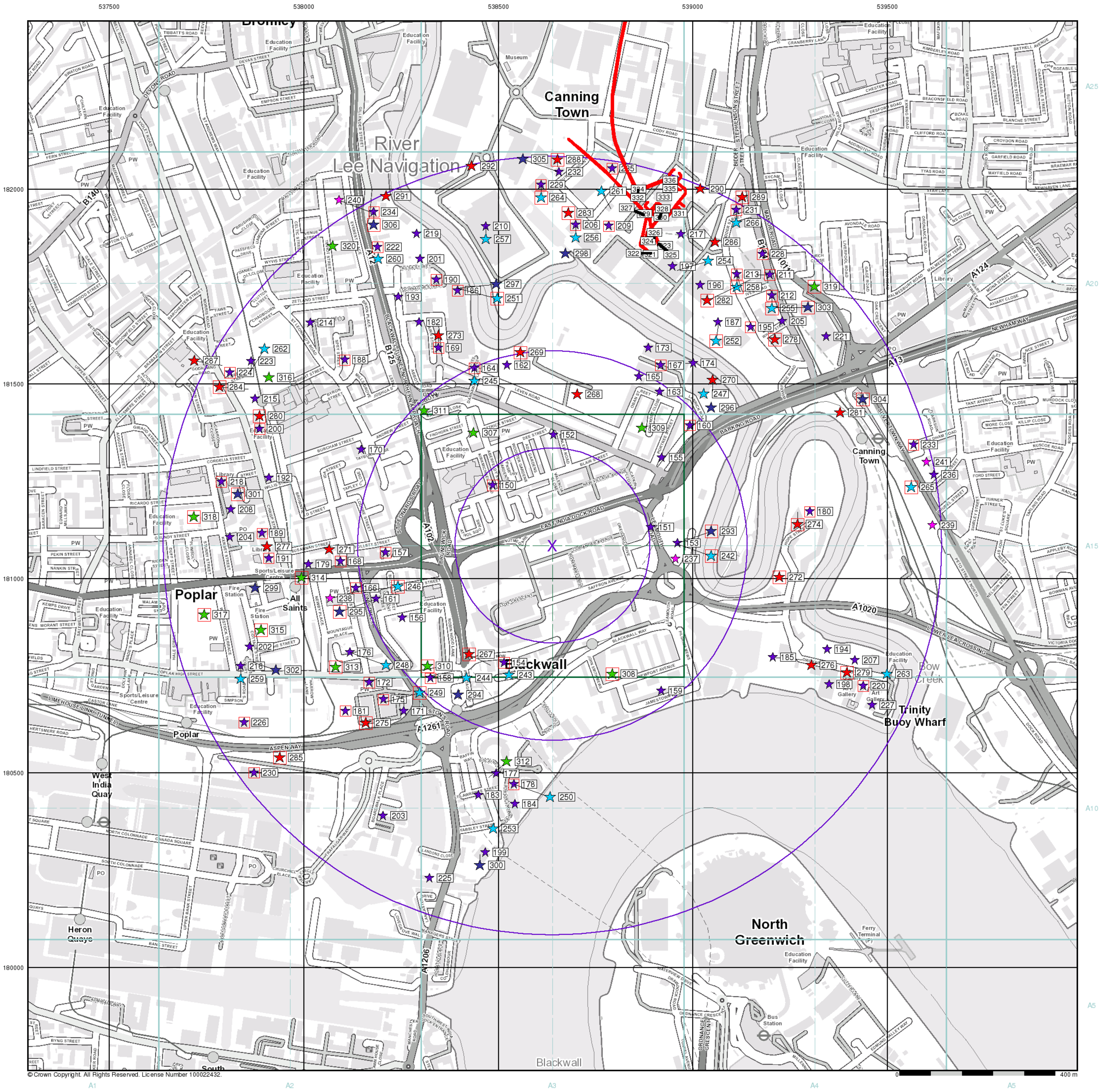
Fax: 0844 844 9951
Web: www.envirocheck.co.uk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Trinity Buoy Wharf
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A5 A10 A15 A20 A25
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Industrial Land Use Map

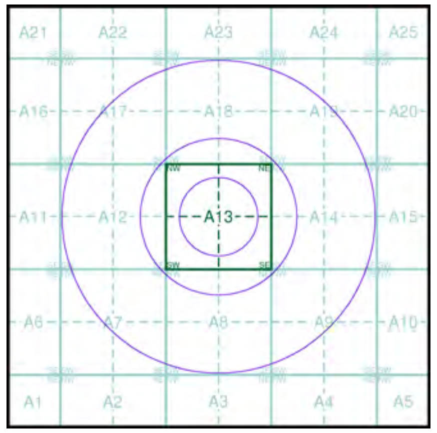
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- ☐ Slice
- 8 Map ID

Industrial Land Use

- ★ Contemporary Trade Directory Entry
- ★ Fuel Station Entry
- \ Gas Pipeline
- ★ Points of Interest - Commercial Services
- ★ Points of Interest - Education and Health
- ★ Points of Interest - Manufacturing and Production
- ★ Points of Interest - Public Infrastructure
- ★ Points of Interest - Recreational and Environmental
- \ Underground Electrical Cables

Industrial Land Use Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark
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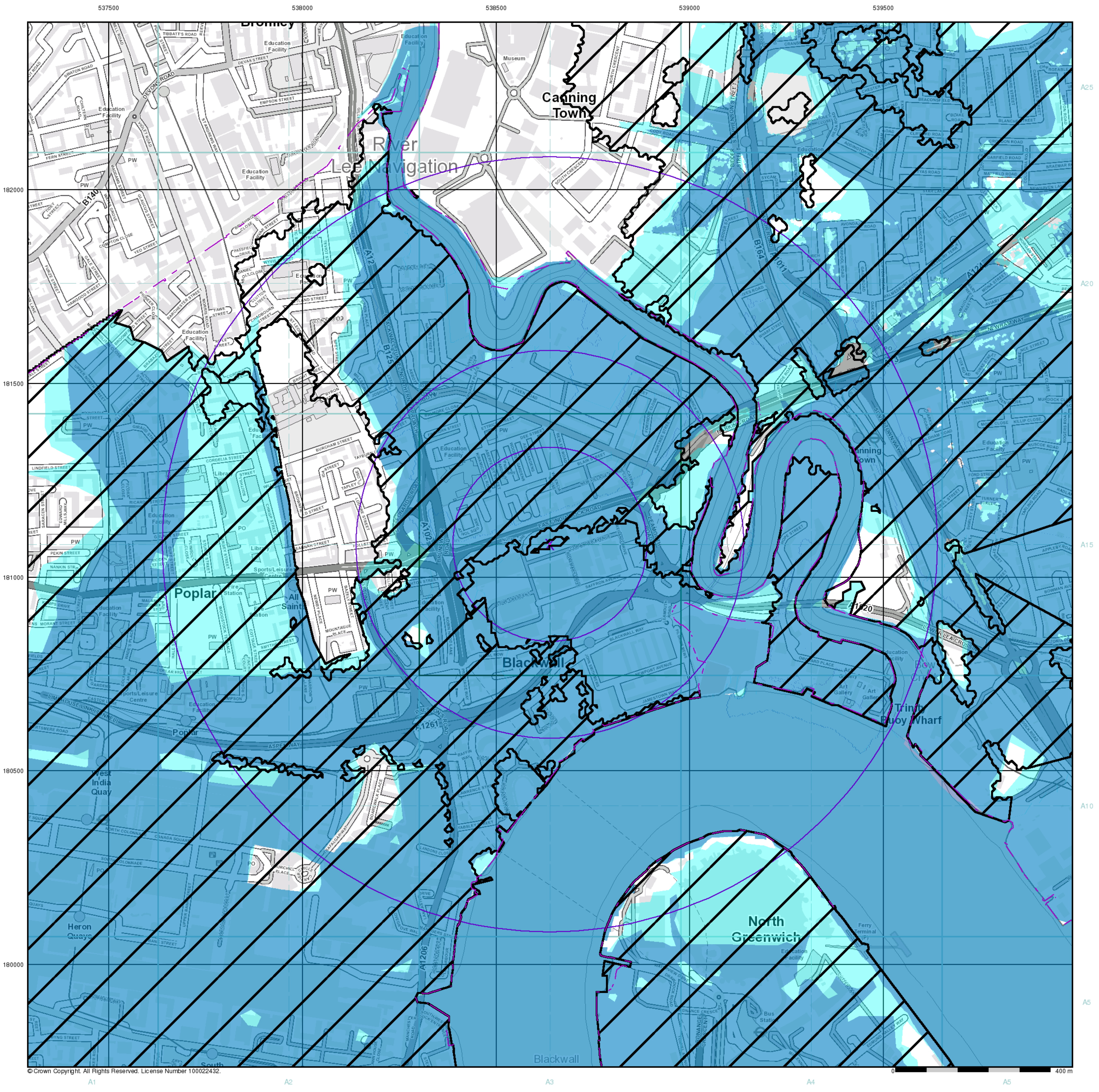
Web:	www.envirocheck.co.uk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North Greenwich
Trinity Buoy Wharf
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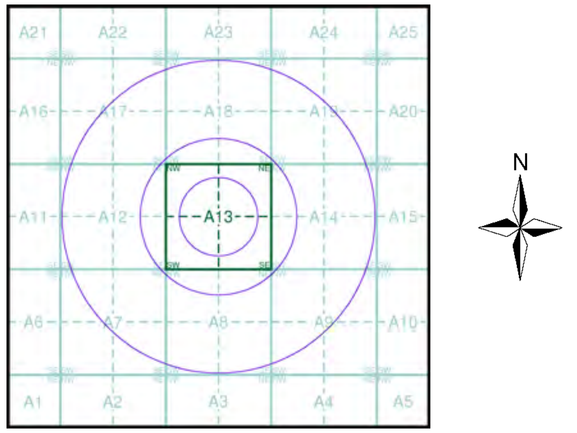
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- ▨ Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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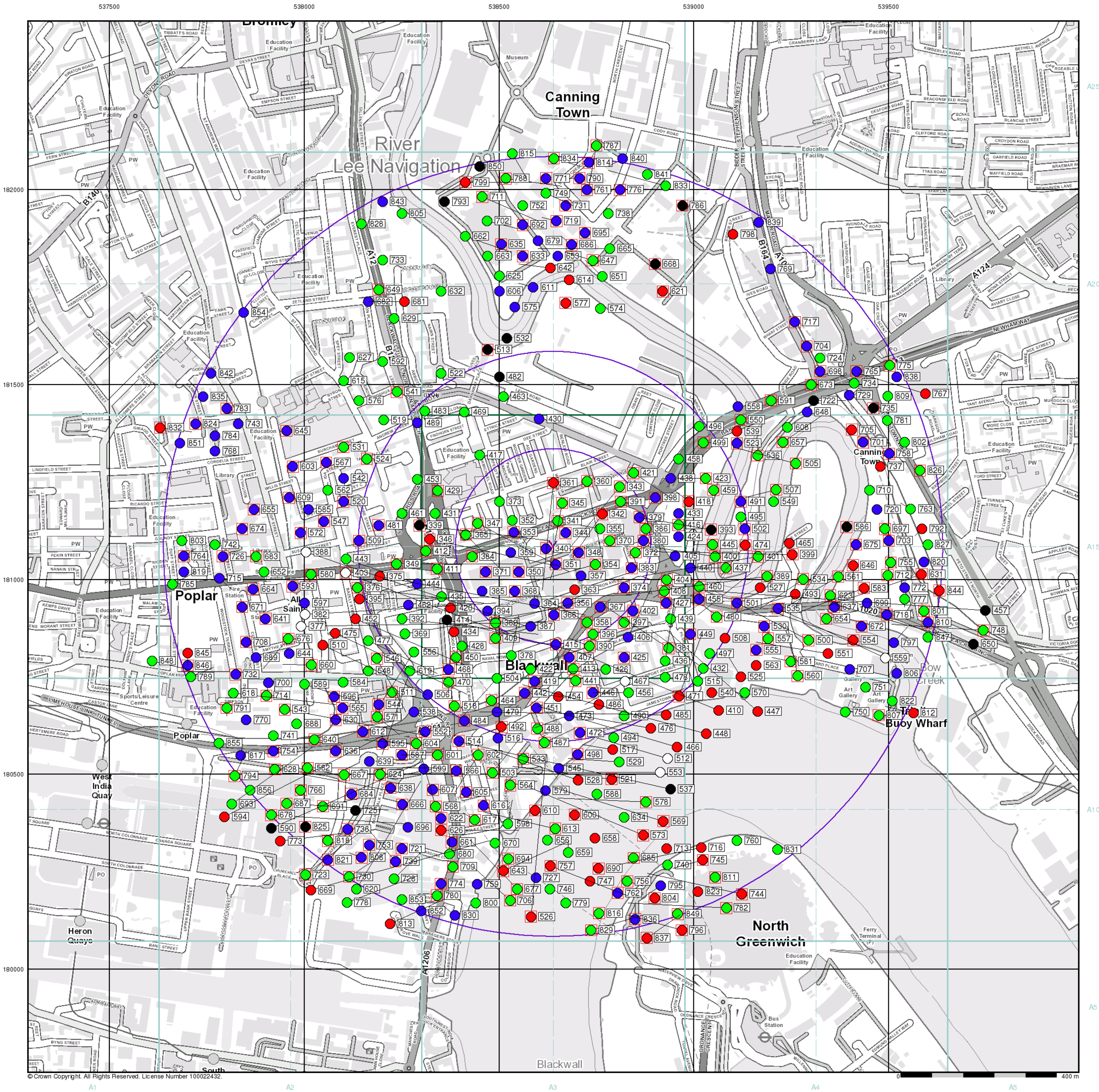

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Trinity Buoy Wharf
North Greenwich
West India Quay
Heron Quays
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General

- ⬠ Specified Site
- ⬠ Specified Buffer(s)
- X Bearing Reference Point
- 8 Map ID
- ☐ Several of Type at Location

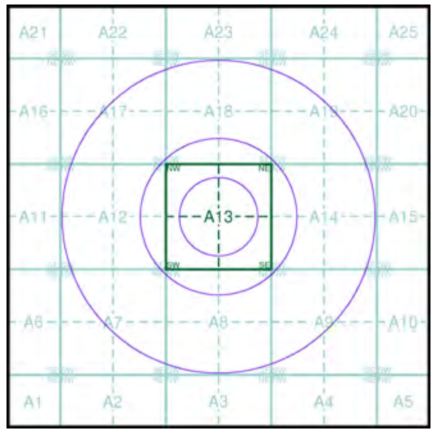
Agency and Hydrological (Boreholes)

- ● BGS Borehole Depth 0 - 10m
- ● BGS Borehole Depth 10 - 30m
- ● BGS Borehole Depth 30m +
- ● Confidential
- ○ Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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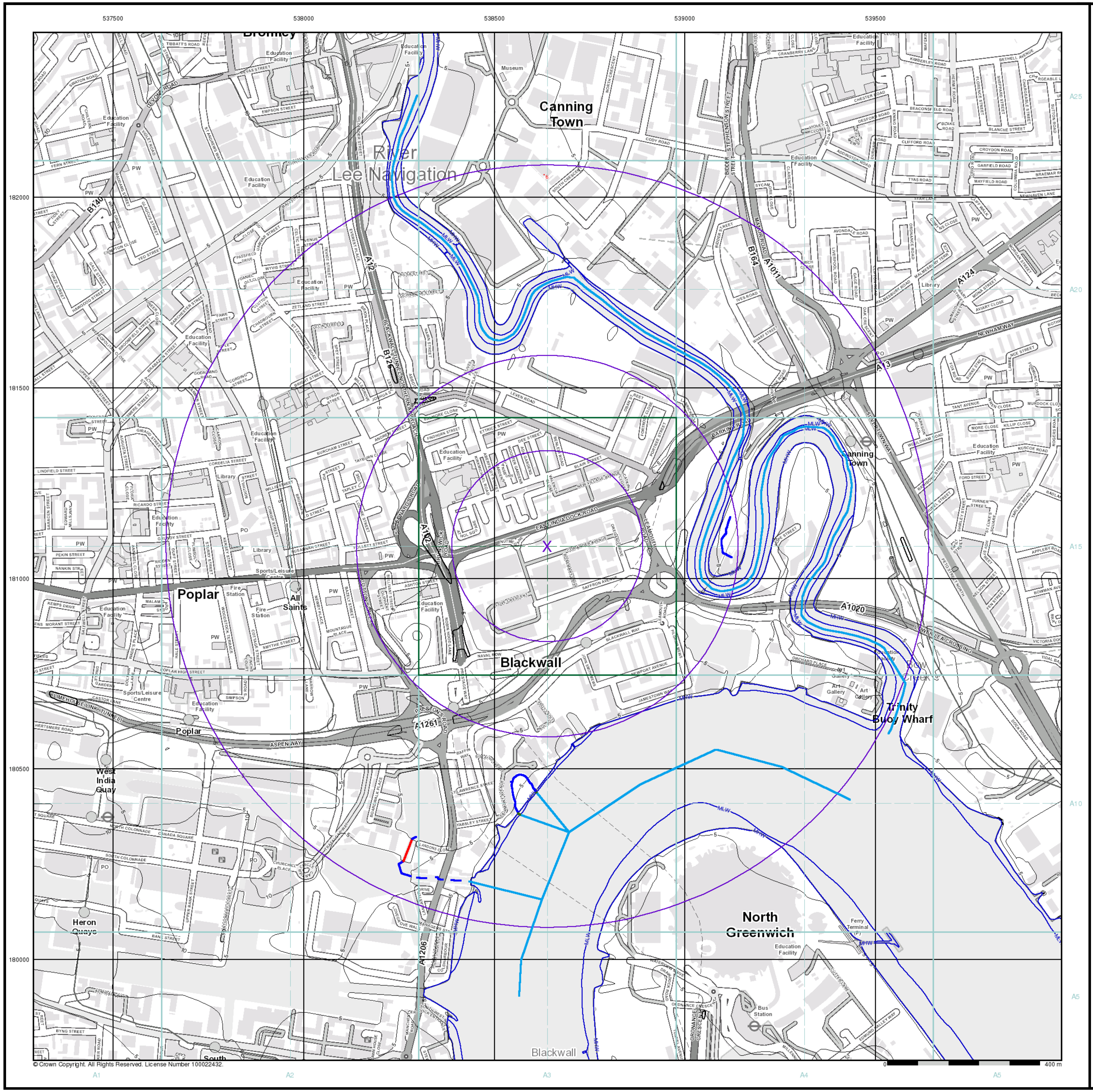
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Blackwall
Trinity Buoy Wharf
West India Quay
Heron Quays
North Greenwich
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A1206
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B140
B126
EAST INDIA DOCK ROAD
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General

Specified Site

Specified Buffer(s)

X Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

Standard Contour

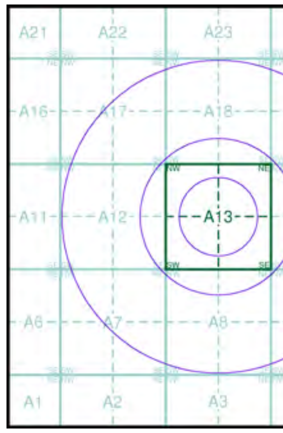
Master Contour

Spot Height

MLW Mean Low Water

MHW Mean High Water

OS Water Network Map - Slice A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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Coriander Avenue, London

Landmark

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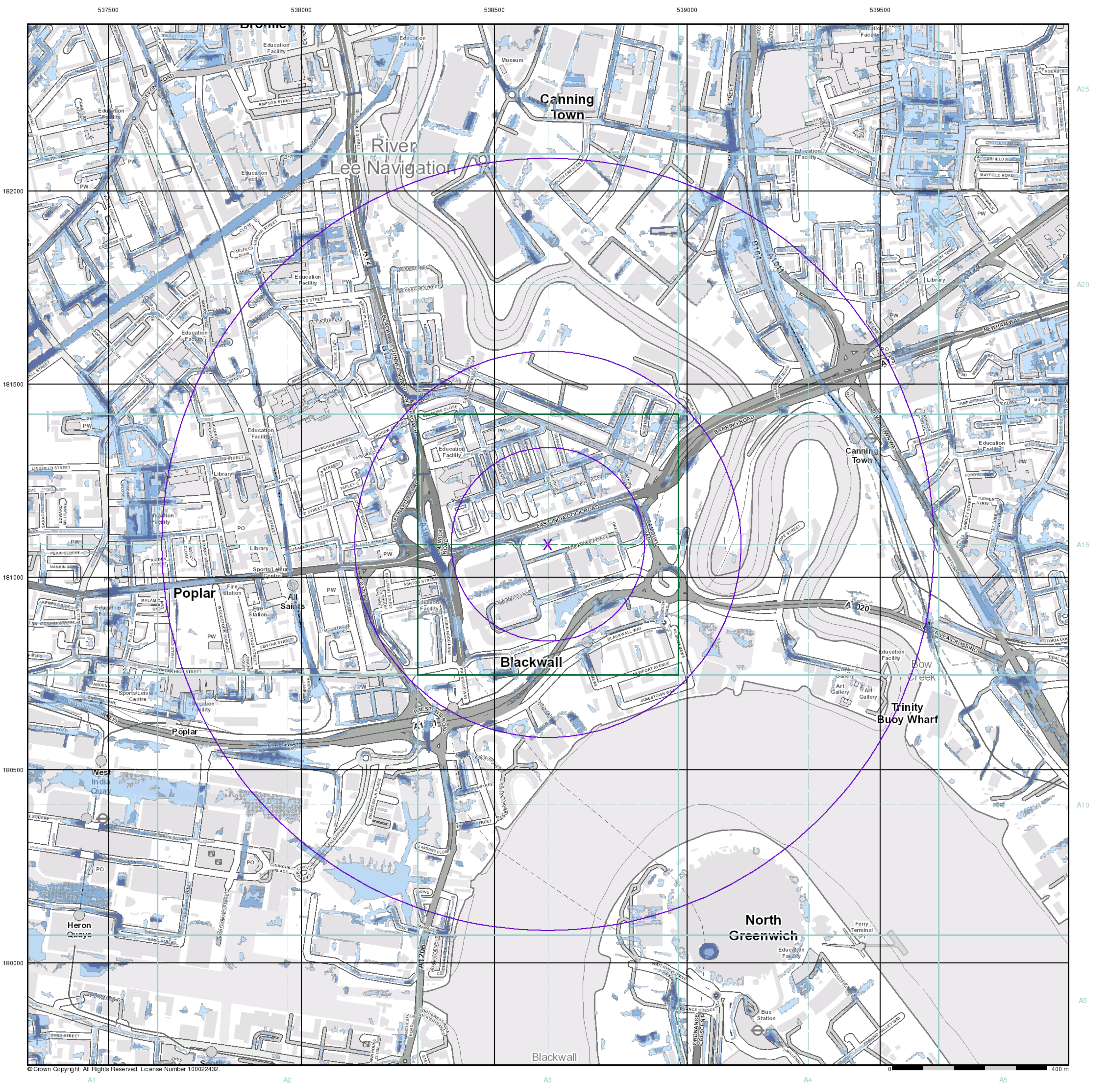

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Bromley
Canning Town
River Lee Navigation
Museum
Education Facility
Library
PW
PO
Poplar
Fire Station
All Saints
Sports/Leisure Centre
Blackwall
Canning Town
Trinity Buoy Wharf
Bow Creek
Art Gallery
West India Quay
Heron Quays
North Greenwich
Ferry Terminal
Bus Station
East India Dock Road
Barking Road
A13
A1020
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A1206
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B126
Coriander Avenue
Lea Crossing
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- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Risk of Flooding from Surface Water

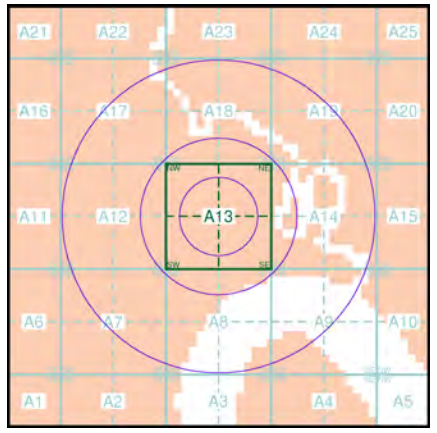
- ▨ High - 30 Year Return
- ▨ Medium - 100 Year Return
- ▨ Low - 1000 Year Return

Suitability

See the suitability map below

- ▨ National to county
- ▨ County to town
- ▨ Town to street
- ▨ Street to parcels of land
- ▨ Property

EA/NRW Suitability Map - Slice A



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Order Details

Order Number:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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Landmark
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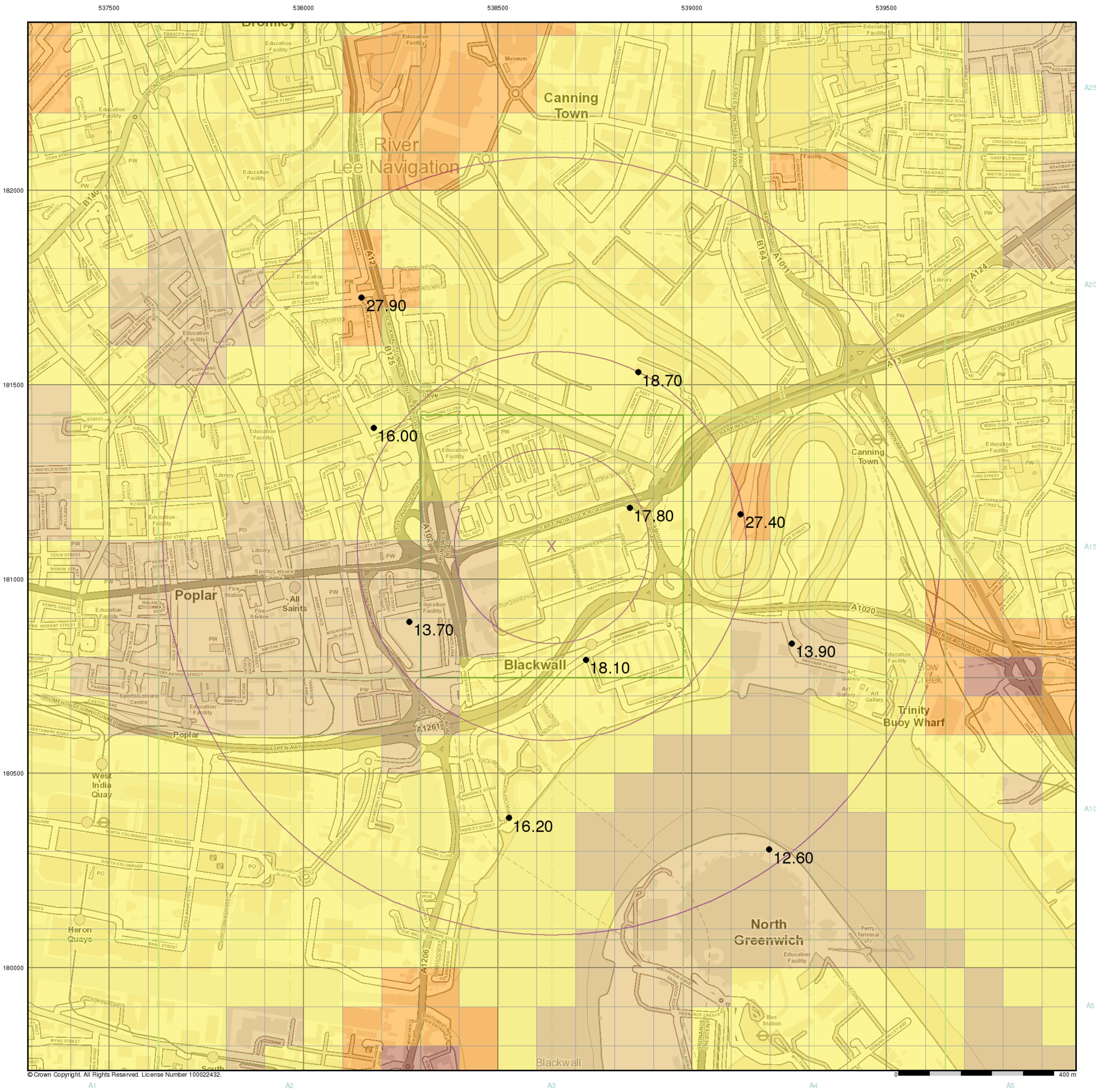
Fax:	0844 844 9951
Web:	www.envirocheck.co.uk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Heron Quays
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General

Specified Site · Specified Buffer(s) · X Bearing Reference Point

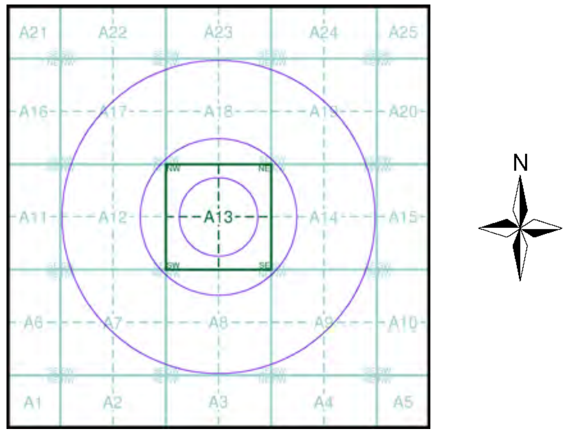
Urban Soil Chemistry Arsenic

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Arsenic Concentrations mg/kg

🟫	< 15
🟨	15 - 25
🟧	25 - 35
🟫	35 - 45
🟩	45 - 60
🟩	60 - 120
🟩	> 120

Urban Soil Chemistry Arsenic - Slice A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Order Details

Order Details:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
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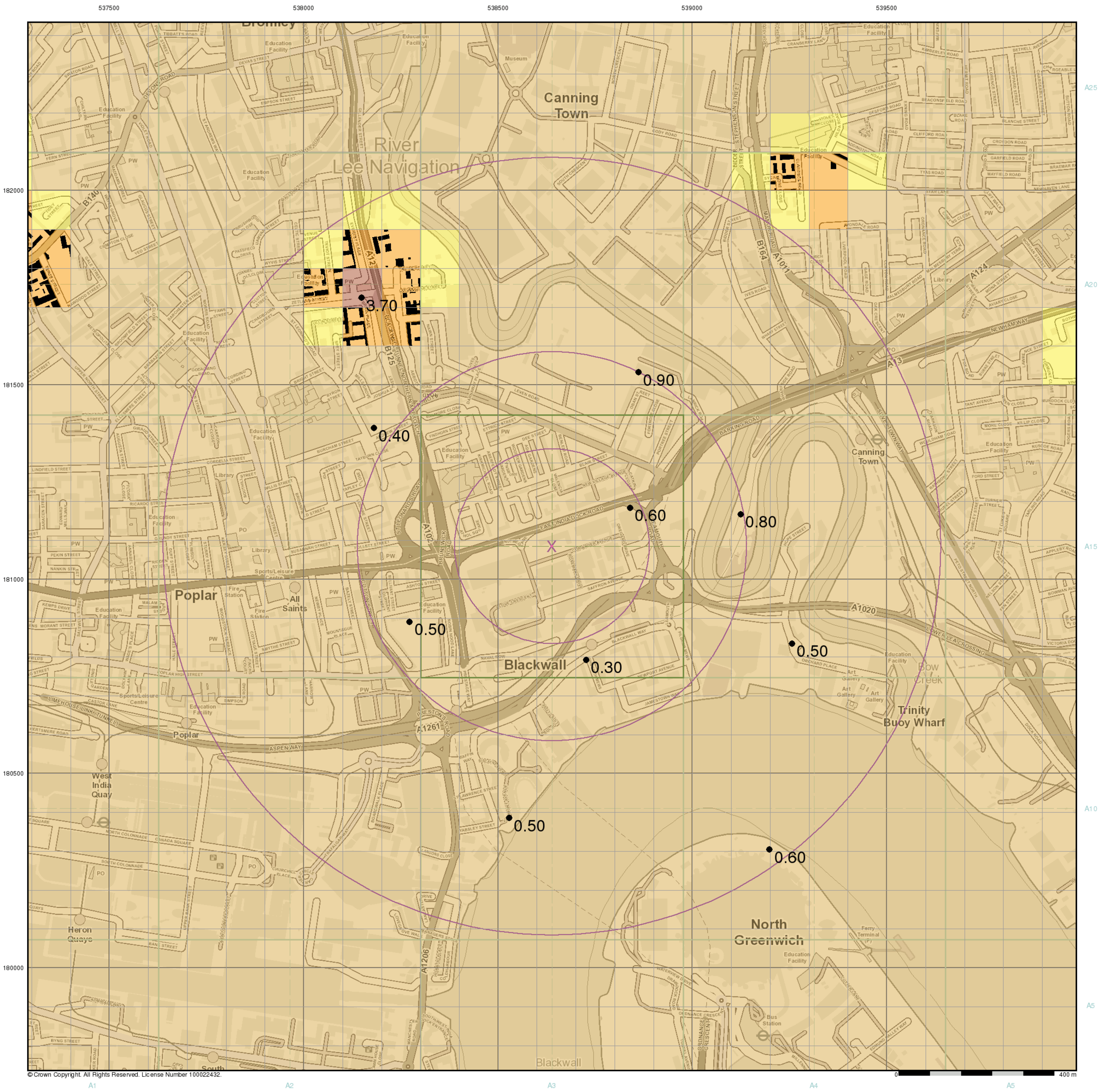
Site Area (Ha)	0.01
Search Buffer (m)	1000

Site Details

Coriander Avenue, London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Trinity Buoy Wharf
Bow Creek
West India Quay
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General

Specified Site   Specified Buffer(s)   X Bearing Reference Point

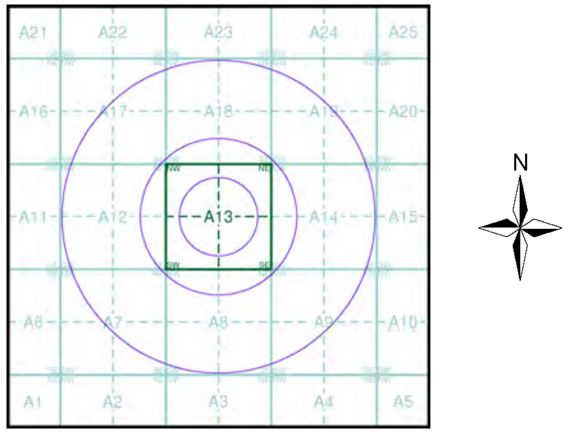
Urban Soil Chemistry Cadmium

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Cadmium Concentrations mg/kg

▨	< 1.8
🟨	1.8 - 2.2
🟧	2.2 - 3.0
🟫	> 3.0

Urban Soil Chemistry Cadmium - Slice A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Order Details

Order Details:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha)	0.01
Search Buffer (m)	1000

Site Details

Coriander Avenue, London

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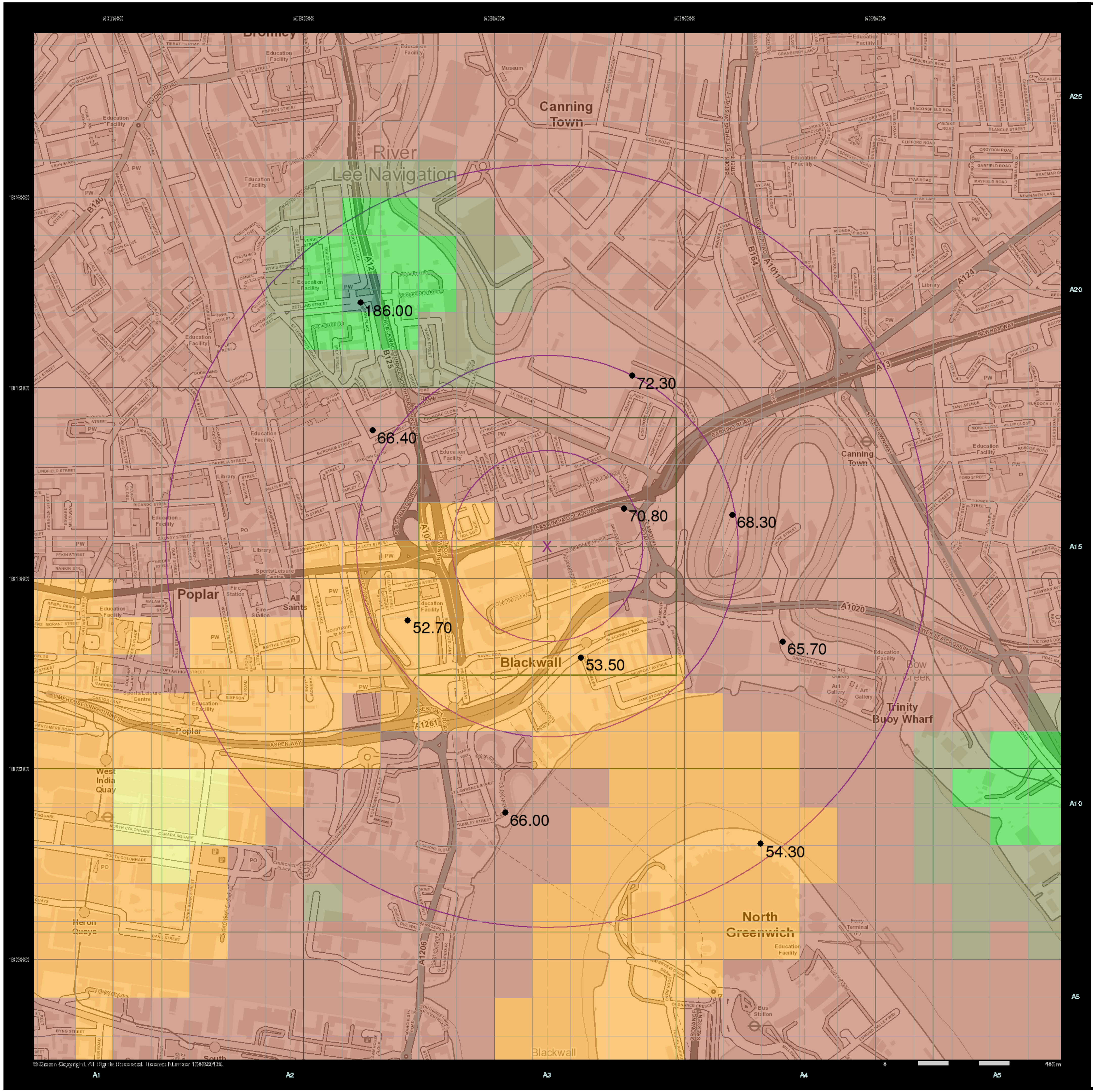
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Greenwich
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Buoy Wharf
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General

Specified Site
Specified Buffer(s)
X Bearing Reference Point

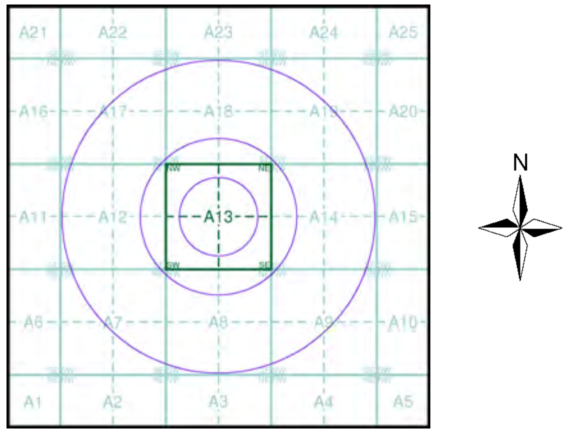
Urban Soil Chemistry Chromium

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Urban Soil Chemistry Chromium - Slice A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Order Details

Order Details: 157608383_1_1
Customer Ref: 1016734
National Grid Reference: 538640, 181080
Slice: A
Site Area (Ha) 0.01
Search Buffer (m) 1000

Site Details

Coriander Avenue, London

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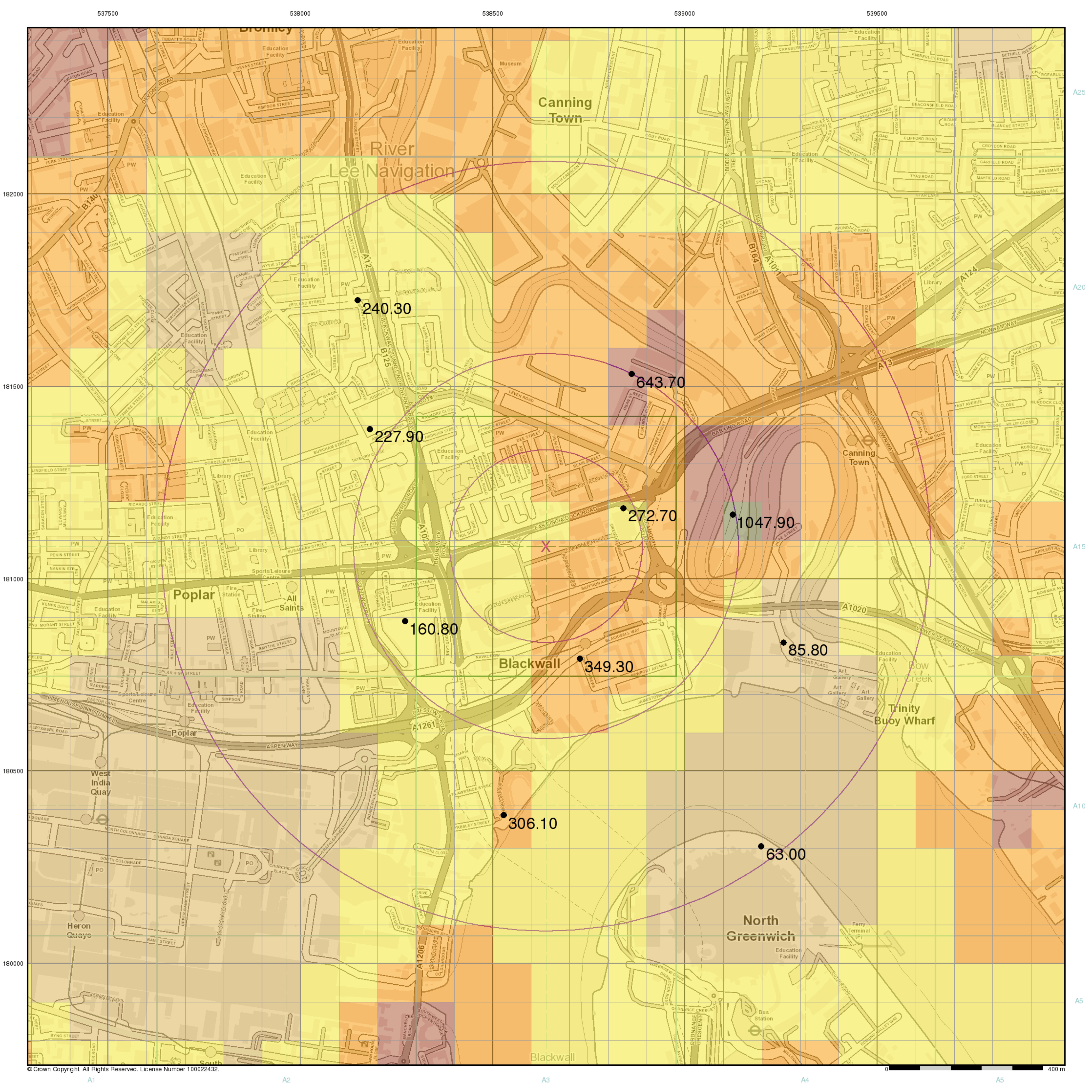
Fax: 0844 844 9951
Web: www.envirocheck.co.uk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River Lee Navigation
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Trinity Buoy Wharf
West India Quay
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North Greenwich
Heron Quays
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Specified Site   Specified Buffer(s)   X Bearing Reference Point

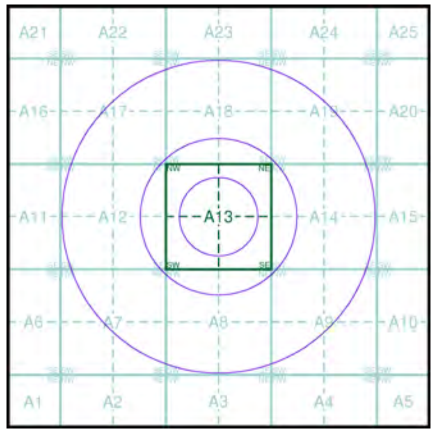
Urban Soil Chemistry Lead

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Lead Concentrations mg/kg

- 🟫 < 150
- 🟨 150 - 300
- 🟧 300 - 600
- 🟪 600 - 900
- 🟩 > 900

Urban Soil Chemistry Lead - Slice A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Order Details

Order Details:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha)	0.01
Search Buffer (m)	1000

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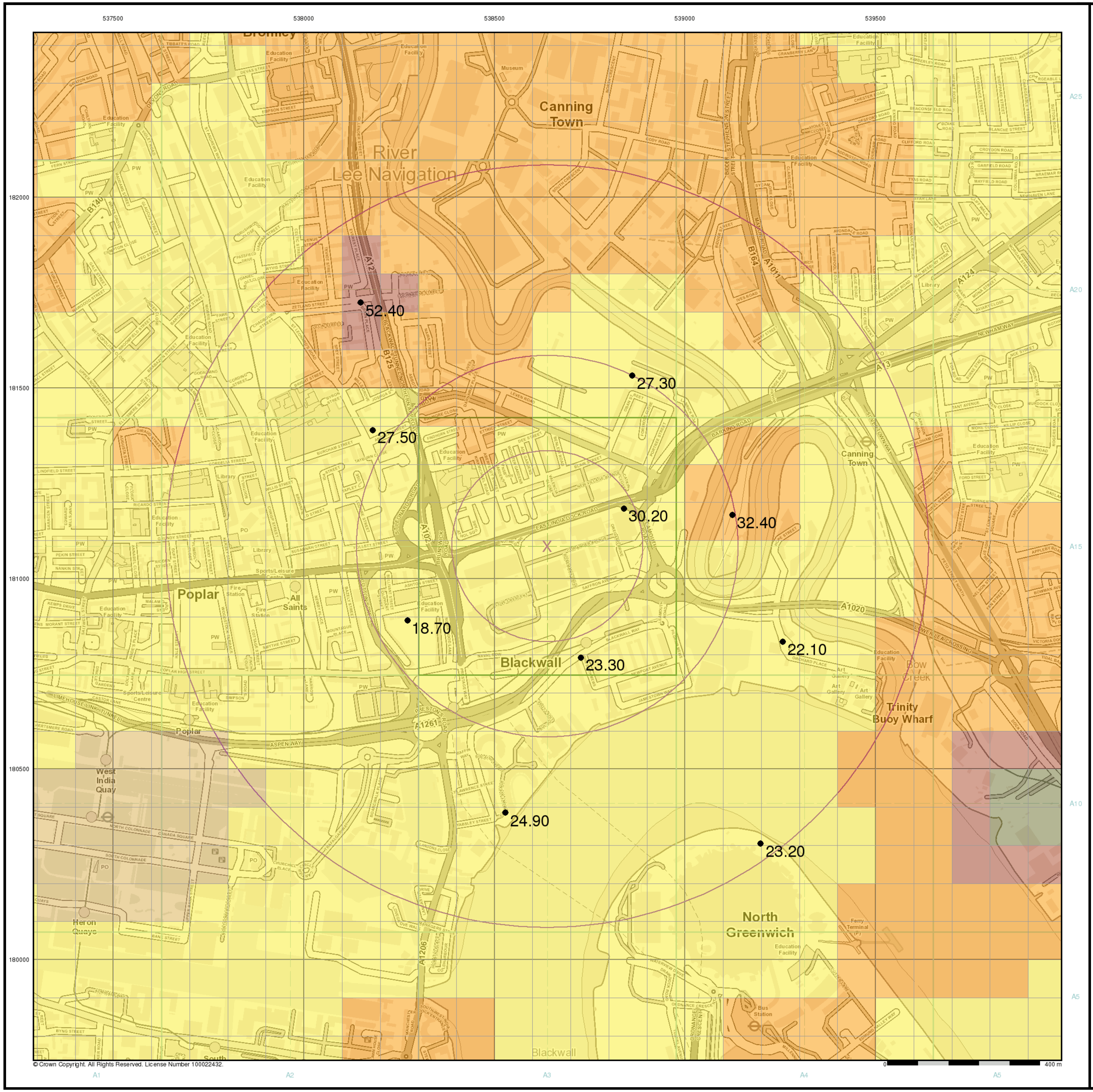
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General

Specified Site　Specified Buffer(s)　X Bearing Reference Point

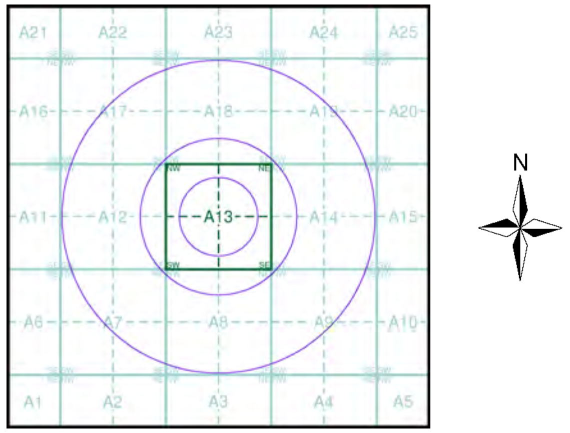
Urban Soil Chemistry Nickel

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Nickel Concentrations mg/kg

- ▨ < 15
- ▨ 15 - 30
- ▨ 30 - 45
- ▨ 45 - 60
- ▨ 60 - 80
- ▨ 80 - 100
- ▨ > 100

Urban Soil Chemistry Nickel - Slice A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Order Details

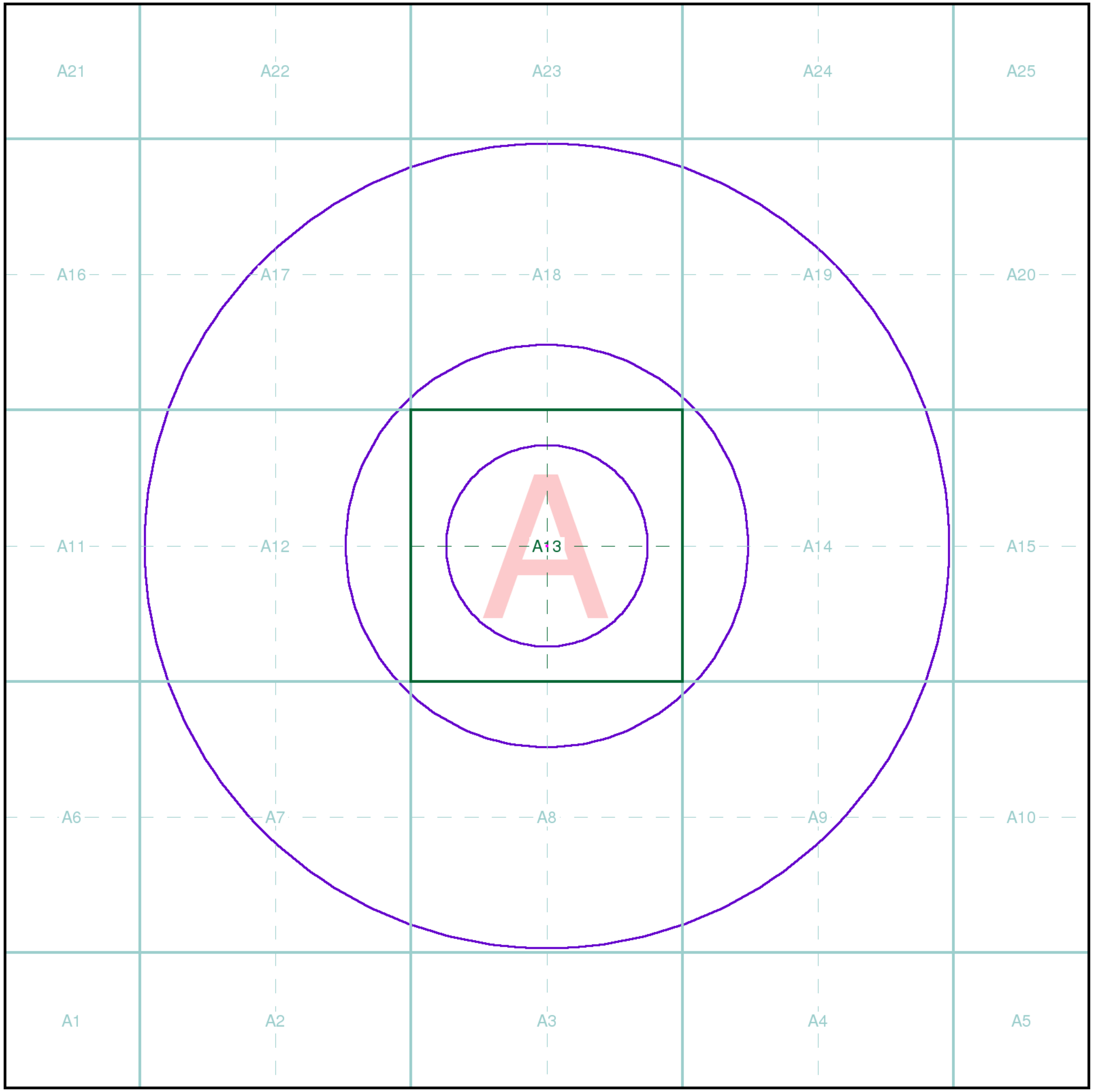
Order Details:	157608383_1_1
Customer Ref:	1016734
National Grid Reference:	538640, 181080
Slice:	A
Site Area (Ha)	0.01
Search Buffer (m)	1000

Site Details

Coriander Avenue, London

Landmark INFORMATION GROUP

Tel:	0844 844 9952
Fax:	0844 844 9951
Web:	www.envirocheck.co.uk



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Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mr J Allen, Cundall, Partnership House, 4th Floor, Regents Farm Road, Gosforth, Newcastle Upon Tyne, NE3 3AF

Order Details

Order Number: 157608383_1_1
Customer Ref: 1016734
National Grid Reference: 538640, 181080
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Coriander Avenue, London

Full Terms and Conditions can be found on the following link:
http://www.landmarkinfo.co.uk/Terms/Show/515

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Appendix C: Preliminary UXO Risk Assessment

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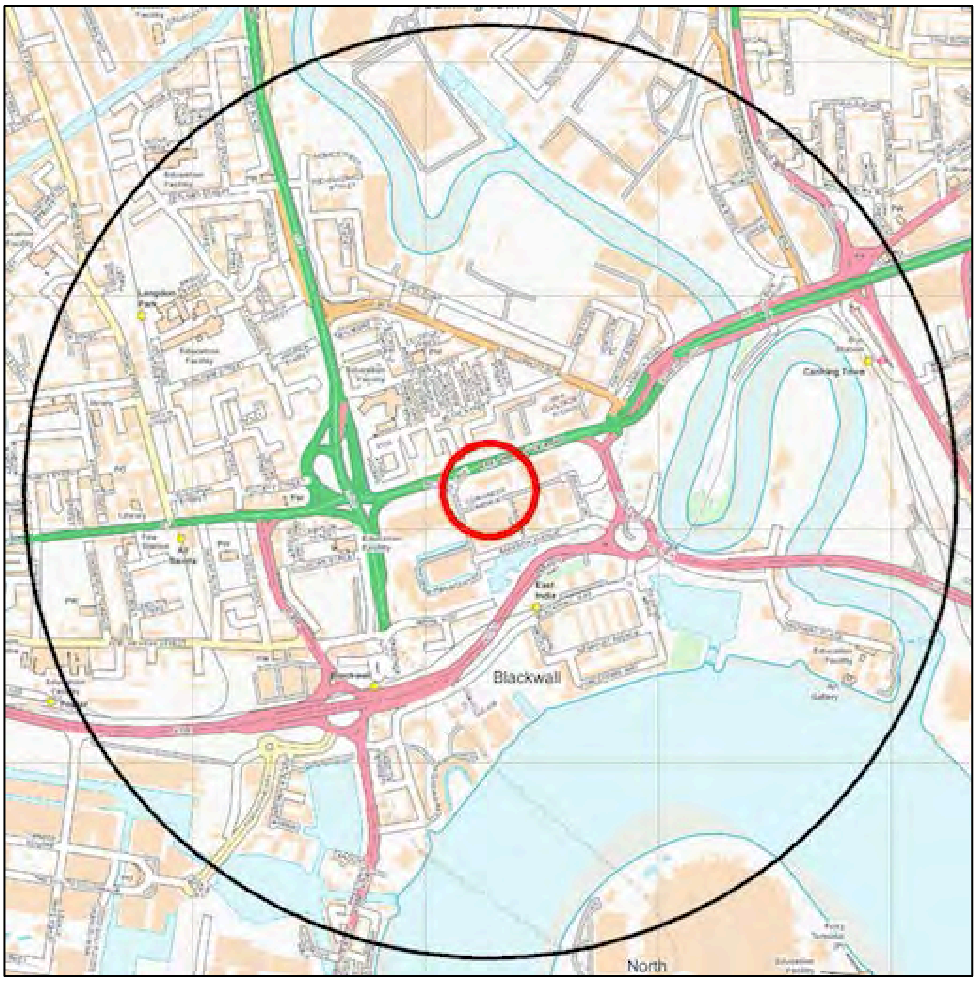
PRELIMINARY UNEXPLODED ORDNANCE (UXO) THREAT ASSESSMENT

Meeting the requirements of *CIRIA* C681 'Unexploded Ordnance (UXO) – A guide for the Construction Industry' Risk Management Framework



6 ALPHA PROJECT NUMBER	P6507	**ORIGINATOR**	S. Barratt
LANDMARK ORDER NUMBER	159326820_1	**REVIEWED BY**	R. Griffiths (16th March 2018)
CLIENT REFERENCE	1016734	**RELEASED BY**	R. Griffiths (16th March 2018)
SITE	Coriander Avenue, London		
RATING	**MEDIUM** – This Site requires further action to establish and mitigate any UXO risk posed		

UNEXPLODED ORDNANCE THREAT ASSESSMENT

STUDY SITE

The Study Site is described as "Coriander Avenue, London", and it is centred on National Grid Reference 538640, 181080.

THREAT POTENTIAL AND RECOMMENDATIONS

UXO PROBABILITY ASSESSMENT = 3 RATING, INDICATING A MEDIUM PROBABILITY OF UXO ENCOUNTER

The rating scale can be seen on *Figure 2* (Probability of UXO Encounter). In accordance with current guidelines (*CIRIA* C681 Chapter 5), the most appropriate threat rating has been determined at this specific site for UXO threat consideration and has been used for the final assessment and recommendations.

In accordance with *CIRIA* C681 Chapter 5 on managing UXO risks, *6 Alpha* recommends that the next stage in the risk management framework is:

DETAILED UXO THREAT & RISK ASSESSMENT

We would be pleased to provide this service, please contact *Envirocheck* for further details:

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REPORT SUMMARY

During WWII, the Study Site was situated within *Poplar Metropolitan Borough*, which recorded 80 High Explosive (HE) bomb strikes per 100 hectares; a very high level of bombing.

Luftwaffe aerial reconnaissance photography associated with the Site identified port installations (on-site and 400m south-west), gas works (250m north-east) and a power station (550m north-east) as primary bombing targets. In addition, a wharf and a railway station located in the vicinity may have been considered secondary bombing targets.

Air Raid Precaution (ARP) records identified three HE bomb strikes within the Site. In addition, five HE bomb strikes were identified within 85m of the Site boundary; the closest being 30m east.

London County Council (LCC) bomb damage mapping recorded "serious damage; doubtful if repairable", "blast damage; minor in nature" and "damage beyond repair" on-site. In addition, "general blast damage; minor in nature" and "total destruction" were recorded immediately north of the Study Site.

Given that both bombing and bomb damage were recorded on-site; it would suggest that further action is warranted to address the potential for UXO encounter.

USING THIS REPORT

This Preliminary Assessment is designed to inform environmental and construction professionals of the potential threat of military related explosives and/or ordnance on, or in, the vicinity of the Study Site.

This assessment is designed to be employed as a site-screening tool to meet with the requirement of Phase One of the *CIRIA UXO Risk Management Framework*; there are two broad prospective outcomes; either the threat level requires a detailed threat & risk assessment; or no further action is required. In the former instance we can provide a report within 14 working days (or more quickly upon application).

Two figures accompany the report, the *Second World War* (WWII) High Explosive (HE) Bomb Density and the final Probability of UXO Encounter. The purpose of this approach is to demonstrate that whilst bomb density statistics give an indication for WWII bombing, they should not be relied upon exclusively to generate a holistic assessment.

For further information, please contact *Envirocheck*:
Website: http://www.envirocheck.co.uk

Telephone: +44 (0)844 844 9952
Email: customerservice@envirocheck.co.uk

DATA FINDINGS

Threat Source (within 1,000m)	Detail	
	Identified	Comments
Airfields/Military Facilities	✗	None recorded within 1,000m.
Ordnance Manufacture/Storage	✗	None recorded within 1,000m.
WWII Decoy Bombing Sites	✗	None recorded within 1,000m.
WWII Defensive Features	✓	A pillbox (755m south).
WWII *Luftwaffe* Designated Bombing Targets	✓	Port installations (on-site and 400m south-west), gas works (250m north-east) and a power station (550m north-east).
Secondary Bombing Targets	✓	Wharf (185m east) and a railway station (330m south).
WWII Bomb Strikes Within Site Boundary	✓	ARP records identified three HE bomb strikes on-site.
WWII Bomb Strikes Near Site Boundary	✓	ARP records identified HE bomb strikes 30m east, 60m east, 60m south-west, 70m north-west and 85m east.
WWII Bomb Damage	✓	*LCC* mapping recorded "serious damage; doubtful if repairable", "blast damage; minor in nature" and "damage beyond repair" on-site.
Abandoned Bomb Register	✗	The official abandoned bomb list did not identify any abandoned bombs within 1,000m.
WWII Bombing Density Per 100 Hectares	✓	The Site was located within *Poplar Metropolitan Borough*, which recorded 80 HE bomb strikes per 100 hectares.

IMPORTANT NOTES

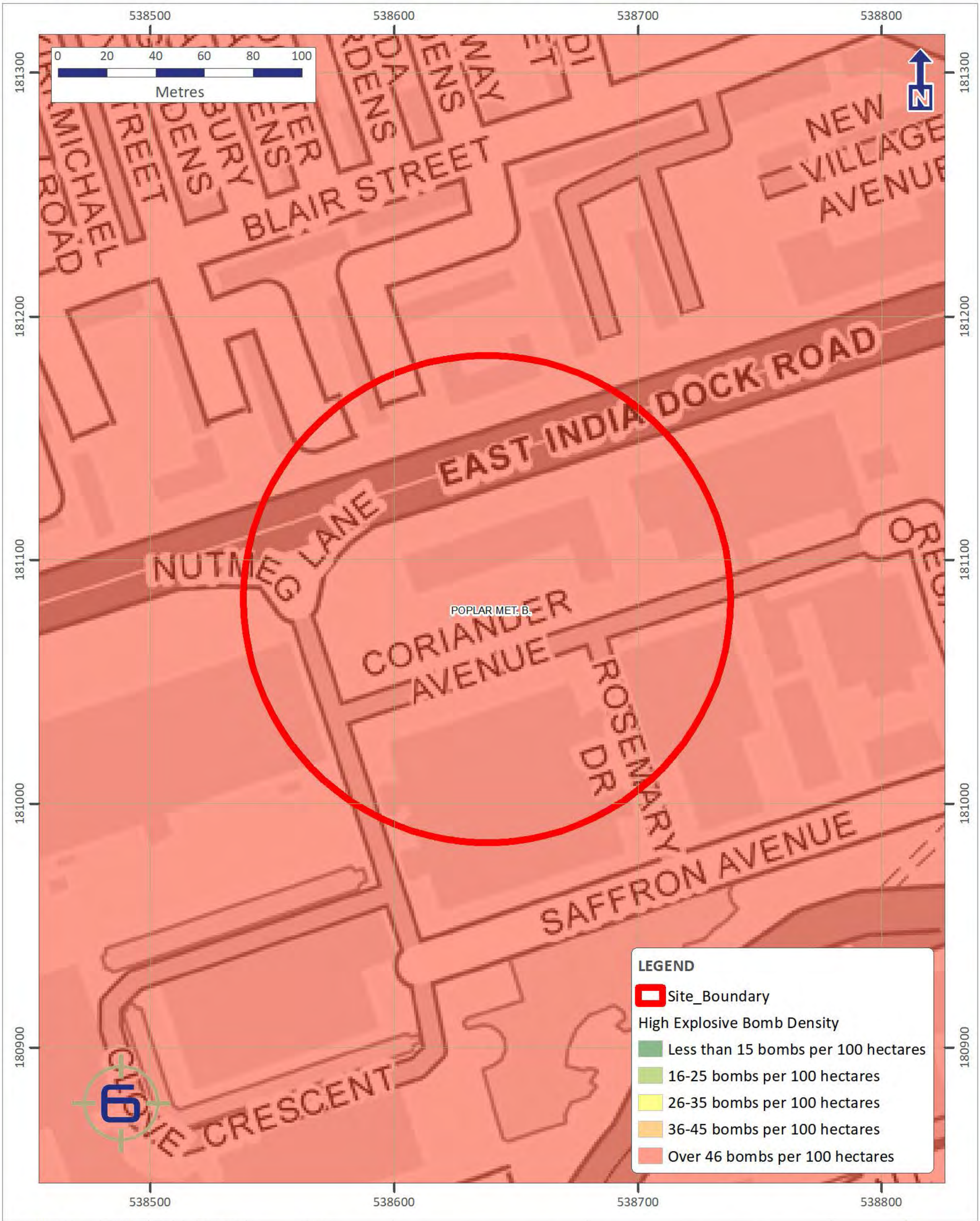
1. The term 'Preliminary UXO Threat Assessment' has been used to describe this report, to fall in line with the *CIRIA* C681 guidelines. Whilst the term 'Risk' can be justifiably used at this stage, the reader should note that the 'Consequence' function of 'Risk' is not considered. Should it be required, this would be addressed in the 'Detailed UXO Threat & Risk Assessment' (Stages 2 and 3).
2. This report is accurate and up to date at the time of writing.
3. The assessment levels have been generated from historical data and third party sources. Where possible *6 Alpha* have sought to verify the accuracy of such data, but cannot be held accountable for inherent errors that may be in third party data sets (e.g. *National Archives* or library sources).
4. *6 Alpha* have exercised all reasonable care, skill and due diligence in producing this service.
5. Whilst every effort has been used to identify all potential UXO/explosive threats, there were a number of private facilities, which may not have released privately recorded information concerning UXO/explosive threats into the public domain. It is therefore possible that some of the aforementioned sites may not be included within the database.

BRITISH NATIONAL GRID

CORIANDER AVENUE, LONDON

WWII High Explosive Bomb Density

BOMB SEARCH
WWW.6ALPHA.COM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NEW VILLAGE AVENUE
EAST INDIA DOCK ROAD
NUTMEG LANE
POPLAR MET. B.
CORIANDER AVENUE
ROSEMARY DR
OREG
SAFFRON AVENUE
CRESCENT
LEGEND
Site_Boundary
High Explosive Bomb Density
Less than 15 bombs per 100 hectares
16-25 bombs per 100 hectares
26-35 bombs per 100 hectares
36-45 bombs per 100 hectares
Over 46 bombs per 100 hectares

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
P6507	1	SB	RG	15 March 2018

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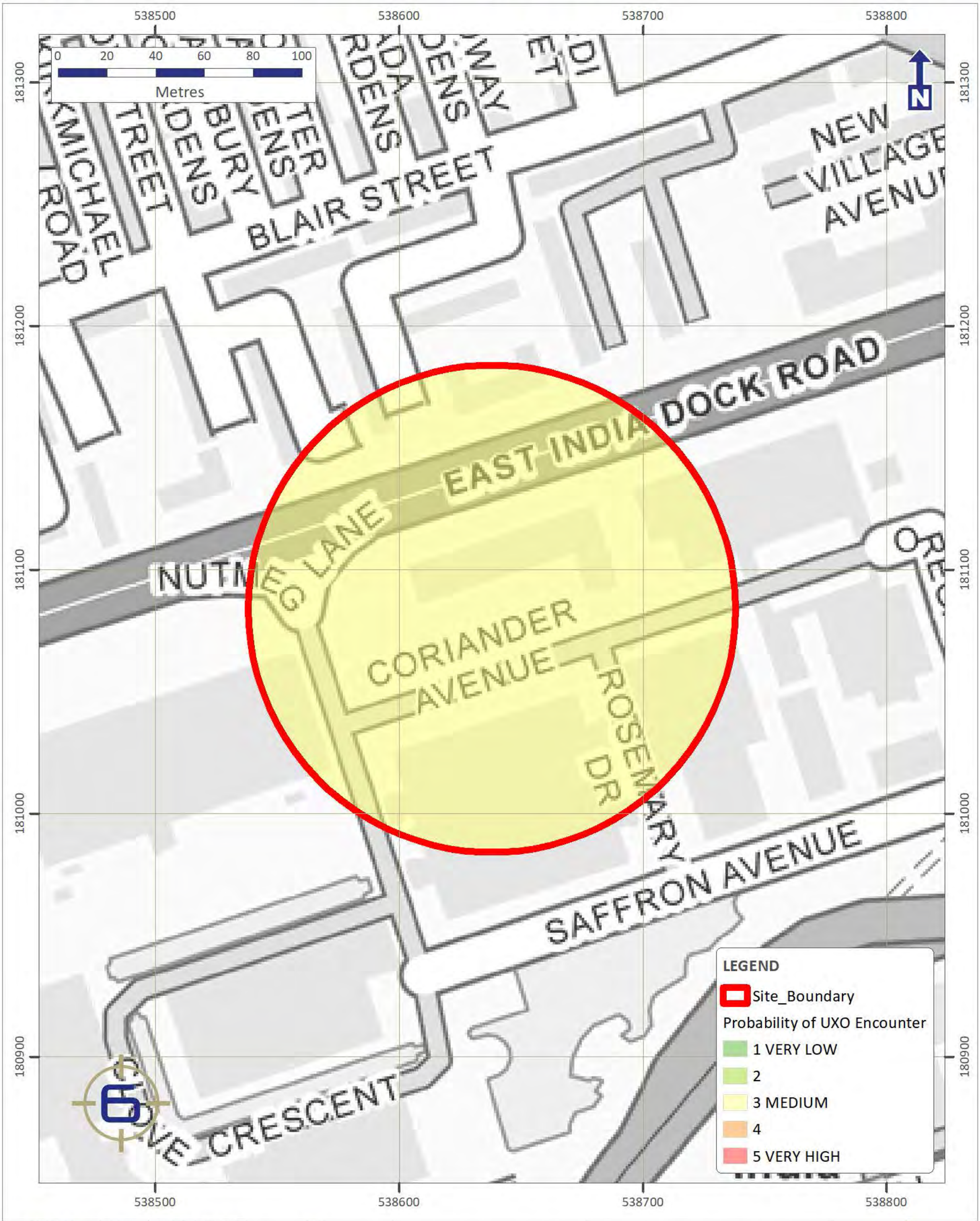
6 alpha ASSOCIATES

BRITISH NATIONAL GRID

CORIANDER AVENUE, LONDON

Probability of UXO Encounter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NEW VILLAGE AVENUE
EAST INDIA DOCK ROAD
NUTMEG LANE
CORIANDER AVENUE
ROSEMARY DR
SAFFRON AVENUE
CRESCENT
ORE
LEGEND
🟥 Site_Boundary
Probability of UXO Encounter
🟩 1 VERY LOW
🟩 2
🟨 3 MEDIUM
🟧 4
🟥 5 VERY HIGH

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
P6507	2	SB	RG	15 March 2018

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Appendix D: Detailed UXO Risk Assessment

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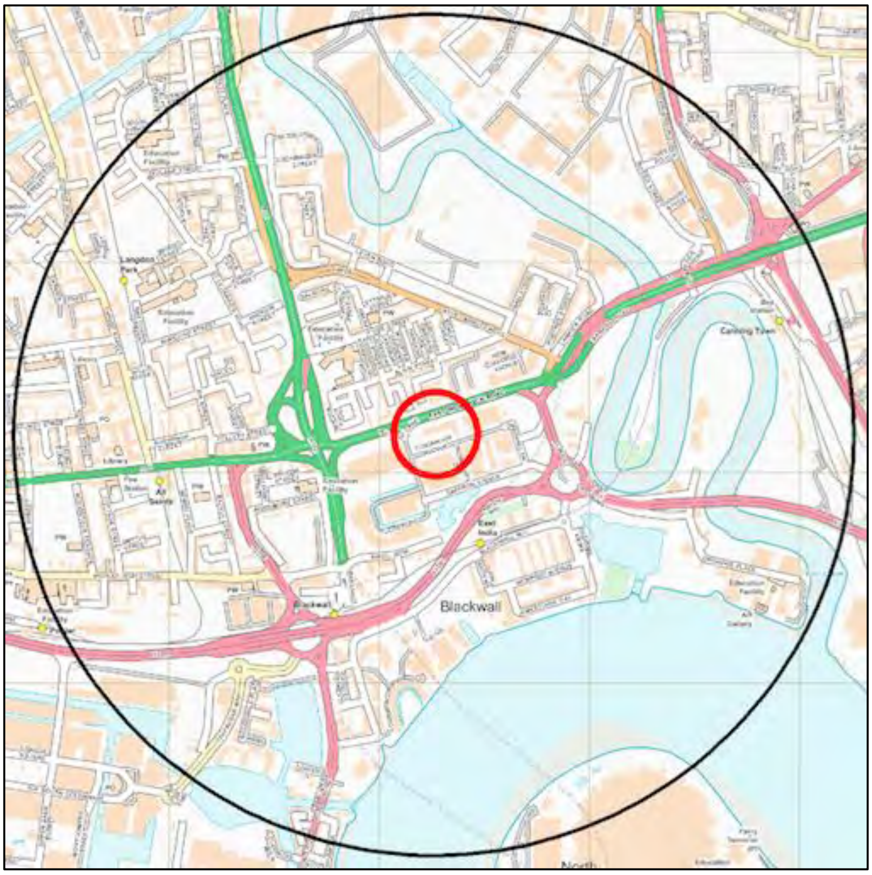
Detailed Unexploded Ordnance (UXO) Threat & Risk Assessment

Meeting the requirements of *CIRIA* C681 'Unexploded Ordnance (UXO)
A guide for the Construction Industry' Risk Management Framework



6 ALPHA PROJECT NUMBER	P6593	**ORIGINATOR**	S. Barratt
LANDMARK ORDER NUMBER	163937657_1	**REVIEWED BY**	B. Wilkinson (2nd May 2018)
CLIENT REFERENCE	1016734	**RELEASED BY**	L. Askham (3rd May 2018)
SITE	Coriander Avenue, London, E14 2AA		
RATING	**VERY HIGH** - This Site requires extensive further action to reduce risk to ALARP during intrusive activities.		

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Acronyms and Abbreviations

AA	Anti-Aircraft
AAA	Anti-Aircraft Ammunition
ALARP	As Low As Reasonably Practicable
AOD	Above Ordnance Datum
ARP	Air Raid Precaution
AXO	Abandoned Explosive Ordnance
BD	Bomb Disposal
BDO	Bomb Disposal Officer
bgl	Below Ground Level
BGS	British Geological Survey
BH	Borehole
BPD	Bomb Penetration Depth
CDP	Cast Driven Piles
CFA	Continuous Flight Auger
CIRIA	Construction Industry Research and Information Association
CPT	Cone Penetration Testing
CS	County Series
EO	Explosive Ordnance
EOC	Explosive Ordnance Clearance
EOD	Explosive Ordnance Disposal
GI	Ground Investigation
GIS	Geographic Information Systems
GL	Ground Level
GP	General Purpose
GPS	Global Positioning Systems
HAA	Heavy Anti-Aircraft
HE	High Explosive
HO	Home Office
HSE	Health and Safety Executive
IB	Incendiary Bomb
kg	Kilograms
km	Kilometres
LAA	Light Anti-Aircraft
LCC	London County Council
LE	Low Explosive
LSA	Land Service Ammunition
m	Metres
MoD	Ministry of Defence
mm	Millimetres
NEQ	Net Explosive Quantity
NFF	National Filling Factory
NGR	National Grid Reference
OD	Ordnance Datum
OS	Ordnance Survey
PM	Parachute Mine
PoW	Prisoner of War
RADAR	Radio Detection And Ranging
RAF	Royal Air Force
RN	Royal Navy
RNAS	Royal Naval Air Service
ROF	Royal Ordnance Factory
SAA	Small Arms Ammunition
TA	Territorial Army
TNT	Trinitrotoluene
UK	United Kingdom
UN	United Nations
USAAF	United States Army Air Force
UXB	Unexploded Bomb
UXO	Unexploded Ordnance
V Weapons	*Vergeltungswaffe* – Vengeance Weapons
WD	War Department
WWI	World War One
WWII	World War Two

EXECUTIVE SUMMARY

Study Site

The Client has defined the Study Site as "Coriander Avenue, London, E14 2AA". The Site is located at NGR 538630, 181090.

Risk Level

VERY HIGH

Potential Threat Sources

Given the types of UXO that might be present on-site, all types of aggressive intrusive engineering activities may generate a significant risk pathway.

Risk Pathway

Given the types of UXO that might be present on-site, all types of aggressive intrusive engineering activities may generate a significant risk pathway.

Key Findings

During WWII, the Study Site was situated within *Poplar Metropolitan Borough,* which recorded 80 HE bomb strikes per 100 hectares, a very high level of bombing. However, given that the Site was situated within a primary bombing target during WWII, the localised bombing density may in fact have been much greater.

Luftwaffe aerial reconnaissance photography associated with the Site identified port installations (located on-site and 400m to the south-west) and gas works (located 240m to the north) as primary bombing targets. In addition, wharves (located 190m to the east, 335m to the north and 410m to the north-east) and a railway station (located 355m to the south-west) may have been considered secondary bombing targets.

ARP records associated with the Site identified three HE bomb strikes on-site and a further five within 70m; the closest being 30m to the east. In addition, two *V1* strikes were identified 125m to the north and 145m to the west and one *V2* strike located 105m to the north-west.

LCC bomb damage mapping associated with the Site identified "total destruction", "damage beyond repair", "serious damage; doubtful if repairable", "serious damage but repairable at cost", "general blast damage; minor in nature" and "blast damage; minor in nature" on-site. In addition, the immediate vicinity sustained a similar magnitude of damage.

Pre-WWII mapping (1938) and aerial photography (1945) show that the Study Site was located within a large industrial docklands area, with the Site itself consisting of *East India Docks,* industrial buildings and residential properties. As a result, it is possible that the docklands authorities inspected the Site for UXB entry holes following any raids. In addition, as the Site consisted of residential properties and industrial facilities, it is likely that a local civilian or employee would have observed and reported any UXB entry holes within the Site, which would have been dealt with at the time. However, given that bomb damage was recorded on-site, it is possible that bomb damage debris may have concealed a UXB entry hole and therefore, it may have gone unnoticed. In addition, UXBs within water would likely have gone unnoticed.

The Site has undergone significant post-war redevelopment with the reclamation of land from the *East India Dock* in the early 1990's. In addition, various structures and residential properties have been demolished and redeveloped on-site. Consequently, it is considered likely that any UXO within the structural foundations of post-war buildings would have been discovered and removed. Given the Site was subjected to bombing, the following risk mitigation measures are recommended as a minimum, in order to reduce risks ALARP, during intrusive works in all previously undisturbed ground i.e. that which has not previously been excavated, probed, drilled or otherwise intrusively disturbed since it had potentially become contaminated with UXO.

EXECUTIVE SUMMARY (…continued)

Recommended Risk Mitigation

All Groundworks in All Areas:

1. Operational UXO Emergency Response Plan; appropriate Site Management documentation should be held on Site to guide and plan for the actions which should be undertaken in the event of a suspected or confirmed UXO discovery (this plan can be supplied by *6 Alpha*);

2. UXO Safety & Awareness Briefings; the briefings are essential when there is a possibility of an-UXO / UXB encounter and are a vital part of the general safety requirement. All personnel working on the Site should receive a briefing on the identification of an UXO / UXB, what actions they should take to keep people and equipment away from such a hazard and to alert Site management. Information concerning the nature of the UXO / UXB threat should be held in the Site office and displayed for general information on notice boards, both for reference and as a reminder for ground workers. The Safety & Awareness briefing is an essential part of the *Health & Safety Plan* for the Site and helps to evidence conformity with the principles laid down in the *CDM* regulations 2015 (this briefing can be delivered directly, or in some cases remotely, by *6 Alpha*).

Trial Pits and Excavations into Previously Undisturbed Ground:

3. Non-intrusive UXO Survey and/or EOD Banksman Support; Where 'open' intrusive works into previously undisturbed ground are proposed and where the extent is considered to be within the capabilities of non-intrusive UXO survey equipment and implementation of this is assessed as likely to prove effective, a non-intrusive geophysical UXO survey should be trialed and, if it proves successful, should be employed to survey site-wide, or in specific areas where 'open' intrusive works are to be implemented to identify for signs of sub-surface anomalies which may model as the target UXO in advance of said works. If the survey proves partially or wholly ineffective, an EOD Engineer should be present in the UXO Banksman role to monitor ongoing 'open' intrusive works to identify any suspicious items that may be UXB or UXO related (this service can be provided by *6 Alpha*).

N.B. A supervised Site scrape may be required in advance of the NI UXO survey to remove any shallow buried ferrous metal contamination that may adversely affect the survey results.

Window Sampling, Piling and Boreholing into Previously Undisturbed Ground:

4. Intrusive UXO Survey; Where 'blind' intrusive works into previously undisturbed ground are proposed, an intrusive UXO survey (employing down-hole magnetometer or MagCone techniques) is strongly recommended. Such a survey should extend to the *assessed average bomb penetration depth* or to the maximum depth of the works, whichever is encountered first, or until geology is encountered through which it is assessed a UXB would not penetrate, to identify for signs of sub-surface anomalies which may model as the target UXO in advance of said works. (this service can be provided by *6 Alpha*).

For further information, please contact Envirocheck:

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Email: customerservice@envirocheck.co.uk

ASSESSMENT METHODOLOGY

Approach

6 Alpha Associates is an independent, specialist risk management consultancy practice, which has assessed the risk of encountering UXO (as well as buried bulk high explosives) at this Site, by employing a process advocated for this purpose by *CIRIA*. The *CIRIA* guide for managing UXO risks in the construction industry (C681) not only represents best practice but has also been endorsed by the *HSE*. Any risk mitigation solution is recommended *only* because it delivers the Client a risk reduced to ALARP at best value.

UXO hazards can be identified through the investigation of local and national archives associated with the Site, *MoD* archives, local historical sources, historical mapping as well as contemporaneous aerial photography (if it is available). Hazards will have only been recorded if there is specific information that could reasonably place them within the boundaries of the Site. The amalgamation of information is then assessed to enable the researcher to provide relevant and accurate risk mitigation practices.

The assessment of UXO risk is a measure of *probability of encounter* and *consequence of encounter*; the former being a function of the identified hazard and proposed development methodology; the latter being a function of the type of hazard and the proximity of personnel (and/or other 'sensitive receptors', such as equipment) to the hazard, at the moment of encounter.

If UXO risks are identified, the methods of mitigation we have recommended are considered reasonably and sufficiently robust to reduce them to ALARP. We advocate the adoption of the legal ALARP principle because it is a key factor in efficiently and effectively ameliorating UXO risks. It also provides a ready means for assessing the Client's tolerability of UXO risk. In essence, the principle states that if the cost of reducing a risk significantly outweighs the benefit, then the risk may be considered tolerable. This does not mean that there is never a requirement for UXO risk mitigation, but that any mitigation must demonstrate that it is beneficial. Any additional mitigation that delivers diminishing benefits and that consume disproportionate time, money and effort are considered *de minimis* and thus unnecessary. Because of this principle, UXB and UXO risks will rarely be reduced to zero (nor need they be).

Important Notes

Key source material is referenced within this document, whilst secondary/anecdotal information may be available upon request.

Although this report is up to date and accurate at the time of writing, our databases are continually being populated as and when additional information becomes available. Nonetheless, *6 Alpha* have exercised all reasonable care, skill and due diligence in providing this service and producing this report.

The assessment levels are based upon our professional opinion and have been supported by our interpretation of historical records and third party data sources. Wherever possible, *6 Alpha* has sought to corroborate and to verify the accuracy of all data we have employed, but we are not accountable for any inherent errors that may be contained in third party data sets (e.g. *National Archive* or other library sources), and over which *6 Alpha* cannot exercise control.

STAGE ONE – SITE LOCATION AND DESCRIPTION

Study Site

The Client has defined the Study Site as "Coriander Avenue, London, E14 2AA". The Site is located at NGR 538630, 181090. The Site location and Site boundary are presented at *Figures 1* and *2* respectively.

Location Description

The Study Site is situated within *Poplar Metropolitan Borough* and covers an area of approximately 3 hectares (ha).

Furthermore, the Site is bounded by:

- North: Residential properties and *Blair Street;*
- East: *A13* and office blocks*;*
- South: Office blocks and *Saffron Avenue;*
- West: *A13* and office blocks.

Aerial Photography (Current) (*Figure 3*)

Current aerial photography corroborates the information above and shows that the Site is situated within a densely developed urban area.

Proposed Works

The Client has described the following:

- Ground Investigations: Shallow Trial Pit up to 1m below ground level.
- Window Sampling up to 1m below ground level.
- Deep Bulk Excavation greater than 2m below ground level.
- Borehole Depth: Boreholes to 65m below surface.
- Piling Work: Piles likely to be up to 1.2m diameter and up to 60m long.
- Intrusive Work: six boreholes to 65m below surface. Plus ten window sample holes to 5m below surface.
- Excavation Depth: Typically, between 1m and 2m, locally as deep at 4m.

Ground Conditions

It is important to establish the specific ground conditions in order to determine the maximum *German* UXB penetration depth as well as the potential for other types of munitions to be buried.

If the Site investigations and/or construction methodologies change, and/or if a specific methodology is to be employed, and/or if the scope of work is focused upon a specific part of the Site, then *6 Alpha* are to be informed so that the prospective UXO risks and the associated risk mitigation methodology might be re-assessed. Certain ground conditions may also constrain certain types of UXO risk mitigative works e.g. magnetometer survey is adversely affected in mineralised and made ground.

The Client has described the ground conditions as follows:

- Ground Conditions: Made ground to 5mbgl,
- Alluvium to 11mbgl,
- London Clay to 25mbgl,
- Harwich formation over Lambeth Group to 42mbgl,
- Thanet Sand to 58mbgl,
- Chalk bedrock.

It is important to establish the provenance of made ground, where this is recorded as being part of the site ground make-up, in order to accurately determine the ground levels at the time when the site may have become potentially contaminated with UXO and so as to accurately determine the average / maximum bomb penetration depths and make appropriate recommendations aimed at reducing the risk to ALARP.

STAGE ONE – SITE LOCATION AND DESCRIPTION (…continued)

Ground Conditions

BGS borehole log ‘TQ38SE7920 – Saffron Avenue East India Dock Blackwall 2B’ (located in the Site’s central sector), recorded the following strata:

Depth bgl (m)	Strata	Description
0.0m to 0.50m	Made Ground	Compact brown clay, gravel, fragmented brick and concrete materials.
0.50m to 7.40m	Made Ground	Loose to medium dense brown/black clay, gravel, fragmented brick and concrete, with dark grey/black silty, becoming darker and moist below 2.00m. Waste timber, metal and creosote type odour below 4.00m.
7.40m to 8.90m	Made Ground	Very dense/hard brick and concrete materials.
8.90m to 11.60m	Made Ground	Medium dense to dense clay, brick, concrete, metal, timber and gravel materials.
11.60m to 23.80m	London Clay	Firm to stiff, grey slightly sandy clay. Some silt and sand lenses. (London Clay).

STAGE TWO – REVIEW OF HISTORICAL DATASETS

Sources of Information Consulted

The following primary information sources have been used in order to establish the background UXO threat:

1. *6 Alpha*'s *Azimuth* Database;
2. *Home Office* WWII Bomb Census Maps;
3. WWII and post-WWII aerial photography;
4. Official Abandoned Bomb Register;
5. *LCC* Bomb Damage maps;
6. Information gathered from the *National Archives* at *Kew*;
7. Historic UXO information provided by *33 Engineer Regiment* (Explosive Ordnance Disposal) at *Carver Barracks, Wimbish*.

Potential Sources of UXO Contamination

In general, there are several activities that might contaminate a site with UXO but the three most common ways are: legacy munitions from military training/exercises; deliberate or accidental dumping (AXO) and ordnance resulting from war fighting activities (also known as the Explosive Remnants of War (ERW)).

During WWII, the *Luftwaffe* undertook bombing campaigns all over the *UK*. The most common type of UXO discovered today is the aerially delivered high explosive (HE) bomb, which are comparatively thick-skinned and dropped from enemy aircraft. If the bomb did not detonate when it was dropped, the force of impact enabled the UXO to penetrate the ground, often leaving behind it a UXB entry hole. These entry holes were not always apparent and some went unreported, leaving the bomb buried and unrecorded. More rarely, additional forms of *German* UXO are occasionally discovered including *inter alia V1* and *V2* rockets, Incendiary Bombs (IBs), and Anti-personnel (AP) bomblets.

Although the *Luftwaffe* had designated primary bombing targets across the *UK*, their high-altitude night bombing was not accurate. As a result, thousands of buildings were damaged and civilian fatalities were common. Bombs were also jettisoned over opportunistic targets and residential areas were sometimes struck.

As the threat of invasion lingered over *Britain* during WWII, defensive actions were undertaken. The *British* and *Allied Forces* requisitioned large areas of land for military training and bomb storage (including HE bombs, naval shells, artillery and tank projectiles, explosives, LSA and SAA). Thousands of tonnes of these munitions were used for the *Allied Forces* weapon testing and military training alone. It has been estimated that at least 20 per cent of the *UK*'s land has been used for military training at some point.

The best practice guide for dealing with your UXO risks on land (CIRIA publication C681) suggests that approximately 10 per cent of all munitions deployed failed to function as designed. ERW are therefore, still commonly encountered, especially whist undertaking construction and civil engineering groundwork.

Furthermore, in exceptional circumstances, UXO is discovered unexpectedly and without apparent rational explanation. There are several ways this might occur:

- When *Luftwaffe* aircraft wished to swiftly escape e.g. from an aerial attack, they would jettison some or all of their bombs and flee. This is commonly referred to as *tip and run* and it has resulted in bombs being found in unexpected locations;
- Transportation of aggregate containing munitions to an area that was previously free of UXO, usually related to construction activities employing material dredged from a contaminated offshore borrow site;
- Poor precision during targeting (due to high altitude night bombing and/or poor visibility) resulted in bombs landing off target, but within the surrounding area.
- *British* decoy sites were also constructed to deliberately cause incorrect targeting. For obvious reasons, such sites were often built in remote and uninhabited areas.

Site History

From an analysis of the CS and OS historical mapping associated with the Site, the following Site history can be deduced:

Year	On-Site	Vicinity
1896 CS Map	The Study Site consisted of *East India Dock* in the southern sector, industrial buildings in the central sector and residential houses in the north.	The Site was situated within a developed urban area of London.
1916 CS Map	Four jetties were removed from the north quay of *East India Dock.* Industrial buildings were demolished on-site and a tramway and two transit sheds were developed on-site.	Changes were not recorded in the vicinity.
1938 CS Map	Changes were not recorded at the Study Site.	Changes were not recorded in the vicinity.
1949-1950 OS Map	Residential properties were demolished from the northern sector and two “ruins” were located on-site.	“Ruins” and bomb clearance areas were identified to the north of the Study Site.
1964 OS Map	*Jones House, Adams House* and a depot were developed on-site in the northern sector.	The area to the north slowly began to be redeveloped.
1982 OS Map	The depot on-site in the north-eastern sector was demolished and a linear structure was developed in replacement.	Changes were not recorded in the vicinity.
1992 OS Map	Land was reclaimed in *East India Dock.* The transit sheds were demolished, and residential properties were developed in the northern sector.	Reclaimed land was developed south of the Study Site.
2006 OS Map	A hotel was developed in the central sector, three structures in the southern, western and eastern sector and additional residential properties in the northern sector.	The surrounding area became developed.
2018 OS Map	A structure was developed in the south-eastern sector.	Changes were not recorded in the vicinity.

Aerial Photography (1945) (*Figure 4*)

The aerial photography (1945) associated with the Site shows a dock and industrial buildings were located on-site.

WWII Bombing of *London*

The most intensive period of bombing over *London* was the nine months between October 1940 and May 1941, known as ‘The Blitz’. During this period, the *Luftwaffe* attempted to overwhelm *Britain’s* air defences, destroy key military and industrial facilities, as well as logistical capabilities, prior to invasion.

A total of 18,000 tons of bombs were dropped on *London* between 1940 and 1945. Many residential, commercial and industrial buildings were targeted during air raids and sustained large scale damage. Public services were also affected, with gas, electricity and water supplies often cut-off following damage to either the installations themselves or to the supply infrastructure. In addition, thousands of civilians were killed and injured, and many were forced to evacuate as their homes were destroyed.

WWII Luftwaffe Bombing Targets (*Figure 5A, 5B & 5C)*

Prior to WWII, the *Luftwaffe* conducted numerous aerial photographic reconnaissance missions over *Britain*, recording key military, industrial and commercial facilities for attack, in the event of war. In addition, logistics infrastructure and public services, such as railways, canals, power stations, reservoirs, water and gas works were also considered viable bombing targets.

Luftwaffe aerial reconnaissance photography associated with the Site identified port installations (located on-site and 400m to the south-west) and gas works (located 240m to the north) as primary bombing targets. In addition, wharves (located 190m to the east, 335m to the north and 410m to the north-east) and a railway station (located 355m to the south-west) may have been considered secondary bombing targets.

WWII HE Bomb Strikes (*Figure 6*)

During WWII, ARP wardens compiled detailed logs of bomb strikes across their respective districts. ARP records associated with the Site identified three HE bomb strikes on-site and a further five; 30m to the east, 60m to the east, 65m to the north-west, 65m to the south-west and 70m to the north. In addition, two V1 strikes were identified 125m to the north and 145m to the west and one V2 strike located 105m to the north-west. Furthermore, whilst IBs may have fallen within the Study Site, they fell in such large numbers that accurate record keeping was either non-existent or perfunctory therefore, their prospective presence cannot be either corroborated or discounted.

In addition to IBs and HE bomb strikes, during the latter part of the war when aerial bombing had significantly declined, the main threat came from *V* type weapons. The first recorded *V1* strike on *London* was on the 13th June 1944, with the first recorded *V2* strike on *London* on the 8th September 1944. *V1* and *V2* rockets were thin-skinned, unmanned and inaccurate weapons. Despite this, there is no evidence to suggest that the Site (or its immediate vicinity) was subjected to rockets strikes during WWII.

The potential penetration depth of an UXB was dependent on a number of factors including but not restricted to those prior to striking the ground e.g. velocity and orientation of the UXB which in turn will be influenced on factors such as the release altitude from the aircraft and encounters with infrastructure during its fall; those encountered at the point of impact i.e. was the impact on concrete, grass, water etc and finally, the below ground level conditions which were encountered such as infrastructure e.g. services, basements, foundations, and geology e.g. made ground, clay, sand, etc. Further, as the UXB penetrated the ground, it’s velocity naturally slowed where, it either came to an abrupt stop e.g. against foundations or would continue for 10’s of feet along a route of least resistance which often resulted in a curving of the trajectory back towards the surface. This is known as the “J Curve” effect and often resulted in a considerable horizontal off-set from the point of entry. This is often the reason why UXBs have been discovered against or under the foundations of buildings, which were present during WWII, or many meters from the point of impact.

WWII Bomb Damage (*Figure 7*)

LCC bomb damage mapping associated with the Site identified “total destruction”, “damage beyond repair”, “serious damage; doubtful if repairable”, “serious damage but repairable at cost”, “general blast damage; minor in nature” and “blast damage; minor in nature” on-site. In addition, the immediate vicinity sustained a similar magnitude of damage.

WWII HE Bomb Density (*Figure 8*)

The Study Site was located within *Poplar Metropolitan Borough,* which recorded 80 HE bombs per 100 hectares, a very high level of bombing. However, given that the Site was situated within a primary bombing target during WWII, the localised bombing density may in fact have been much greater.

Abandoned Bombs

An examination of the official abandoned bomb records has not identified any abandoned bombs on-site or within 1,000m.

Records of WWII UXB Disposal Tasks

An examination of the civil defence records listing UXBs dealt with in the *Borough of Poplar* from 1940-45 has identified the following tasks within the Site's vicinity:

- One UXB removed from *Foresters Levens Wharf, Leven Road* (located approximately 385m to the north-north-west) on the 6th October 1940;
- One 250kg UXB removed from *The General Steam Navigation Company* (located approximately 415m to the south-east) on the 10th August 1945.

In addition, a further 16 UXB tasks were identified within 1,000m of the Site boundary.

Records of Post-WWII UXB Disposal Tasks

An examination of the post-WWII BDO tasks associated with the area has not identified any BDO operations within the Site itself, however the following tasks were undertaken in the area:

- The removal of one 50kg German bomb from the rear of *GPO, Stevenson Street, Canning Town* (located approximately 710m to the north-east) on the 4th November 1974;
- The disposal of one 250kg bomb from *Aspen Way/Billingsate Road, West India Dock Road* (located approximately 930m to the south-west on the 11th January 1989.

WWII Site Use

The CS mapping prior to WWII (1938), shows that the Study Site was located in a large industrial docklands area, with the Site itself consisting of *East India Docks,* industrial buildings and residential properties. As a result, it is possible that the docklands authorities inspected the Site for UXB entry holes following any raids. In addition, as the Site consisted of residential properties and industrial facilities, it is likely that a local civilian or employee would have observed and reported any UXB entry holes within the Site, which would have been dealt with at the time. However, given that bomb damage was recorded on-site, it is possible that bomb damage debris may have concealed a UXB entry hole and therefore, it may have gone unnoticed. In addition, UXB that fell within the waters of the dock were unlikely to have been reported.

Sources of UXO Contamination

The most likely source of UXO contamination is from *German* aerially delivered ordnance, which ranges from small IBs through to large HE bombs (the latter forms the principal threat). Additional residual contamination may be present from *British* AAA projectiles (which were used to defend the UK against *German* bombing raids).

STAGE THREE – DATA ANALYSIS

Variable	Result	Comment
Was the area considered to be a primary bombing target?	✓	Port installations (on-site and 400m south-west) and gas works (240m north) were identified as primary bombing targets.
Was the Site or the immediate area bombed during WWII?	✓	Three HE bomb strikes were identified on-site and a further five were identified within 70m; the closest being 30m to the east. In addition, one *V2* was identified 105m to the north-west and two *V1*s identified 125m to the north and 145m to the west.
Did the Site or the immediate area experience bomb damage?	✓	*LCC* bomb damage mapping identified bomb damage ranging from “total destruction” to “blast damage; minor in nature” on-site. In addition, the immediate vicinity sustained a similar magnitude of damage.
Was the ground undeveloped during WWII?	✗	The Site consisted of *East India Docks* to the south, industrial facilities in the central sector and residential properties in the northern sector.
Would the footfall have been high in the area?	✓	Given that residential housing and industrial docklands were located on-site, it is likely that footfall would have been high.
Would a UXB entry hole have been observed during WWII?	✗	Given that bomb damage was recorded on-site, it is possible that bomb damage debris may have concealed a UXB entry hole and therefore it may have gone unnoticed. In addition, UXBs within the water of the docks were unlikely to have been noted.
Have military personnel ever occupied the Site?	✗	No military facilities were identified within 1,000m.
Would munitions have been manufactured, stored and/or fired from the Site?	✗	There is no evidence to suggest munitions were located or fired from this Site.
Would previous intrusive works have removed the potential for UXO to be present?	✗	The Site has been subjected to significant redevelopment, therefore it is likely that any UXO within the structural foundations of post-war buildings would have been discovered and removed. Although this is not considered to be Site wide.
Are proposed intrusive works likely to extend into previously undisturbed ground?	✓	Large areas of the Site have undergone significant redevelopment since WWII and therefore all proposed works will extend into previously undisturbed ground.
Is there potential for an unplanned encounter with UXO to occur during proposed intrusive works?	✓	Given that the Site was subject to bomb strikes and significant bomb damage, it is considered possible for an unplanned encounter with UXO to occur.
Does the probability of UXO vary across the Site?	✗	The probability of discovering UXO within the structural foundations of post-war buildings is considered to be homogenous across the entire Site.

STAGE FOUR – RISK ASSESSMENT

Threat Items

The most probable UXO threat items are *German* HE bombs, whilst IBs and *British* AAA projectiles pose a residual threat. The consequences of initiating *German* HE bombs are more severe than initiating IBs or AAA projectiles, and thus they pose the greatest prospective risk to intrusive works.

Bomb Penetration Depth

Considering the ground conditions (highlighted in Stage 1), the average BPD for a 250kg *German* HE bomb within clays is assessed to be approximately 7m bgl beneath post-war infill, with the maximum BPD considered to be approximately 16m bgl. Although it is possible that the *Luftwaffe* deployed larger bombs in the area, their deployment was infrequent, and to use such larger (or the largest) bombs for BPD calculations are not justifiable on either technical or risk management grounds.

WWII *German* bombs have a greater penetration depth when compared to IBs and AAA projectiles, which are unlikely to be encountered at depths greater than 1m bgl. However, due to the “J Curve” and the potential for structures to impede the penetration into the ground, HE bombs have been discovered at much shallower depths than the average.

Risk Pathway

Given the types of UXO that might be present on-site, all types of aggressive intrusive engineering activities (i.e. investigative groundworks and construction methodologies) may generate a significant risk pathway. Whilst not all UXO encountered aggressively will initiate upon contact, such a discovery could lead to serious impact on the project especially in terms of critical injury to personnel, damage to equipment and project delay.

Prospective Consequences

Consequences of UXO initiation include:

1. Fatally injure personnel;
2. Severe damage to plant and equipment;
3. Deliver blast and fragmentation damage to nearby buildings;
4. Rupture and damage underground utilities/services.

Consequences of UXO discovery include:

1. Delay to the project and blight;
2. Disruption to local community/infrastructure;
3. The expenditure of additional risk mitigation resources and EOD clearance;
4. Incurring additional time and cost.

UXO RISK CALCULATION

Site Activities

Although there is some variation in the probability of encountering and initiating items of UXO when conducting different types of intrusive activities, a number of investigative and construction methodologies have been described for analysis at this Site. The consequences of initiating UXO vary greatly, depending upon, *inter alia* the mass of HE in the UXO and how aggressively it might be encountered. For this reason, *6 Alpha* has conducted separate risk rating calculations for each investigative and construction methodology that might be employed.

Risk Rating Calculation

6 Alpha’s Semi-Quantitative Risk Assessment assesses and rates the risks posed by the most probable threat items when conducting a number of different activities on the Site. Risk Rating is determined by calculating the probability of encountering UXO and the consequences of initiating it.

UXO Risk Calculation Table – All Areas

Activity	Threat Item	Probability (SH+EM=P)	Consequence (D+PSR=C)	Risk Rating (PXC=RR)
Trial Pits (1m bgl)	HE Bombs	3+2=5	3+3=6	5x6=30
	AAA Projectiles	1+2=3	3+1=4	3x4=12
	IBs	1+2=3	3+1=4	3x4=12
Window Sampling (1m bgl)	HE Bombs	3+2=5	3+2=5	5x5=25
	AAA Projectiles	1+2=3	3+1=4	3x4=12
	IBs	1+2=3	3+1=4	3x4=12
Boreholes (65m bgl)	HE Bombs	3+3=6	3+2=5	6x5=30
	AAA Projectiles	1+3=4	3+1=4	4x4=16
	IBs	1+3=4	3+1=4	4x4=16
Window Sampling Boreholes (5m bgl)	HE Bombs	3+3=6	3+2=5	6x5=30
	AAA Projectiles	1+3=4	3+1=4	4x4=16
	IBs	1+3=4	3+1=4	4x4=16
Bulk Excavations (> 2m bgl)	HE Bombs	3+2=5	3+3=6	5x6=30
	AAA Projectiles	1+2=3	3+1=4	3x4=12
	IBs	1+2=3	3+1=4	3x4=12
Excavations (4m bgl)	HE Bombs	3+2=5	3+3=6	5x6=30
	AAA Projectiles	1+2=3	3+1=4	3x4=12
	IBs	1+2=3	3+1=4	3x4=12
Piling (60m bgl)	HE Bombs	3+3=6	3+2=5	6x5=30
	AAA Projectiles	1+3=4	3+1=4	4x4=16
	IBs	1+3=4	3+1=4	4x4=16

Abbreviations – Site History (SH), Engineering Methodology (EM), Probability (P), Depth (D), Consequence (C), Proximity to Sensitive Receptors (PSR) and Risk Rating (RR).

STAGE FIVE – RECOMMENDED RISK MITIGATION MEASURES

Do the ground conditions support a geophysical UXO survey?

Non-Intrusive Methods of Mitigation – Magnetometer results may be affected by ferro-magnetic contamination due to previous construction activities and made ground within the Site.

Intrusive Methods of Mitigation – Intrusive magnetometry may be effective on this Site, prior to boreholing and piling especially. However, any ferrous metal/red brick contamination in made ground/old foundations may affect the detection capability of the UXB survey equipment, as it passes through the contaminated layer especially. Nonetheless, beyond the contaminated strata such a survey should prove effective.

Mitigation Measures to Reduce Risk to 'ALARP'

Activity	Risk Mitigation Measures	Final Risk Rating
All Activities in All Areas	1. **Operational UXO Emergency Response Plan;** appropriate Site Management documentation should be held on Site to guide and plan for the actions which should be undertaken in the event of a suspected or real UXO discovery (this plan can be supplied by *6 Alpha*); **2. UXO Safety & Awareness Briefings;** the briefings are essential when there is a possibility of explosive ordnance encounter and are a vital part of the general safety requirement. All personnel working on the Site should receive a briefing on the identification of a UXB, what actions they should take to keep people and equipment away from such a hazard and to alert Site management. Information concerning the nature of the UXB threat should be held in the Site office and displayed for general information on notice boards, both for reference and as a reminder for ground workers. The safety awareness briefing is an essential part of the *Health & Safety Plan* for the Site and helps to evidence conformity with the principles laid down in the *CDM* regulations 2015 (this brief can be delivered directly, or in some cases remotely, by *6 Alpha*).	**ALARP**
Trial Pits and Excavations in All Previously Undisturbed Areas	**3. Non-intrusive UXO Survey and/or EOD Banksman Support;** Where 'open' intrusive works into previously undisturbed ground are proposed and where the extent is considered to be within the capabilities of non-intrusive UXO survey equipment and implementation of this is assessed as likely to prove effective, a non-intrusive geophysical UXO survey should be trialed and, if it proves successful, should be employed to survey site-wide, or in specific areas where 'open' intrusive works are to be implemented to identify for signs of sub-surface anomalies which may model as the target UXO in advance of said works. If the survey proves partially or wholly ineffective, an EOD Engineer should be present in the UXO Banksman role to monitor ongoing 'open' intrusive works to identify any suspicious items that may be UXB or UXO related (this service can be provided by *6 Alpha*). **N.B. A supervised Site scrape may be required in advance of the NI UXO survey to remove any shallow buried ferrous metal contamination that may adversely affect the survey results.**	
Window Sampling, Piling and Boreholing in All Areas	**4. Intrusive UXO Survey;** Where 'blind' intrusive works into previously undisturbed ground are proposed, an intrusive UXO survey (employing down-hole magnetometer or MagCone techniques) is strongly recommended. Such a survey should extend to the *assessed average bomb penetration depth* or to the maximum depth of the works, whichever is encountered first, or until geology is encountered through which it is assessed a UXB would not penetrate, to identify for signs of sub-surface anomalies which may model as the target UXO in advance of said works. (this service can be provided by *6 Alpha*).	

This assessment has been conducted based on the information provided by the Client, should the proposed works change then *6 Alpha* should be re-engaged to refine this risk assessment

Report Figures

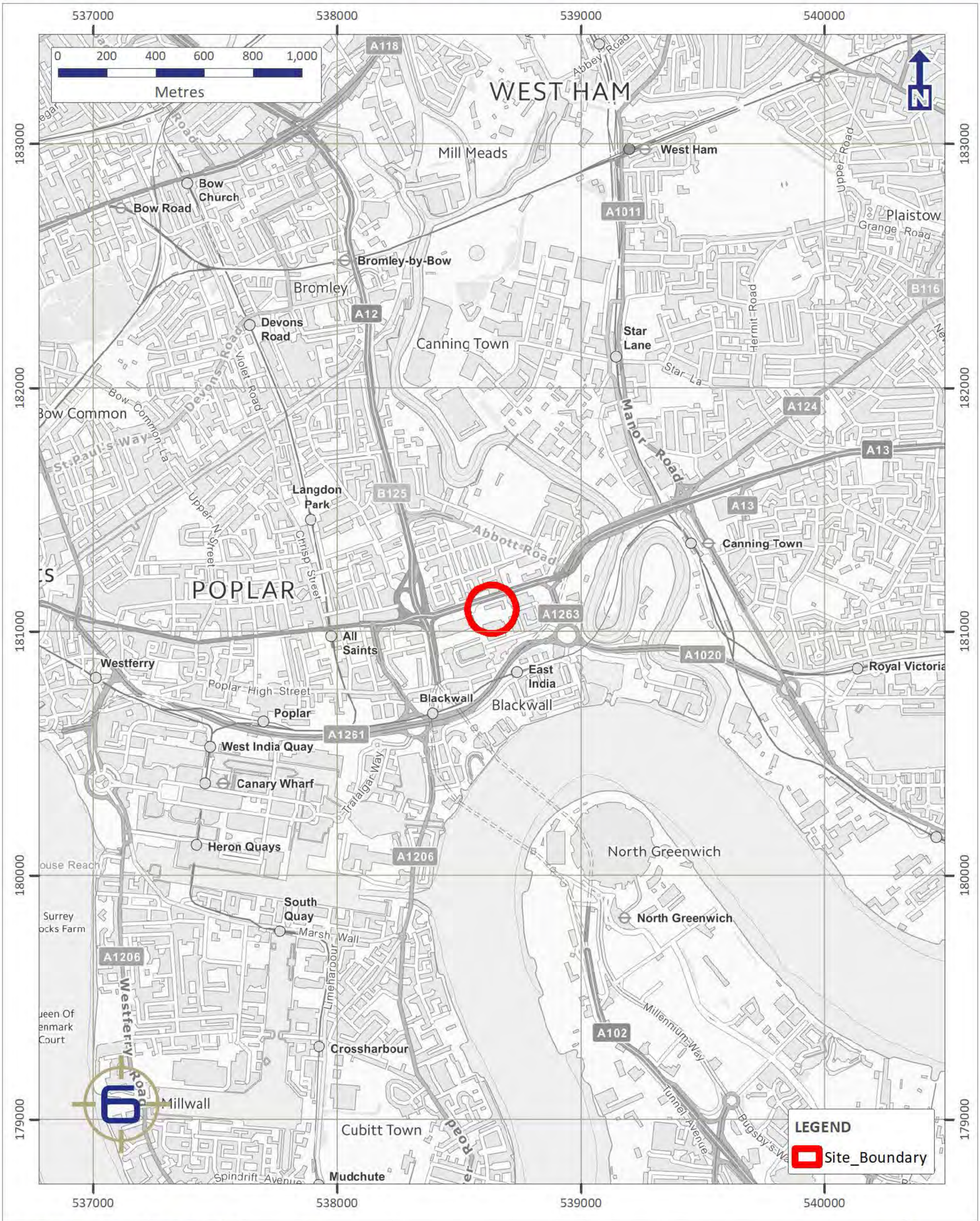
Figure One - Site Location

BRITISH NATIONAL GRID

CORIANDER AVENUE, LONDON, E14 2AA

Site Location

BOMB SEARCH
WWW.6ALPHA.COM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Court
A102
Westferry Road
Crossharbour
Tunnel Avenue
Millwall
Bugsby's Way
Cubitt Town
Road
Spindrift Avenue
Mudchute
LEGEND
🟥 Site_Boundary

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P6593	1	RG	CC	25 April 2018	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.

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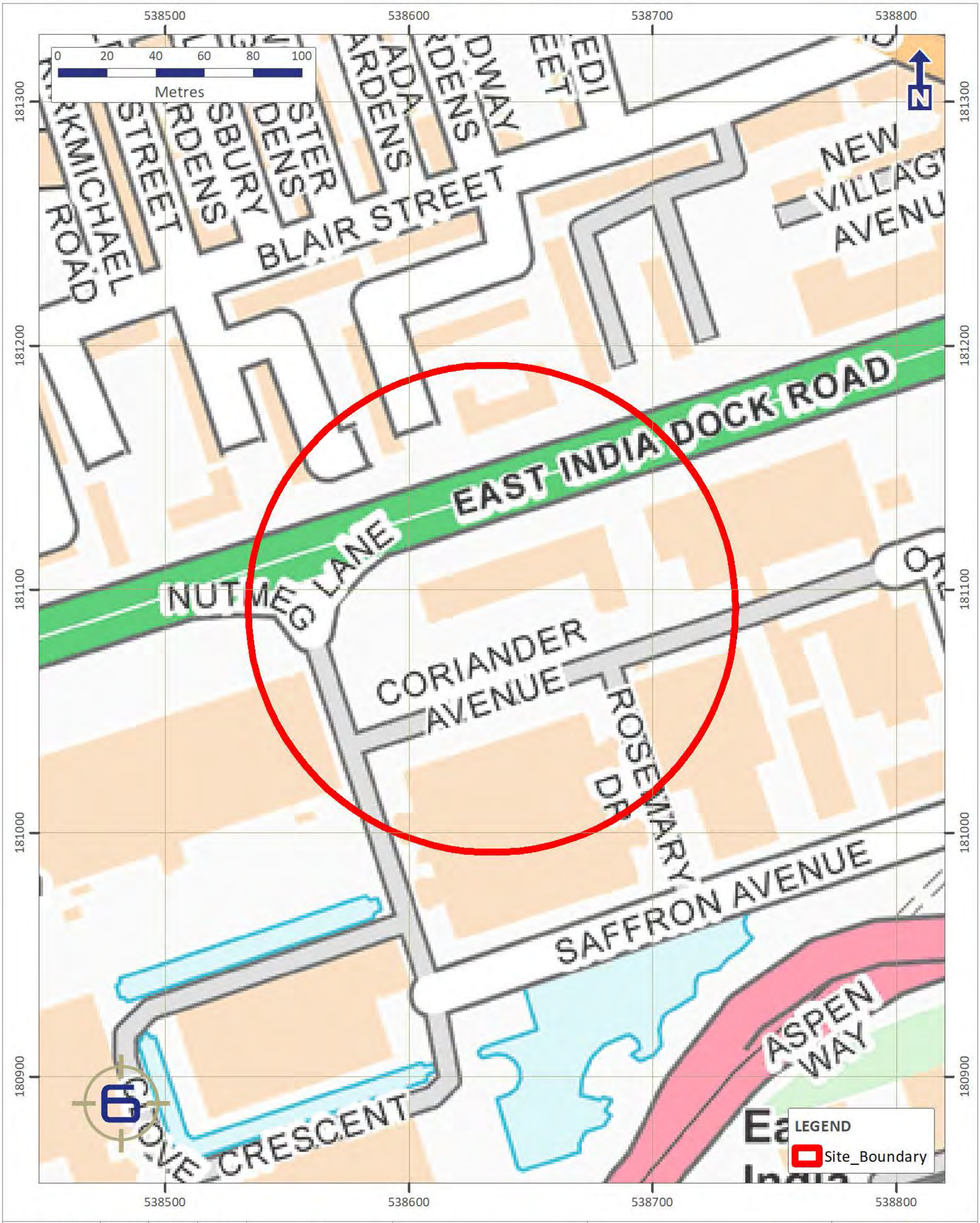
Figure Two - Site Boundary

BRITISH NATIONAL GRID

CORIANDER AVENUE, LONDON, E14 2AA

Site Boundary

BOMB SEARCH
WWW.6ALPHA.COM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ROSEMARY DR
SAFFRON AVENUE
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Figure Three - Aerial Photography (Current)

BRITISH NATIONAL GRID

CORIANDER AVENUE, LONDON, E14 2AA

Aerial Photography (Current)

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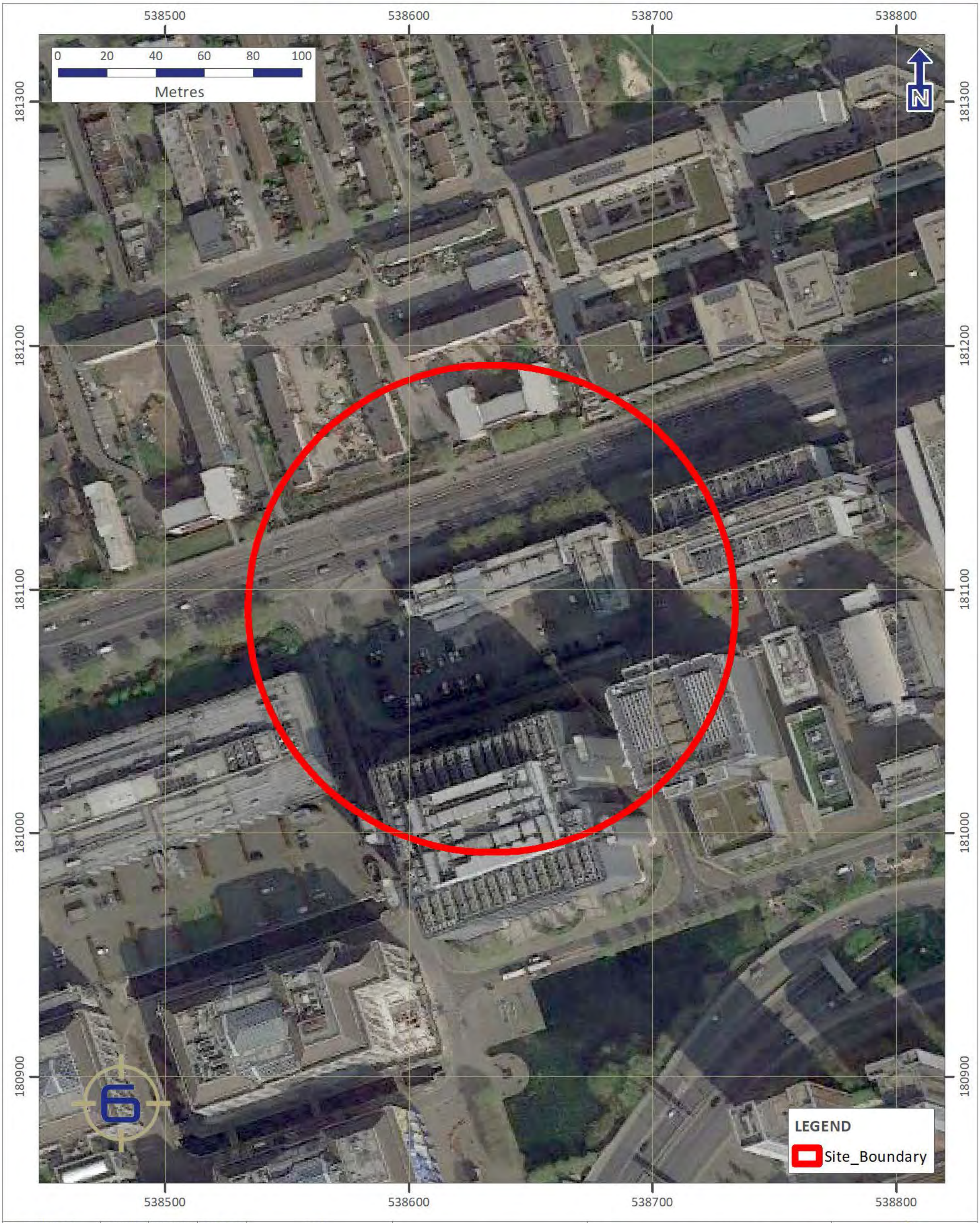
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PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE		
P6593	3	RG	CC	25 April 2018	Map data: Google	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.

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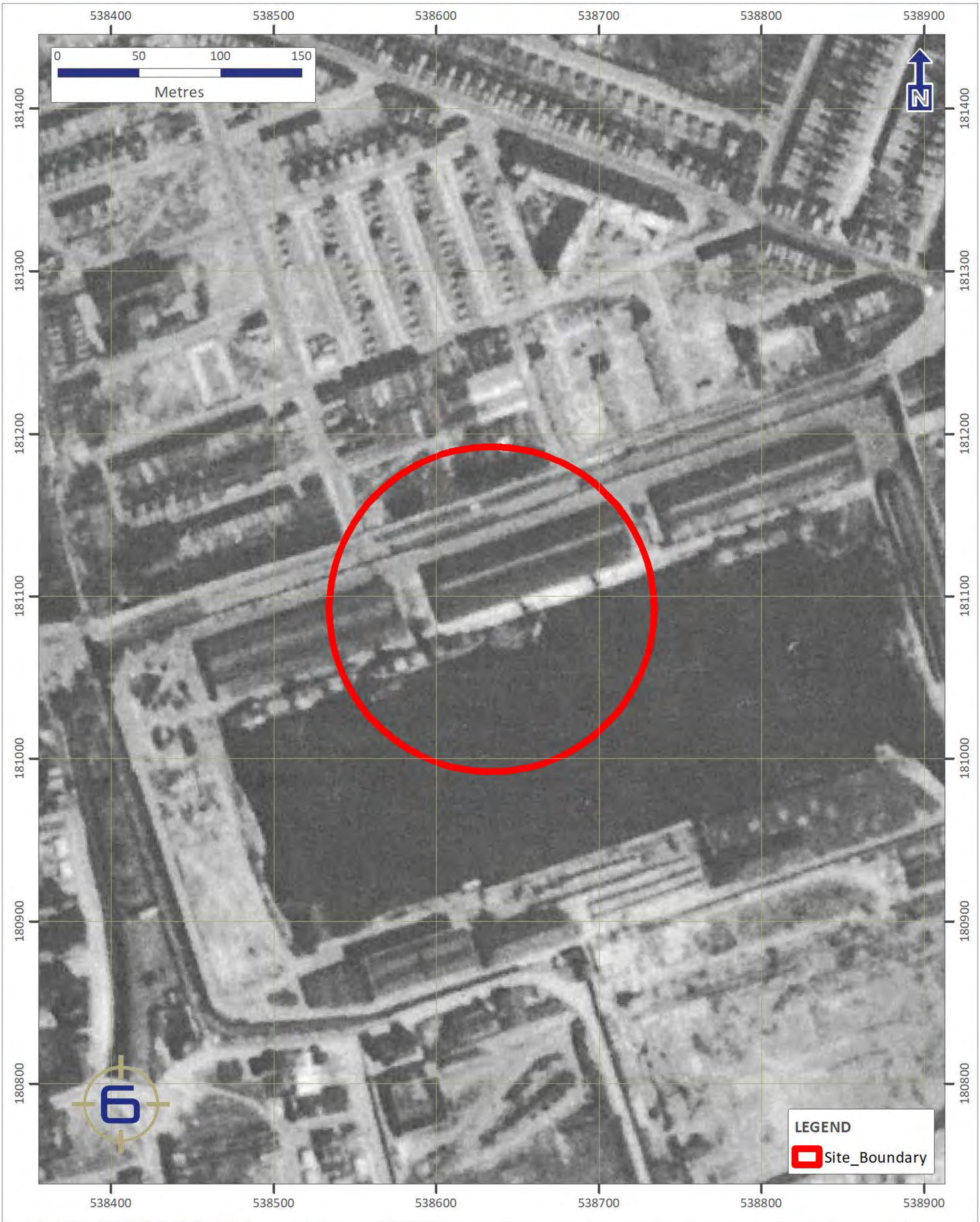
Figure Four - 1945 Aerial Photography

BRITISH NATIONAL GRID

CORIANDER AVENUE, LONDON, E14 2AA

Aerial Photography (1945)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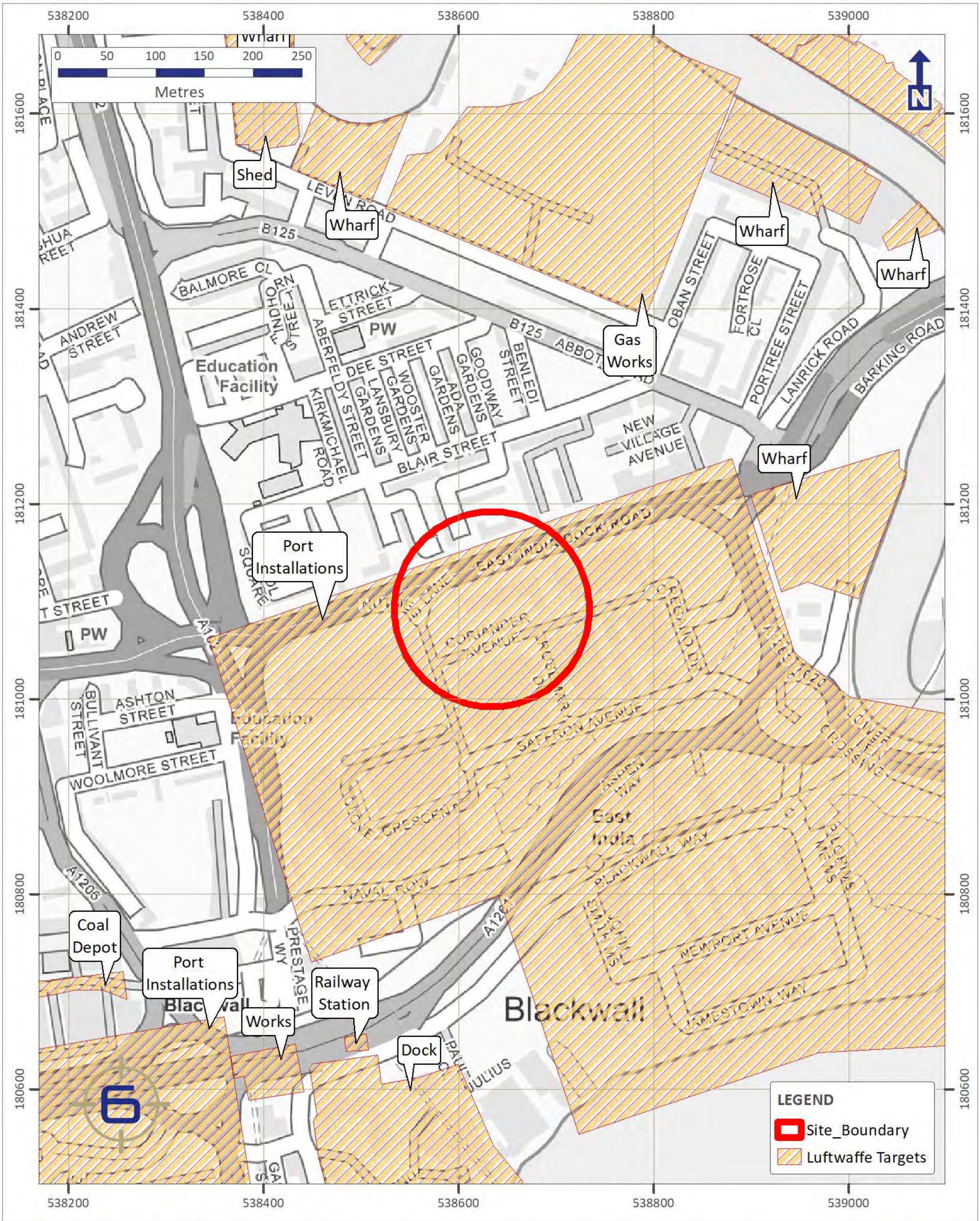
P6593	4	RG	CC	25 April 2018	Map data: Google, The GeoInformation Group	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.

Figure Five A - WWII Luftwaffe Bombing Targets

BRITISH NATIONAL GRID

CORIANDER AVENUE, LONDON, E14 2AA

WWII Luftwaffe Bombing Targets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Wharf
Wharf
Wharf
Gas Works
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Port Installations
Coal Depot
Port Installations
Works
Railway Station
Dock
Education Facility
Education Facility
PW
PW
Blackwall
East India
B125
A1206
LEVEN ROAD
BALMORE CL
ETTRICK STREET
ANDREW STREET
ABBOTT ROAD
DEE STREET
BLAIR STREET
ABERFELDY STREET
KIRKMICHAEL ROAD
LANSBURY GARDENS
WOOSTER GARDENS
ADA GARDENS
GOODWAY GARDENS
BENLEDI STREET
OBAN STREET
FORTROSE CL
PORTREE STREET
LANRICK ROAD
BARKING ROAD
NEW VILLAGE AVENUE
EAST INDIA DOCK ROAD
CORIANDER AVENUE
SAFFRON AVENUE
NAVAL ROW
BLACKWALL WAY
NEWPORT AVENUE
JAMESTOWN WAY
ASHTON STREET
BULLIVANT STREET
WOOLMORE STREET
PRESTAGE WAY
PAUL JULIUS
LEGEND
Site_Boundary
Luftwaffe Targets

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P6593	5A	RG	CC	25 April 2018

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Figure Five B - WWII Luftwaffe Aerial Photography

CORIANDER AVENUE, LONDON, E14 2AA

WWII Luftwaffe Aerial Photography

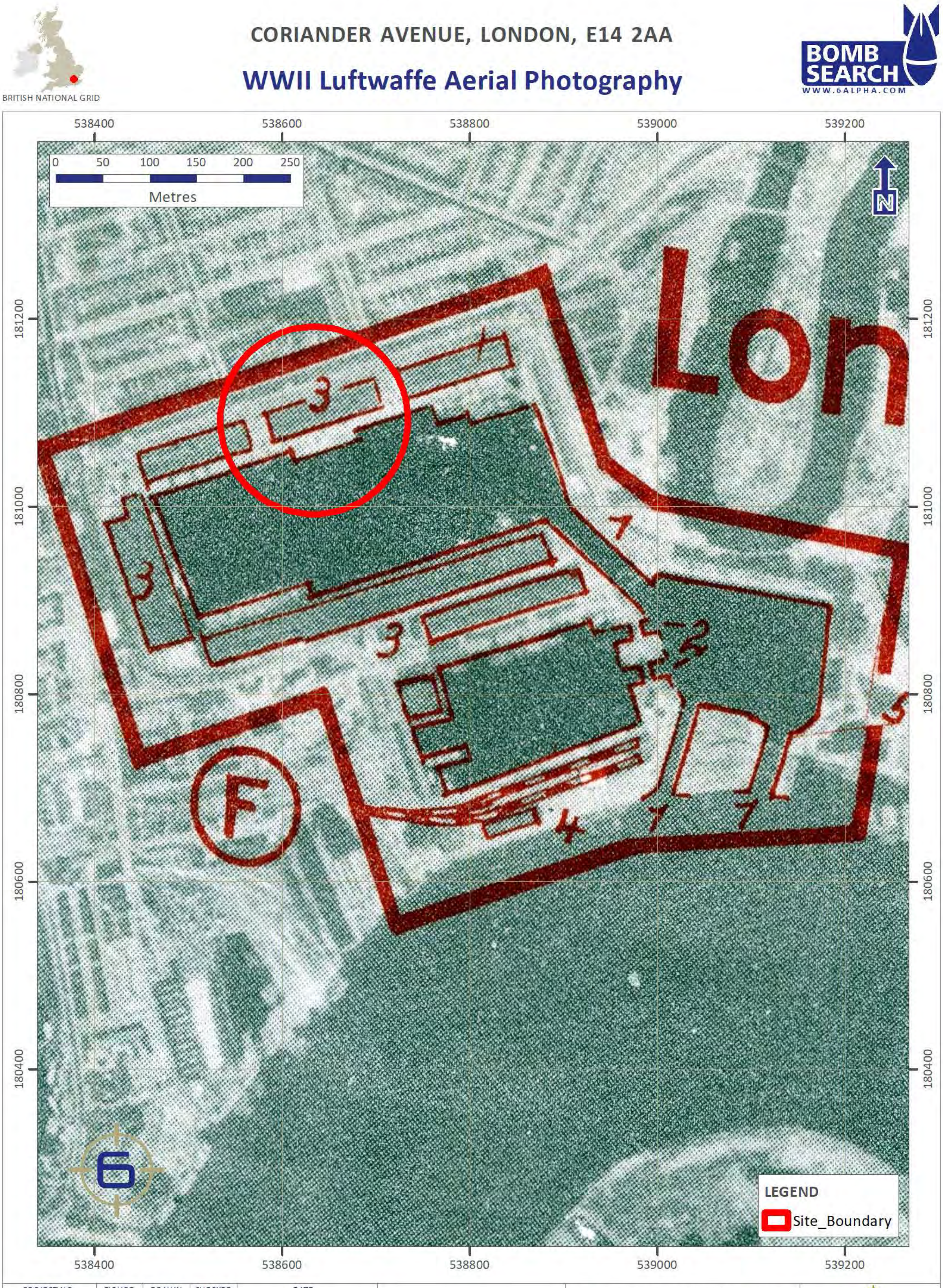
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Figure Five C - WWII Luftwaffe Aerial Photography

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WWII Luftwaffe Aerial Photography

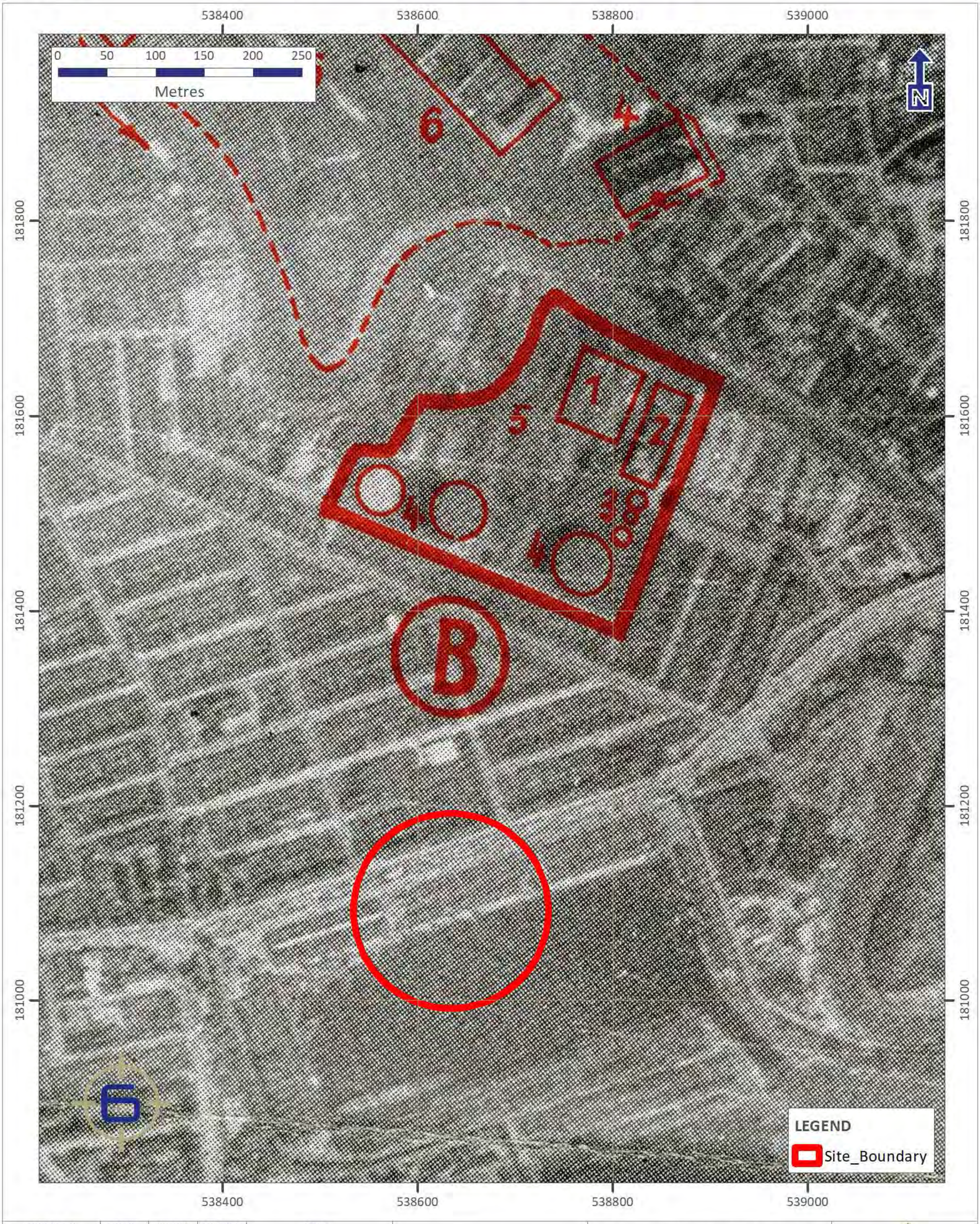
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Figure Six - WWII High Explosive Bomb Strikes

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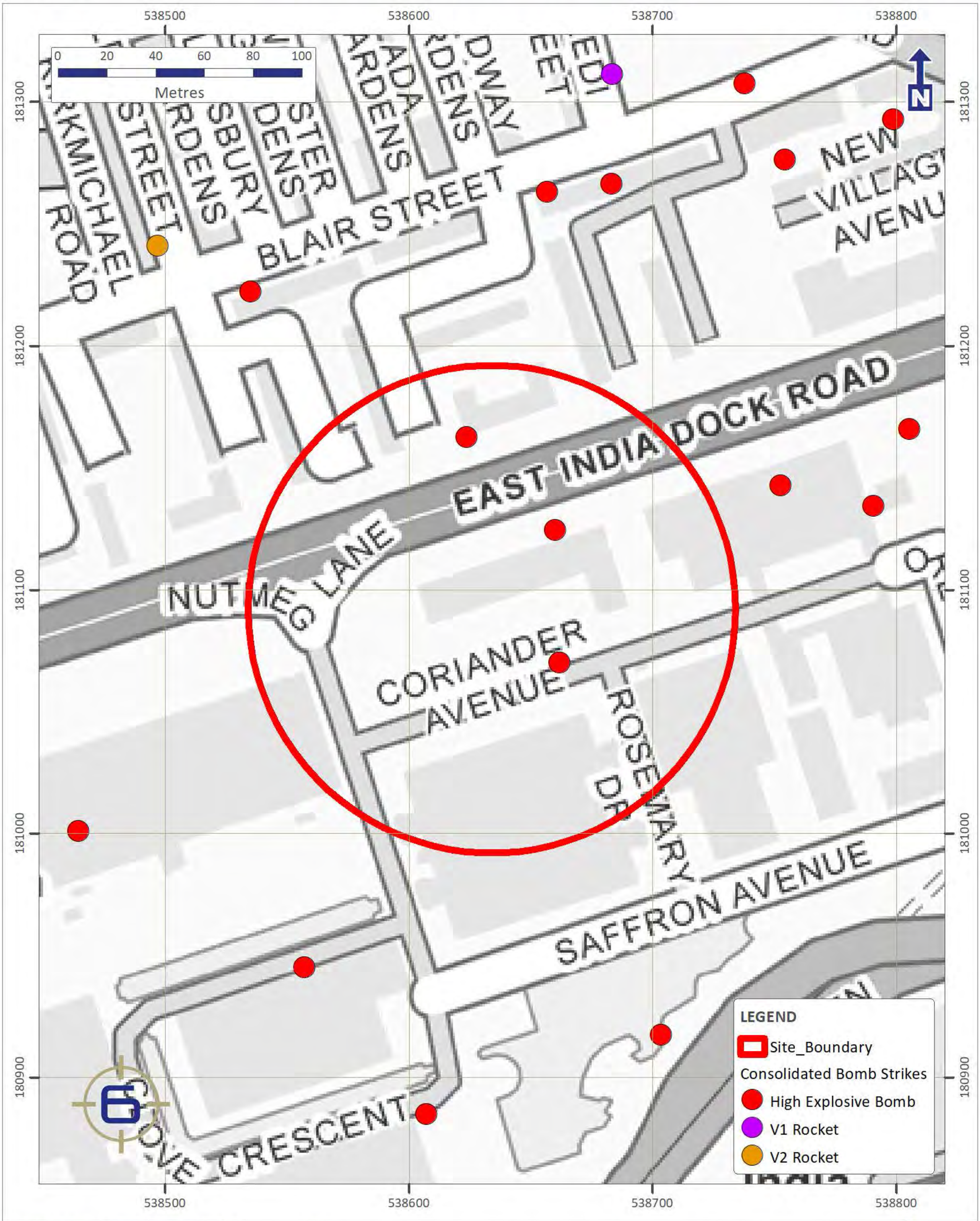
CORIANDER AVENUE, LONDON, E14 2AA

WWII Consolidated Bomb Strikes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Consolidated Bomb Strikes
High Explosive Bomb
V1 Rocket
V2 Rocket

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Figure Seven - London County Council WWII Bomb Damage Mapping

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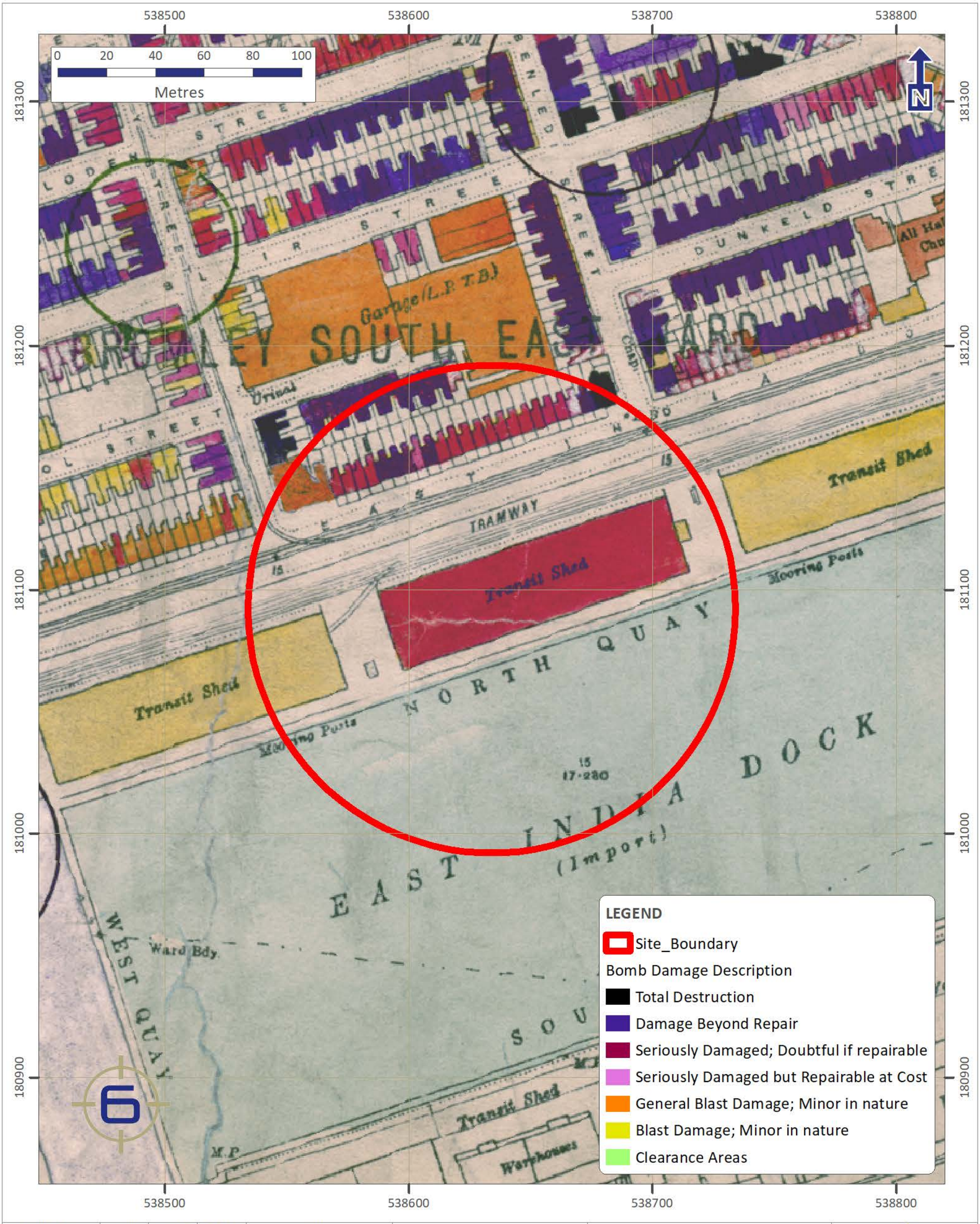
CORIANDER AVENUE, LONDON, E14 2AA

London County Council WWII Bomb Damage Map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Mooring Posts
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EAST INDIA DOCK (Import)
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Ward Bdy.
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Warehouses
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Site_Boundary
Bomb Damage Description
Total Destruction
Damage Beyond Repair
Seriously Damaged; Doubtful if repairable
Seriously Damaged but Repairable at Cost
General Blast Damage; Minor in nature
Blast Damage; Minor in nature
Clearance Areas

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P6593	7	RG	CC	25 April 2018	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.

Figure Eight - WWII High Explosive Bomb Density

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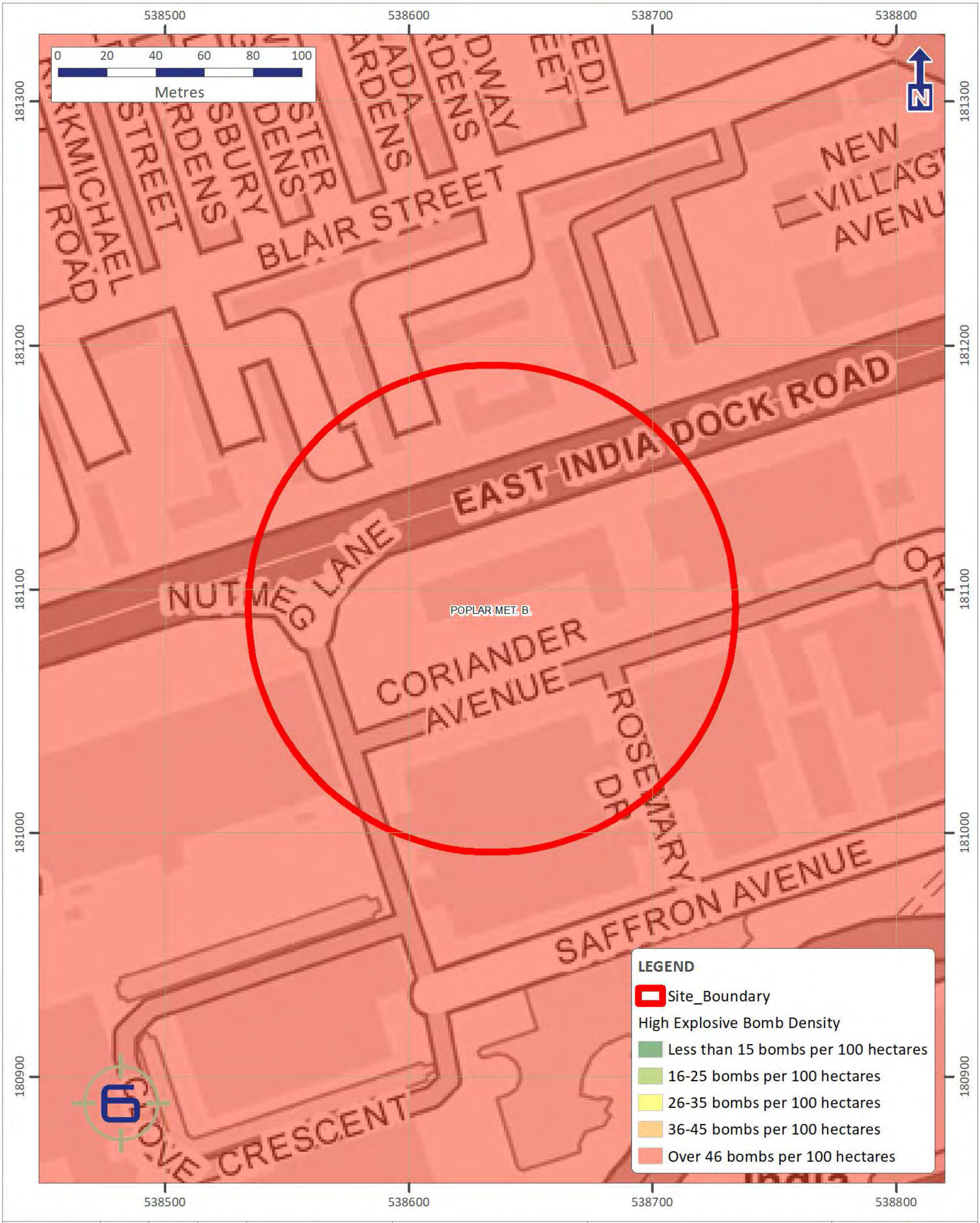
WWII High Explosive Bomb Density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SAFFRON AVENUE
BLAIR STREET
NEW VILLAGE AVENUE
CRESCENT

LEGEND

🟥 Site_Boundary

High Explosive Bomb Density

🟩	Less than 15 bombs per 100 hectares
🟩	16-25 bombs per 100 hectares
🟨	26-35 bombs per 100 hectares
🟧	36-45 bombs per 100 hectares
🟥	Over 46 bombs per 100 hectares

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
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Appendix E: Geoenvironmental Risk Assessment Framework and Methodology

Background Methodology

The contaminated land regime under Part II A of the Environmental Protection Act 1990 provides a risk-based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment. For 'contaminated land' to exist a valid contaminant linkage must be present; that is, there should be a source of contamination, a receptor where 'significant harm' or 'significant possibility of harm' may be caused; or pollution of controlled waters is being, or likely to be caused, and a pathway which connects the two. Should any element of this contaminant linkage not be present (or severed) then the land may not be regarded as contaminated land. The risk assessments undertaken in this report have been undertaken in accordance with current statutory guidance and good practice, including CIRIA C552 and the following tables present the definitions of the risk terms used.

Contamination Risk Rating Terminology - Consequence

Potential Consequence of Hazard – Receptor Linkage (in accordance with CIRIA C552)	
Severe	Short-term (acute) risk to human health likely to result in significant harm. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem.
Medium	Long-term (chronic) damage to human health. Pollution of sensitive water resources. A significant in change in a particular ecosystem, or organism forming part of such ecosystem. Damage to sensitive buildings and structures.
Mild	Slight short term health effects to humans. Slight pollution of non-sensitive water resources. Some change to population densities but with no negative effects on the function of the ecosystem. Slight damage to sensitive buildings, structures and services.
Minor (Negligible)	Non-permanent effects to human health (easily prevented by means such as personal protective clothing etc.). Easily repairable effects of damage to buildings, structures and services (e.g. discolouration of concrete).

Contamination Risk Rating Terminology – Probability

Classification of Probability of Hazard – Receptor Linkage (in accordance with CIRIA C552)	
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that and event is not inevitable, but possible in the short term and likely in the long term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.
Unlikely	There is pollution linkage but circumstances are such that it is improbably that an event would occur even in the very long term.

Matrix of Consequence versus Probability to determine Resultant Risk Classification

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High Likelihood**	**Very High Risk**	**High Risk**	**Moderate Risk**	**Moderate / Low Risk**
	Likely	**High Risk**	**Moderate Risk**	**Moderate / Low Risk**	**Low Risk**
	Low Likelihood	**Moderate Risk**	**Moderate / Low Risk**	**Low Risk**	**Very Low Risk**
	Unlikely	**Moderate / Low Risk**	**Low Risk**	**Very Low Risk**	**Very Low Risk**

Resultant Risk Classification Definitions

Potential Significance: Risk Classification (in accordance with CIRIA C552)	
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or, there is evidence that severe harm to a designated receptor is currently happening.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard at the site. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate Risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not undertaken already) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the long term.
Moderate / Low Risk	Not defined in context in CIRIA 552.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

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Appendix B Cundall Phase II Geotechnical and Geoenvironmental Assessment report, 24 October 2024

Environmental Permit Variation Application

Site Condition and Baseline Report

Telehouse International Corporation of Europe Limited

SLR Project No.: 410.066261.00001

Telehouse West 2

Phase II Geotechnical and Geoenvironmental Assessment

Telehouse International Corporation of Europe Limited

Job No:	1036281
Doc ref:	TW2001-CDL-TW2-XX-RP-GE-110004
Revision:	C01
Revision date:	24 October 2024

Project title	Telehouse West 2	**Job number**
Report title	Phase II Geotechnical and Geoenvironmental Assessment	1036281

Document revision history

Revision ref	Issue date	Purpose of issue / description of revision
C01	24 October 2024	Issued for Tender. Report was previously prepared and issued in 2020. The text within this report has not been updated to reflect the current site status

Document validation (latest issue)

09/10/2024
X
Principal author
Signed by: Bee, Lily

09/10/2024
X
Checked by
Signed by: Gary Kellett

09/10/2024
X
Verified by
Signed by: Gary Kellett

This document identifies Employers Requirements and must be read together with all other contract documents and may not specifically indicate everything that is required for the full completion of the works. Include for all elements, including temporary works, necessary for the construction commissioning, handover and operation of the building and associated systems.

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Executive Summary

The Development Site	The site forms a roughly rectangular shaped parcel of land (0.6 ha) located in the Docklands area of London. The site is currently occupied by an hotel with associated car parking, and it is proposed to redevelop the site with a multi-storey data centre and associated infrastructure.
Context	Cundall was commissioned by the Client to prepare and issue a Phase II Geotechnical and Geoenvironmental Assessment for the site based on an intrusive ground investigation in the context of the proposed development.
Ground Conditions	The site is located across the edge of a former dock that has now been infilled. Shallow ground conditions are different inside and outside the dock location. Ground conditions outside the area of infilled dock consist of the following downward sequence. Made ground – Ground level to 2m bgl. Kempton Park Gravel – 2m bgl to 12m bgl London Clay – 12m bgl to 24m bgl Harwich Formation – 24m bgl to 28m bgl Woolwich Formation – 28m bgl to 32m bgl Reading Formation – 32m bgl to 34m bgl Upnor Formation / Thanet Formation – 34m bgl to 55m bgl Chalk – from a depth of 55m bgl with the full thickness anticipated to be 100m thick. Within the area of infilled dock, made ground is recorded to extend to 11m bgl overlying London Clay.
Ground Gas Risk Assessment	Based on the preliminary results presented in Section 6.0, the site classifies as Characteristic Gassing Situation 2 (CS-2) under which scenario ground gas protection measures are required in accordance with CIRIAC665 / BS8485.
Ground Aggressivity	All buried concrete should be designed in accordance with BRE Special Digest 1:2005 together with the site specific guidance presented in Section 5.8 of this report.
Geoenvironmental Assessment	The site generally represents a moderate to high geoenvironmental risk. Risks to Controlled Waters are considered to be low and risks to buried concrete are moderate based on the geochemical testing of soils and require remedial action to mitigate the risk. Risks to human health are considered high and will require remedial action to be implemented as part of the development. A detailed site remediation and verification strategy is considered likely to be required for the scheme.
Preliminary Waste Classification (Soils)	The results of the preliminary assessments indicate two samples of the dock infill material classify as Hazardous waste with the remaining six samples of general made ground, two the four samples of dock infill material, two samples of alluvium and all three samples of natural sand and gravel classifying as Non-Hazardous waste. The preliminary WAC analysis classified three of the six samples (one sample of made ground, one sample of alluvial deposits and one sample of Kempton Park Gravel) as Inert Waste. A single sample of general made ground and a single sample of infilled dock material were classified as Stable-Non-Reactive Hazardous Waste and a single sample of the dock infill was classified as Hazardous Waste.
Foundation Considerations	Given the anticipated structural actions and the recorded ground conditions, piles are recommended for the proposed development design. It is recommended that specialist piling contractors are consulted to confirm the most appropriate pile type, taking account of other constraints such as noise and vibration during installation. A preliminary pile design for anticipated pile techniques is present in section 5 of this report.

Groundwater Conditions and Excavations	It is expected that shallow excavations in the made ground and natural soils will be achievable by means of normal hydraulic excavating plant. It is recommended that provision is made to allow for breaking out of hard standing or any buried structures / obstructions that may be encountered. It is advisable that an allowance should be made to provide for shoring of excavations in the made ground and natural granular deposits during construction to prevent collapse and overbreak. Based on site observations and monitoring it is expected that groundwater will be encountered within shallow excavations following periods of heavy or prolonged rainfall and provision for groundwater control during excavation works should be made.
Road Pavement Design	Based on the identified ground conditions and assuming all soft spots are removed, and the formation soils are proof rolled prior to construction a conservative CBR design value of 5% is recommended for road pavement design. The CBR design value should be confirmed by undertaking in situ CBR testing at formation level prior to construction. Any soft spots in the formation should be excavated to full depth and replaced with properly compacted granular fill.
Earthworks Considerations	It is anticipated that the proposed external levels will be similar to the existing levels at the site and based on the proposed basement level within the building, it is likely that excavated soils will require disposal from site rather then re-used on site as part of the development.
Infiltration Drainage	The presence of a variable thickness of made ground across the site, a shallow groundwater table and the flooding susceptibility of the site suggest that a soakaway drainage system will not be feasible for the development.
This Executive Summary is intended as a summary of the geotechnical and geoenvironmental assessment of the site in the context of the current development proposals based on information received by Cundall at the time of production and should be read in conjunction with the main Report text.	

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1.0

Introduction

1.0 Introduction

1.1 The Site

The site comprises a rectangular shaped parcel of land of approximately 0.6 ha located in the Docklands area of London. The site was previously occupied by an hotel with associated areas of external car parking and the hotel was demolished in 2023. Figure 1-1 shows the development site location and its boundaries (delineated in red).

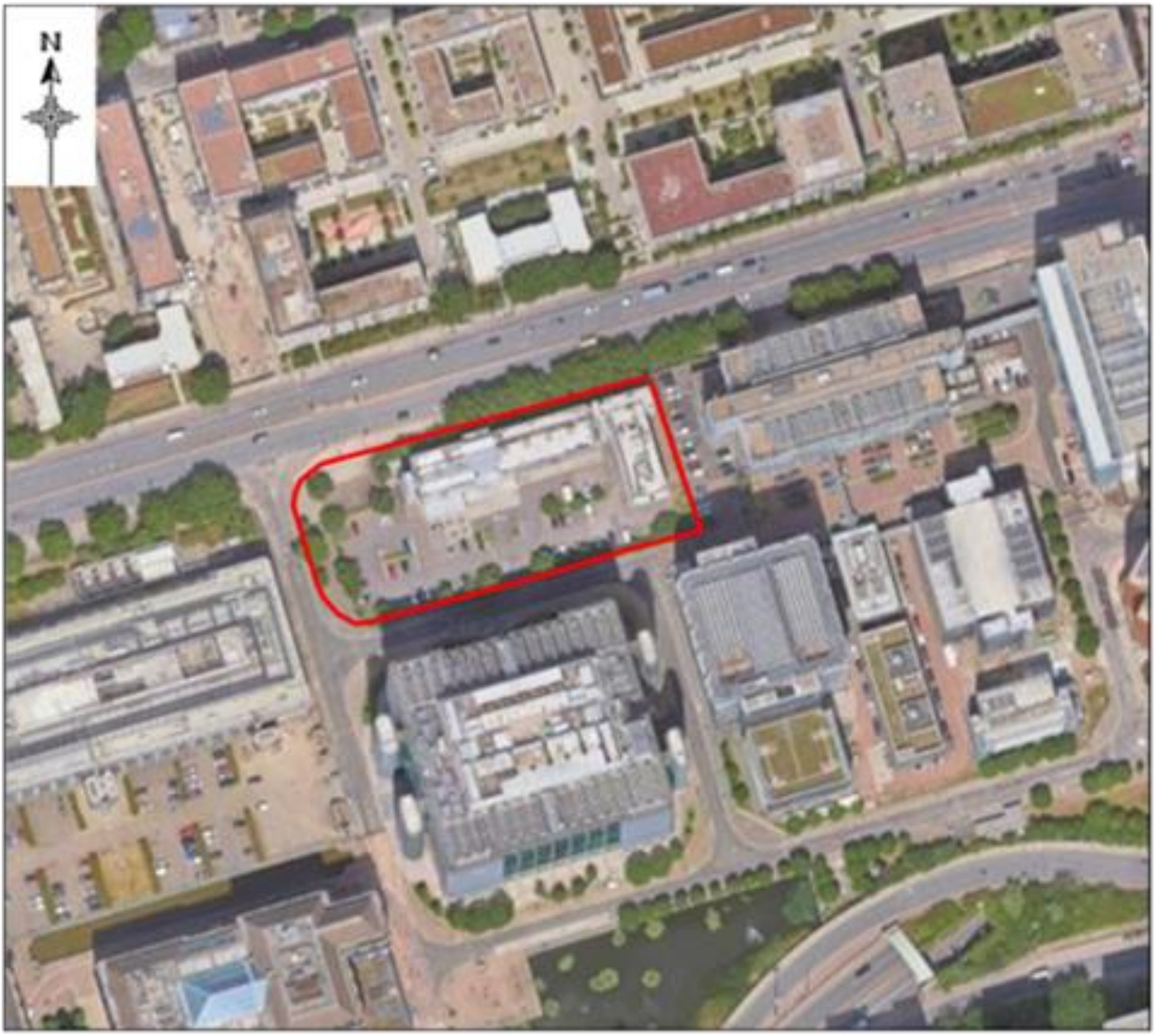

Figure 1-1: Site Location Plan

1.2 Objectives and Scope of Assessment

Cundall was commissioned by the Client to prepare and issue a Phase II Geotechnical and Geoenvironmental Assessment for the site in the context of the proposed development, based on an intrusive ground investigation.

It should be noted that this report was previously prepared in 2020 (document reference 1016734.RPT.GL.004), prior to the additional dock wall investigation works being completed. The text within this report has not been updated since 2020 but has been reissued as part of RIBA Stage 4 for completeness.

1.3 The Scheme

Telehouse International Corporation of Europe Limited (the Client) propose to redevelop the site of the existing hotel and car park with a new data centre, together with vehicular access and a service yard. An anticipated development plan is presented as Figure 1-2.

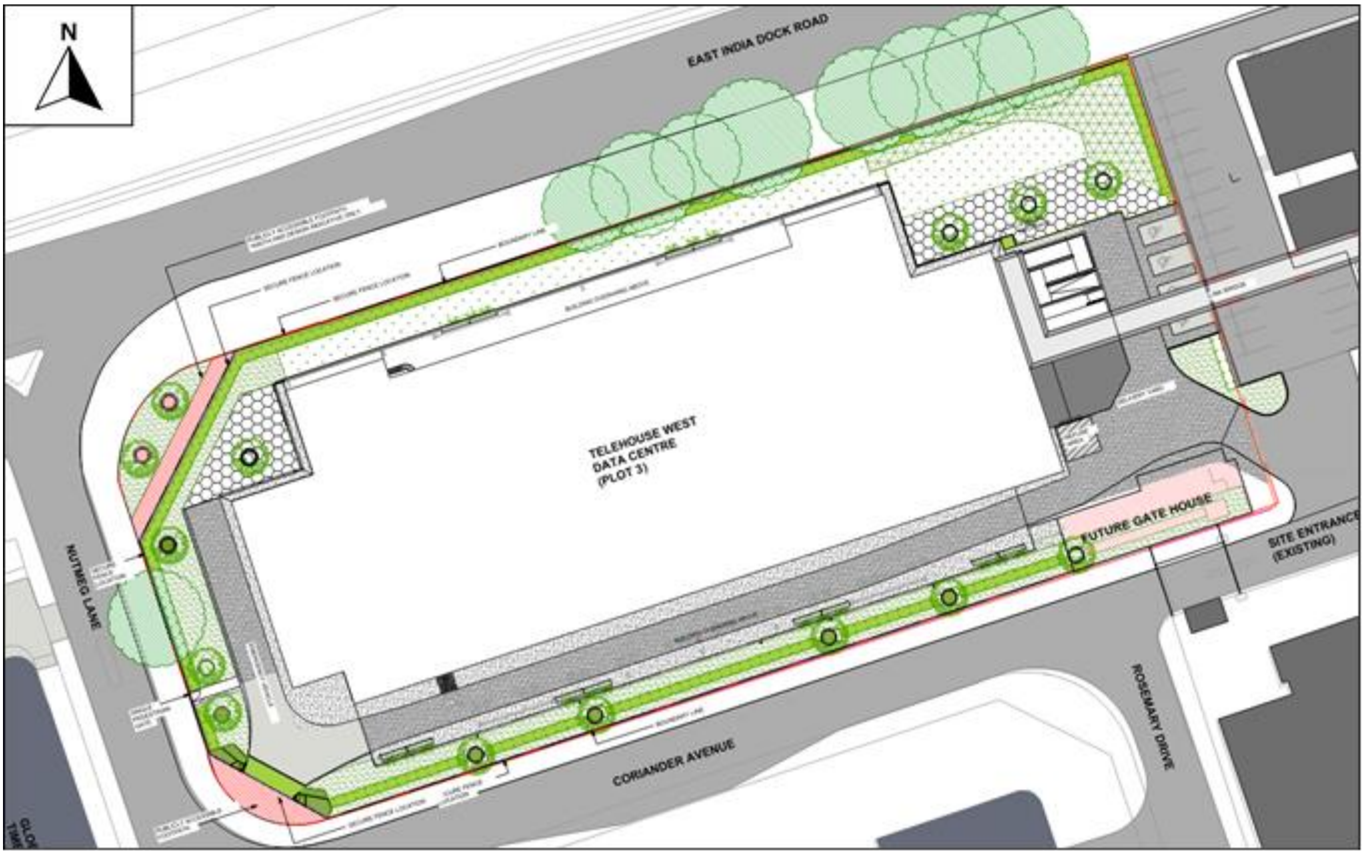

Figure 1-2: Proposed Site Plan Extracted from Architectural Drawing TW2001-TSP-TW2-XX-DR-A-100003

1.4 Sources of Information

This assessment has been based on a review of readily available published information and background research, including, but not limited to, the sources described on the next page. Where additional sources of background information have been used, these are stated in the text.

1. Cundall, October 2024, Preliminary Land Quality Assessment, Report reference TW2001-CDL-TW2-RP-GE-110002.
2. Cundall, October 2024, Detailed UXO Threat and Risk Assessment, Report reference TW2001-CDL-TW2-XX-RP-GE-110003.
3. Dunelm, 20 October 2020, Factual Report on Site Investigation for Telehouse Project T, Report reference D9820/04.
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13. Lord et al., 2002, CIRIA C574 Engineering in Chalk.
14. British Geological Society, 1999, 1:10,000 Series Geology Map Solid and Drift Edition Sheet TQ38SE (Tower Hamlets).
15. Hazen, A, 1982, Some physical properties of sands and gravels: Massachusetts State Board of Health. Public Document No 34. pp 539-556.

1.5 Limitations

The findings and opinions conveyed in this report are based on preliminary development proposals obtained from the client and the sources detailed within Section 1.4, which Cundall believes are reliable. The information contained in this report is to the best of our knowledge accurate at the date of issue. If new information becomes known pertaining to the site, Cundall reserves the right to review the information and revise the recommendations made in the report. Should the standards, legislation, guidance, and best practice used in the production of this report be amended, updated, or withdrawn then the findings and recommendations of this report may be affected.

Whilst every effort has been made to interpret the conditions between investigation locations, such information is only indicative, and liability cannot be accepted for its accuracy. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been considered in this report. The test results that have been obtained can only be regarded as a limited but likely representative sample range, assessed against current guidelines. The possibility of the presence of contaminants, possibly in higher concentrations elsewhere on the site or the presence of encountering ground conditions at variance with the logs elsewhere on the site cannot be discounted.

The scope of the investigation was selected based on the preliminary development proposals provided by the Client and may be inappropriate to another form of development. The assessments carried out and recommendations made in this report with regard to foundation and infrastructure design are based on the preliminary details provided by the Client and the results of ground investigation at discrete locations. If it comes to light that the ground conditions vary from those revealed by the existing investigation or the structural details and layout of the proposed buildings, structures and infrastructure are revised, Cundall reserves the right to carry out further assessments and revise their recommendations in line with the revised scheme details.

2.0

Summary of Previous Reports

2.0 Summary of Previous Reports

Four previous reports have been reviewed to provide further insight into the site conditions. The reviewed reports consist of a Preliminary Land Quality Assessment undertaken by Cundall in 2018 (Section 2.1), a detailed UXO threat and assessment report (Section 2.2) and two site investigation reports for ground investigations undertaken in close proximity to the site (as detailed in Sections 2.3 and 2.4). These site investigations have been reviewed to determine if the ground conditions encountered at the two sites are similar to those underlying the Project T site, including the sequence and depths of the various strata. Reference to the full reports should be made for complete details.

2.1 Preliminary Land Quality Assessment for Project-T Plot 3 Coriander Avenue, Cundall (October 2018)

The following sections review the main points of the Cundall (2018) preliminary land quality assessment for the site.

2.1.1 Historical Development

The report summarises that the site was first developed in about 1803 and formed part of what was the East India Dock with only the far southern extents of the site forming the wet dock. The majority of the site was recorded to consist of a quay wall, quayside and warehousing associated with the North Quay. An 'as built' drawing of the former dock from between 1803 and 1806 from British History Online (Ref 4, Section 1.4), is presented in Figure 2-1. The approximate location of the subject site is shown in red on this figure.

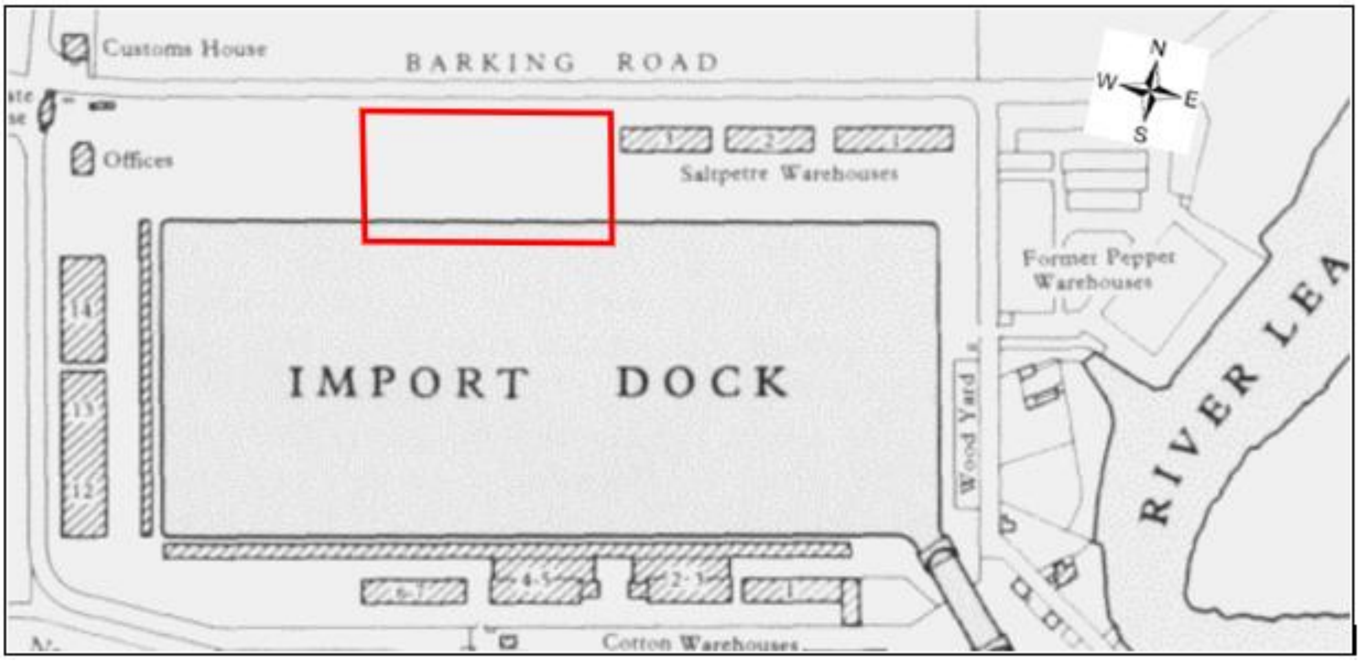


Figure 2-1: 1803-1806 as built drawing of the East India Dock and Site Location

East India Dock was closed in 1967 and it is understood that the dock was infilled gradually between the late 1960s and mid-1980s though detail of this is limited. The 1991 mapping no longer records the dock with the site area appearing undeveloped and bound by roads. By 1999, the site is recorded to be occupied by the existing hotel and areas of external car parking which remain to the present day.

2.1.2 Unexploded Ordnance (UXO) Risk

A Preliminary UXO Risk Assessment has been obtained and this indicates that there is a medium risk of UXO encounter and the report indicates that a Detailed UXO Threat and Risk Assessment is required to determine what, if any, mitigation measures will be needed during both future intrusive survey work and subsequent construction works. A detailed UXO threat and assessment was undertaken by Cundall subsequently and is detailed in Section 2.2.

2.1.3 Published Geological Mapping

The BGS geological mapping (Ref 10 and Ref 14, Section 1.4) indicates much of the site is anticipated to be to be underlain by the following sequence:

- Alluvium typically consisting of soft to firm consolidated, compressible silt clay with layers of silt, sand, peat and basal gravel.
- Kempton Park Gravel: sand and gravel, locally with lenses of silt, clay or peat.
- London Clay generally described as blue-grey or grey-brown, slightly calcareous, silty to very silty clay to clayey silt with layers of sandy clay.
- Lambeth Group consisting of laterally and vertically variable sequences of clay, some silty or sandy, with some sands and gravels. The Lambeth Group comprises the following units:
  - Woolwich Formation typically described as grey to grey-brown, interlaminated fine grained sands, silts and clays with some shelly beds.
  - Reading Formation consisting of blue-grey to brown clay with red hues.
  - Upnor Formation typically composed of glauconitic fine to coarse grained sand with variable clay and silt content.
- Thanet Sand described as fine grained sand that can be clayey and glauconitic, and
- Seaford & Newhaven Chalk Formation (Undifferentiated) recorded to be as least 100m thick.

The report states that the far south of the site is recorded as being underlain by Made Ground (associated with dock infill materials) which in turn is underlain by London Clay. It is therefore assumed that the alluvium and Kempton Park Gravel was removed in the area of the infilled dock to facilitate dock construction. However, given the sites development history, made ground is anticipated at surface across the entire site.

2.1.4 Historical Borehole Records

The report records the anticipated ground conditions at the site based on the review of approximately 20 borehole records on the site, and more than fifty within a 50m radius, as the following downward sequence.

- General made ground (up to 5m thick) across the majority of the site or dock infill in the far southern part of the site (about 11m thick).
- Superficial deposits comprising alluvium overlying Kempton Park Gravel to between approximately 9m and 11m bgl underlying the general made ground outside the infilled dock area.
- London Clay encountered between 8.8 and 11.1m and proven to approximately 22.5m bgl.

The report also summarises the ground conditions encountered during an intrusive investigation undertaken by Concept Site investigations to the east of the site, and this is detailed in Section 2.3.

The report considers it likely that two groundwater bodies will be encountered at the site, a shallow groundwater table located within the made ground and / or alluvium, likely to be in hydraulic continuity with the River Thames and Lea, and a deeper groundwater table within the Lambeth Group, Thanet Sand and underlying Chalk, hydraulically confined under sub-artesian pressure by the overlying London Clay. Areas of the site south of the relict dock wall are likely to be hydraulically isolated from the wider water environment due to the confinement / hydraulic separation caused by this buried structure.

2.1.5 Preliminary Geoenvironmental Risk Assessment

Based on the historical development of the site and the proposed redevelopment of the site for a commercial end use, the report concludes that the geoenvironmental risk to human health is generally moderate once the scheme is constructed but potentially high during construction. The report states that the risk to controlled waters and the risk from hazardous ground gas is also considered potentially high.

2.1.6 Development Considerations and Recommendations

The report states that the following development constraints should be considered for the proposed scheme:

- Prior to further assessment being carried out, it is recommended that an allowance is made for ground gas protection measures for the new structures.
- An assessment of waste soils arising during construction will be required but at this stage an allowance to dispose of some soils that may classify as hazardous would be prudent.
- Relict foundations / structures from previous development on site may remain in situ and present obstructions to construction.
- At this stage, piled foundations and a suspended ground floor slab should be allowed for.

The report concludes that an intrusive ground investigation will be required to further assess and quantify the potential geoenvironmental risks and also to inform scheme design, subject to planning permission being granted.

2.2 Detailed UXO Threat and Risk Assessment, Cundall (October 2018)

A detailed UXO threat and risk assessment was undertaken for the site to quantify the risk posed by UXO's to the development and determine what, if any, control / risk mitigation measures would be required during intrusive investigations and subsequent preparatory / enabling works and construction works.

The assessment concluded the site is classified as having a very high risk of UXO threat and mitigation measures must be implemented during any intrusive works as part of any site surveys or subsequent preparatory / enabling works and construction.

The following mitigation measures were recommended:

- UXO emergency response plan.
- UXO safety and awareness briefings.
- Non-intrusive UXO survey and / or Explosive Ordnance |Clearer (EOD) banksman support for 'open' intrusive works into previously disturbed ground; and
- Intrusive UXO survey (employing down the hole magnetometer or MagCone techniques) where 'blind' intrusive works into previously undisturbed ground are proposed.

2.3 Project Indigo Site Investigation Report, Concept (March 2014)

Concept Site Investigations (Concept) undertook an intrusive ground investigation approximately 200 to 250m east of the site for the TN2 data centre development in 2013. This investigation flanked the anticipated eastern wall of the former East India Dock and formed the basis for the subsequent Cundall Geotechnical and Geoenvironmental Assessment (Ref 1, Section 1.4).

The investigation was undertaken between 12 November and 20 December 2013 and consisted of the following:

- Five cable percussive boreholes to a maximum depth of 26.3m bgl,
- Four rotary boreholes to a maximum depth of 15m,
- Four rotary follows on borehole from the base of cable percussion boreholes to a maximum depth of 65.4m,
- Thirteen machine excavated trial pits to a maximum depth of 4.2m, and
- Seven machine excavated trial pits to a maximum depth of 6.5m.

This investigation recorded the following downward sequence of ground conditions:

- General made ground varies in thickness between 4.8 and 6.3m.
- Made ground (dock infill) varies in thickness of between 10.5 and 12.8m. Generally, this material was described as soft clays and loose gravel with local inclusions of decayed timber, wire, metal, brick, concrete and organic matter. Notably the deeper dock infill materials (below about 8m) was rich in organic material.
- To the east of the dock wall (outside the former dock), the made ground is underlain by alluvium and Kempton Park Gravel to about 10m.
- London Clay (recorded as stiff to very stiff) was recorded to depths of around 25m bgl. This stratum locally recorded pyrite nodules.
- Beneath the London Clay the Harwich Formation was recorded (stiff slightly sandy clay 3 to 5m thick) overlying the Lambeth Group (interbedded stiff to hard clay and dense to very dense sand to between 42 and 45 m bgl).
- The Lambeth Group is underlain by the Thanet Formation (very dense sand to about 58m) in turn underlain by Chalk (proven to about 65m bgl).

Water strikes were observed during the works between 4.60 and 25.00m bgl, and during monitoring rounds between 4.02 and 4.58m bgl (+1.30 and +1.99m AOD), between 18.40 and 18.98m bgl (-12.17 and -12.75m AOD) in CBH01 and between 28.60 and 30.99m bgl (-22.38 and -24.77m AOD) in CBH04.

Additionally, the trial pitting exercise and geophysical survey undertaken as part of the Concept investigation confirmed the relict northern and eastern dock wall remains in situ, below ground at depths of between +4.8 and +5.1m AOD, with the northern dock wall trending approximately north east to south west, dividing the shallower general made ground east of this feature and the deeper dock infill to the west.

No elevated concentrations of heavy metals or hydrocarbons were identified in a human health context for a commercial development, nor were there widespread elevated leachable concentrations of heavy metals / hydrocarbons. This together with the geological descriptions of the dock infill (with inclusions such as rounded gravels, a high silt / clay content and local organic content) suggests that the origin of some of this material is likely to be river dredging from the River Thames.

Slightly elevated leachable concentrations of total petroleum hydrocarbons (TPH) and dissolved phase TPH within groundwater samples was identified at the site however, these elevated concentrations are not considered to represent a significant risk to controlled waters due to the London Clay above the principal aquifer and the anticipated reduction in infiltration due to the proposed hard surfacing and construction proposed for the site.

In addition, one positive asbestos (as loose fibres) identification was made out of 17 samples within the shallow depth made ground soil. As only one sample screened positive it was not possible to discern a possible source (i.e. whether or not this was derived from asbestos containing materials from the former buildings).

Where relevant, the results of the Concept (2013) investigation are included within this assessment report.

2.4 Factual Report on a Ground Investigation at Telehouse West, London, E14, Soil Mechanics (December 2008)

Soil Mechanics was commissioned by Faber Maunsell Limited, on behalf of Telehouse International Corporation of Europe Ltd., to undertake a ground investigation at the Telehouse West site located approximately ten metres south east of the Project T site boundary, on the opposite side of Coriander Avenue (Ref 9, Section 1.4). Therefore, the Telehouse West site is located entirely within the infilled dock.

The investigation was undertaken between 15 September and 3 November 2008 and consisted of four boreholes; two created by cable percussion methods to depths of between 30.15 and 50m bgl (BH02 & BH605) and two created by cable percussion and rotary follow on to depths of 58.5 and 60m bgl (BH601 & BH603).

Pressuremeter tests (with high pressure dilatometer operated by Geocone) were attempted in the Thanet Formation sections of boreholes BH601 and BH603 and geotechnical laboratory testing as undertaken on selected soil samples. Where relevant, the results of the Soil Mechanics (2008) investigation will be included within this assessment.

3.0

Ground Investigation (Dunelm 2019 to 2020)

3.0 Ground Investigation (Dunelm 2019 to 2020)

An intrusive investigation was carried out by Dunelm Geotechnical and Environmental Ltd (Dunelm) in two phases as a result of the COVID-19 lockdown implemented by the UK Government and the two phases were undertaken between the 02 December 2019 and 24 March 2020 and between 18 May and 03 June 2020. The aim of the investigation was to understand the ground conditions beneath the site in order to provide sufficient information for scheme design and to address the risks identified in the Phase I Assessment (Ref 1, Section 1.4). The scope of the investigation was agreed with the Local Authority in line with planning conditions for the proposed development.

As the site is currently occupied by an operational hotel and external car park, the ground investigation works were carried out under license. The majority of the exploratory holes were located within the car park area as the building footprint prevent access to this area of the site and a formal agreement was made on the proposed locations with the site owner. Access to the site was limited and the ground investigation works were undertaken constrained by the access limitations. The works were undertaken sequentially to ensure continued safe and efficient operation of the hotel during the works and working hours were restricted in areas within 10m of an occupied bedroom window (BH06, WS06, WS08, WS09 and WS10).

The scope of the ground investigation included the following:

- GPR survey of all exploratory positions prior to intrusive works for service avoidance purposes.
- Seven rotary cored boreholes to a maximum depth of 58.4m bgl (BH01 to BH06, including BH02A). Exploratory hole BH02 was terminated at a depth of 12m due to encountering an obstruction and BH02A was located to the north east of the BH02 position and was subsequently terminated after a granite cobble was encountered at a depth of 10.7m bgl.
- Eleven dynamic window sample boreholes to a maximum depth of 5.45m bgl (WS01 to WS10, including WS07A, and WS10A). Exploratory hole WS07 was relocated to the position of WS07A due to access restrictions within the car park. Exploratory hole WS10 was terminated at a depth of 0.95m on a tarmac obstruction, consequently, WS10A was undertaken slightly north of WS10. WS10A also encountered the tarmac obstruction at a depth of 0.9m.
- Standard Penetration Testing (SPT) within all dynamic sampler and rotary borehole locations.
- Collection of disturbed / undisturbed soil samples for geotechnical and chemical laboratory testing.
- Installation of seven gas and groundwater monitoring wells.
- A programme of post site works monitoring comprising 12 visits over a six month period.
- Geotechnical and chemical laboratory testing of soils.
- UXO mitigation measures implemented as recommended in Section 2.2 including a UXO emergency response plan, UXO safety and awareness briefings and a down-hole magnetometer survey undertaken by a specialist contractor during the advancement of each exploratory hole. The magnetometer survey records are summarised in Section 4.5.

A factual report summarising this investigation was prepared by Dunelm (Ref. 1, Section 1.4).

4.0

Ground Conditions and Properties

4.0 Ground Conditions and Properties

4.1 Summary of Ground Conditions

The ground conditions encountered during the recent Dunelm (2019/20) investigation are generally in line with published mapping (presented in Section 2.1.3), although, the Harwich Formation was recorded underlying the London Clay and overlying the Lambeth Group deposits. The encountered ground conditions are also in line with the ground conditions encountered during the previous adjacent Soil Mechanics (2008) and Concept (2013) investigations.

The general made ground recorded across the site was generally recorded to be slightly thinner (between 0.7 and 2.5m) than the made ground recorded across the TN2 site (between 4.8 and 6.3m). In addition, the made ground within the infilled dock on site was proven between 10.3 and 11.1m thick, whereas the Concept (2013) investigation recorded thicknesses between 10.5 and 12.8m and the Soil Mechanics (2008) investigation recorded thicknesses between 12.3 and 13.3m. This is anticipated to be a result of the deepening of the dock base towards the centre of the dock, to the south of the site.

Both the Dunelm (2019/20) investigation and the Concept (2013) investigation recorded superficial deposits of alluvium and Kempton Park Gravel to depths of between 10 and 12.3m, overlying London Clay, Harwich Formation and Lambeth Group, with similar thickness of each stratum recorded. However, the Upnor Formation and the Thanet Sand were recorded to be undifferentiated during the recent Dunelm (2019/20) investigation.

During the recent Dunelm (2019/20) investigation, chalk was encountered at depths between 54.35 and 56.3m bgl (-49.02 and -50.57m AOD). During the Concept (2013) investigation undertaken to the east of the site, the chalk was encountered at depths of between 57.9 and 58m bgl (-51.67 and -51.92) and during the Soil Mechanics (2008) investigation to the south of the site, chalk was encountered at depths of between 56.97 and 57.5m bgl (-50.13 and -50.66). This suggests that the top of the chalk decreases slightly in depth from the east / south east of the site towards the site, with increasing distance from the River Thames.

As discussed in Section 2.1.1, the site historically formed part of what was the East India Dock with only the far southern and south eastern extents of the site forming the wet dock. The anticipated location of the dock wall is presented on drawing 1016734.DWG.GL.003 with exploratory holes BH03, BH06, WS04 and WS05 located within the area of infilled dock in the southern extents of the site. The following boreholes were located outside the area of infilled dock; BH01, BH02, BH04, BH05, WS01, WS02, WS03, WS06, WS07A, WS08, WS09, WS10 and WS10A.

An exploratory hole location plan is presented as drawing TW2001-CDL-TW2-XX-DR-GE-160204 along with geological cross sections as drawings TW2001-CDL-TW2-XX-DR-GE-160205 and TW2001-CDL-TW2-XX-DR-GE-160206. The ground conditions encountered during the recent Dunelm (2019/20) investigation are summarised in Table 4-1 below and detailed descriptions of the individual strata encountered are presented in Section 4.2.

Stratum	From - mbgl	To - mbgl	Thickness - m	Identified in Exploratory Hole Positions:
	(mAOD)	(mAOD)		
Made Ground (Outside Infilled Dock)	0	0.7 to 2.5	0.7 to 2.5	BH01, BH02, BH02A, BH04, BH05, WS01, WS02, WS03, WS06, WS07A, WS08, WS09, WS10* & WS10A*
	(5.81 to 4.63)	(4.98 to 2.95)		
Made Ground (Inside Infilled Dock)	0	>3.28 to 11.1	>3.28 to 11.1	WS04*, WS05*, BH03 & BH06
	(5.59 to 5.89)	(<2.34 to -5.21)		

Stratum		From - mbgl	To - mbgl	Thickness - m	Identified in Exploratory Hole Positions:
		(mAOD)	(mAOD)		
Alluvium (Outside Infilled Dock)		2.5	>5.45 to >8.7	>2.95	WS09*
		(2.95)	(0)		
Kempton Park Gravel (Outside Infilled Dock)		0.7 to 2.4	>5.45 to 12.3	>3.95 to 11.6	BH01, BH02*, BH02A*, BH04, BH05, WS01* to WS03*, WS06* to WS08*
		(4.98 to 3.1)	(<0.36 to -7.67)		
London Clay		10.3 to 12.3	22 to 25.8	9.7 to 14.1	BH01, BH03, BH04, BH05 & BH06
		(-4.71 to -7.68)	(-17.22 to -20.12)		
Harwich Formation		22 to 24.58	26.5 to 28.2	2.82 to 4.9	BH01, BH03, BH04, BH05 & BH06
		(-17.22 to -18.9)	(-21.72 to -22.61)		
Lambeth Group	Woolwich Formation (Laminated Beds)	28.2	30.48	2.28	BH06
		(-22.61)	(-24.89)		
	Woolwich Formation (Lower Shelly Clay)	26.5 to 28	31.69 to 32.59	4.07 to 5.5	BH01, BH03, BH04 & BH05
		(-21.72 to -22.11)	(-25.96 to -27.37)		
	Reading Formation (Lower Mottled Clay)	30.48 to 32.59	33.1 to 34.74	1.1 to 3.57	BH01, BH03, BH04, BH05 & BH06
		(-24.89 to -27.38)	(-27.5 to -28.86)		
Upnor Formation / Thanet Formation		33.1 to 34.74	54.35 to 56.3	20.16 to 23.07	BH01, BH03, BH04, BH05 & BH06
		(-27.5 to -28.86)	(-49.02 to -50.57)		
Seaford Chalk and Newhaven Chalk Formation (Undifferentiated)		54.35 to 56.3	56.5 to 58.4	>2.65	BH01*, BH03*, BH04*, BH05* & BH06*
		(-49.02 to -50.57)	(>-50.82 to >-52.67)		
*Exploratory hole did not encounter the base of this material.					

Table 4-1: Summary of Ground Conditions

4.2 Ground Conditions

4.2.1 Made Ground

Made ground material was encountered at surface across the site to a maximum depth of between 0.7m and 2.5m bgl (+5.1m and +2.95m AOD) outside the area of infilled dock and between 10.3m and 11.1m bgl (-4.71 and -5.21m AOD) within the area of infilled dock.

The nature and composition of these deposit was variable with three main types of made ground identified during the site investigation. Details of these units is described as follows in stratigraphic elevation order from highest to lowest:

4.2.1.1 Surface Made Ground Material

The surface of the site within the hotel car park is dark grey to black bitumen macadam generally 0.10m thick.

In the north west of the site, BH01 encountered grey concrete paving slabs at surface overlying brown sand (0.20m thick), and a layer of dark grey cobbles of angular granite (0.17m thick), all overlying 0.47m of grey concrete.

BH02A in the west of the site recorded brown gravelly slightly clayey sand overlying a layer of grey concrete between 0.80 and 1.10m bgl (+4.43 and +4.73m AOD). BH02, adjacent to BH02A, recorded brown gravelly slightly clayey sand overlying a layer of grey subrounded cobbles comprising granite between 0.60 and 0.80m bgl (+4.7 and +4.9m AOD).

BH04 was located on the paved area in the centre of the site and recorded paving slabs 0.06m thick at surface overlying a layer of brown slightly gravelly sand (0.09m thick) and grey concrete (0.10m thick).

4.2.1.2 General Granular Made Ground (Outside Dock)

To the north of the dock wall, made ground was encountered directly underlying the layer of macadam (or block paving). The made ground material is generally described as sandy gravel to slightly clayey gravelly sand. Sand is fine to coarse, and gravel is angular to subrounded, fine to coarse of sandstone, concrete, brick, clinker, timber, flint and glass fragments.

4.2.1.3 Dock Infill (Made Ground)

To the south of the dock wall, within the area of infilled dock, the made ground is encountered underlying the surface layer of bitumen macadam. The dock infill material is described as slightly clayey gravelly sand to slightly sandy, gravelly clay. Sand is fine to coarse and gravel is fine to coarse angular to subrounded flint, sandstone, coal, brick, concrete, glass, timber and clinker. Cobbles and / or boulders of concrete and brick are also recorded.

It should be noted that a hydrocarbon odour and sheen were noted within this material in BH03 between 10.90 and 11.10m bgl and a strong organic and hydrocarbon odour was recorded within WS05 between 1.10 and 2.0m bgl.

4.2.2 Alluvium

Within WS09 formed in the area outside of infilled dock during the recent Dunelm investigation (2019/20), the made ground was found to be underlain by a layer of alluvium. This was recorded between 2.5 and 5.45m bgl (+2.95 and 0m AOD) although the full thickness was not proven. The alluvium was described as firm dark brown to grey slightly sandy, gravelly slightly organic clay with occasional decayed plant remains and gravel of subangular to rounded fine to coarse flint.

During the previous Concept (2013) investigation undertaken to the east of the site, alluvial deposits were recorded in two exploratory holes at depths between 4.8 and 8.7m bgl (+1.43 and -1.87m AOD) with a proven thickness of 2.4m. This material was recorded to overly the Kempton Park Gravel in that investigation.

4.2.3 Kempton Park Gravel

Kempton Park Gravel was encountered at depths of between 0.7 and 2.4m bgl (+4.98 and +3.1m AOD) outside the area of infilled dock, with thicknesses recorded to be between >3.95 and 11.6m across the site. This stratum is generally described as very loose to medium dense, sand grading to very sandy, slightly clayey gravel. Sand is fine to coarse and gravel is subangular to well rounded, fine to coarse of flint.

A layer of soft to firm brownish grey clayey, sandy silt to sandy clay was recorded within this material between 5.7 and 8.97m bgl (+0.03 and -3.24m AOD) within BH05 during the recent Dunelm (2019/20) investigation and between 9.7 and 10.0m bgl (-3.47 and -3.77m AOD) in a single exploratory hole during the previous Concept (2014) investigation.

4.2.4 London Clay

London Clay was encountered between 10.3m to 12.3m bgl (-4.71 and -7.67m AOD) across the site with a proven thickness between 9.7m and 14.1m. This stratum was typically described as very stiff closely fissured gey slightly sandy clay. Rare pyrite nodules are recorded within this stratum as well as frequent sand partings and rare shell fragments.

4.2.5 Harwich Formation

The Harwich Formation was encountered between 22m and 25.8m bgl (-17.22 and -20.12m AOD) with recorded thicknesses between 1.6m and 4.9m across the site. This formation was described as very dense, clayey, fine to medium sand and very stiff slightly sandy gravelly silty clay. Sand is recorded to be fine and occasional shell fragments are recorded within this material.

4.2.6 Lambeth Group

The Lambeth Group was encountered between 26.5 and 30.25m bgl (-21.72 to -22.6m AOD) and at this site is considered to comprise the Woolwich Formation Laminated Beds and Lower Shelly Clay, overlying the Reading Formation.

4.2.6.1 Woolwich Formation - Laminated Beds

The Laminated Beds were encountered underlying the Harwich Formation from 28.2m bgl (-22.61m AOD) in BH06 with a thickness of 2.28m. This stratum is described as very stiff thinly laminated grey slightly sandy slightly gravelly clay to very dense grey slightly clayey slightly gravelly sand. Gravel is subangular to subrounded, fine to medium of flint and occasional shell fragments are noted.

4.2.6.2 Woolwich Formation – Lower Shelly Clay

The Lower Shelly Clay was encountered at depths between 26.5 and 30.25m bgl (-21.72 to -22.6m AOD) in all boreholes excluding BH06 with a thickness of between 4.07 and 5.5m. This stratum is described as stiff to very stiff grey to brown slightly sandy slightly gravelly clay to clayey sand. Gravel is subangular to subrounded, fine to medium of flint and chalk and bands of shell and shell fragments are noted.

4.2.6.3 Reading Formation – Lower Mottled Clay

The Reading Formation was encountered across the site at the base of the Woolwich formation between 30.48 and 32.59m bgl (-24.89 and 27.38m AOD). The thickness of this stratum ranges between 1.1m and 3.57m and it is described as greenish blue to grey clayey slightly gravelly sand to stiff greenish dark grey slightly sand clay. Sand is fine to medium and gravel is angular and fine of flint. Rare shell fragments are also recorded within this stratum.

4.2.7 Upnor Formation / Thanet Formation (Undifferentiated)

The Upnor Formation and the Thanet Formation are recorded to be undifferentiated beneath the site and were encountered between 33.1m and 34.7m bgl (-27.5m and -28.86m AOD), with recorded thicknesses between 20.16 and 23.07m. This stratum is generally described as dense to very dense, greenish grey to greenish brown, slightly clayey, slightly silty, fine to coarse sand to very stiff sandy clay.

4.2.8 Seaford / Newhaven Chalk Formation (Undifferentiated)

This stratum was recovered as very weak to medium strong, low to medium density chalk with occasional fragments of gravel sized flint from depths between 54.35m and 56.3m bgl (-49.01m and -50.57m AOD) across the site.

Fractures are generally recorded to be closely spaced, horizontal to sub horizontal, planar to stepped, smooth and clean, classifying as grade C4 to C5-A1 based on guidance presented in CIRIA Guide C574. All SPT results within the chalk recorded refusal and RQD was recorded to be between 0% and 81%.

This stratum was proven to a maximum depth of 58.4m bgl (-52.67m AOD), however, published information indicates this stratum to be over 100m thick (Ref 14, Section 1.4).

4.3 Groundwater Encountered During Fieldwork

All eleven window sampler boreholes were recorded to be dry during the recent Dunelm (2019/20) ground investigation works. Groundwater could not be distinguished during drilling of the rotary boreholes due to the use of water flush to progress the drilling.

4.4 Groundwater Monitoring

Seven combined 50mm diameter gas and groundwater monitoring wells were installed as part of the Dunelm (2019/20) ground investigation in BH01, BH03, BH04, BH05, WS03, WS08 and WS09. Three 19mm diameter piezometer tips were installed within BH01, BH03 and BH04 to target the deeper groundwater regime within the Lambeth Group and undifferentiated Upnor Formation / Thanet Formation. The groundwater monitoring results are presented in Table 4-2.

BH No	Response Zone - m bgl (m AOD)	Date	Groundwater Level (mbgl)	Groundwater Level (mAOD)
BH01 (50mm)	1.5 to 12.3 (+3.13 to -7.67) Kempton Park Gravel	14/04/2020	6.44	-1.81
		01/05/2020	6.39	-1.76
		12/05/2020	6.44	-1.81
		29/05/2029	6.49	-1.86
		12/06/2020	6.48	-1.85
		03/07/2020	6.49	-1.86
		21/07/2020	6.53	-1.90
		05/08/2020	6.51	-1.88
BH01 (19mm)	23.5 to 24.0 (-18.87 to -19.37) Harwich Formation	21/07/2020	7.99	-3.36
		05/08/2020	8.00	-3.37
BH03 (50mm)	1 to 15 (+4.89 to -9.11) Made Ground – Infilled Dock	21/07/2020	3.73	+2.16
		05/08/2020	3.71	+2.18
		19/08/2020	3.78	+2.11
		02/09/2020	3.75	+2.14
		10/09/2020	3.77	+2.12
		02/10/2020	3.67	+2.22

BH No	Response Zone - m bgl (m AOD)	Date	Groundwater Level (mbgl)	Groundwater Level (mAOD)
BH03 (19mm)	39.5 to 40 (-33.61 to -34.11) Upnor Formation / Thanet Formation	21/07/2020	6.59	-0.70
		05/08/2020	7.22	-1.33
		19/08/2020	7.34	-1.45
		02/09/2020	7.28	-1.39
		10/09/2020	7.33	-1.44
		02/10/2020	7.29	-1.40
BH04 (50mm)	4 to 12 (+1.69 to -6.31) Kempton Park Gravel	14/04/2020	6.96	-1.28
		01/05/2020	6.91	-1.23
		12/05/2020	6.96	-1.28
		29/05/2029	7.00	-1.32
		12/06/2020	7.00	-1.32
		03/07/2020	7.00	-1.32
		21/07/2020	7.09	-1.41
		05/08/2020	7.03	-1.35
BH05 (50mm)	2 to 11.5 (+3.73 to -5.77) Kempton Park Gravel	14/04/2020	6.93	-1.20
		01/05/2020	6.88	-1.15
		12/05/2020	6.93	-1.20
		29/05/2029	6.98	-1.25
		12/06/2020	6.94	-1.21
		03/07/2020	6.95	-1.22
		21/07/2020	6.97	-1.24
		05/08/2020	7.00	-1.27
BH05 (19mm)	34.5 to 35 (-28.77 to -29.27) Upnor Formation / Thanet Formation	21/07/2020	8.83	-3.10
		05/08/2020	8.91	-3.18
WS03	1.5 to 3.5 (+4.31 to +2.31) Kempton Park Gravel	14/04/2020	DRY	DRY
		01/05/2020	DRY	DRY
		12/05/2020	DRY	DRY
		29/05/2029	DRY	DRY
		12/06/2020	DRY	DRY
		03/07/2020	DRY	DRY
		21/07/2020	DRY	DRY
		05/08/2020	DRY	DRY

BH No	Response Zone - m bgl (m AOD)	Date	Groundwater Level (mbgl)	Groundwater Level (mAOD)
WS08	1.5 to 3.5 (+4.09 to +2.09) Kempton Park Gravel	14/04/2020	DRY	DRY
		01/05/2020	DRY	DRY
		12/05/2020	DRY	DRY
		29/05/2029	DRY	DRY
		12/06/2020	DRY	DRY
		03/07/2020	DRY	DRY
		21/07/2020	DRY	DRY
		05/08/2020	DRY	DRY
WS09	1.0 to 2.5 (+4.45 to +2.95) General Made Ground	14/04/2020	DRY	DRY
		01/05/2020	DRY	DRY
		12/05/2020	DRY	DRY
		29/05/2029	DRY	DRY
		12/06/2020	DRY	DRY
		03/07/2020	DRY	DRY
		21/07/2020	DRY	DRY
		05/08/2020	DRY	DRY

Table 4-2: Groundwater Monitoring Results

The monitoring results indicate the presence of shallow groundwater between 6.39 and 7.09m bgl (-1.90 and -1.15m OD) within the Kempton Park Gravel to the north of the dock wall. The results from borehole BH03 indicate a shallow groundwater level between 3.67 and 3.78m bgl (+2.11 and +2.22m AOD) within made ground in the infilled dock in the south of the site which may be artificially raised as a consequence of remnant dock walls which may still exist surrounding the infilled dock. Although, it should be noted that this is based on results from a single borehole in the south west of the site.

Based on available information from the EA (Ref 6, Section 1.4), a piezometric level of -12m AOD is recorded for the aquifer underlying the London Clay at the site. However, the results of the groundwater monitoring within the deeper stratum indicate a piezometric groundwater at a higher level between 6.59 and 8.91m bgl (-0.70 and -3.37m OD). Groundwater flow between the upper and lower aquifers will be constrained by the intervening London Clay which forms an aquiclude.

4.5 UXO Down-Hole Magnetometer Survey Results

As discussed in Section 3.0 of this report, a down-hole magnetometer survey was carried out by a specialist contractor during the advancement of each exploratory hole to a depth specified by the UXO technician on site. The survey records indicate that all boreholes were cleared to the required depth with no anomalies recorded and the records are presented in Dunelm’s Factual Report (Ref 3, Section 1.4).

4.6 Engineering Properties and Behaviour

This section presents the engineering properties of the made ground, superficial soils, London Clay, Harwich Formation, Lambeth Group, and the underlying Undifferentiated Upnor Formation / Thanet Formation.

4.6.1 In-situ Testing

All Standard Penetration Tests (SPTs) undertaken across the site as part of the previous Soil Mechanics (2008) and Concept (2013) investigations and Dunelm (2019/20) ground investigations are shown in Figure 4-1. The results are discussed in the following sections.

It should be noted that where an SPT could not achieve the test penetration of 300mm, the SPT test is incomplete, and a maximum SPT N Value of 50 has been recorded although extrapolated value in excess of 50 could be derived.

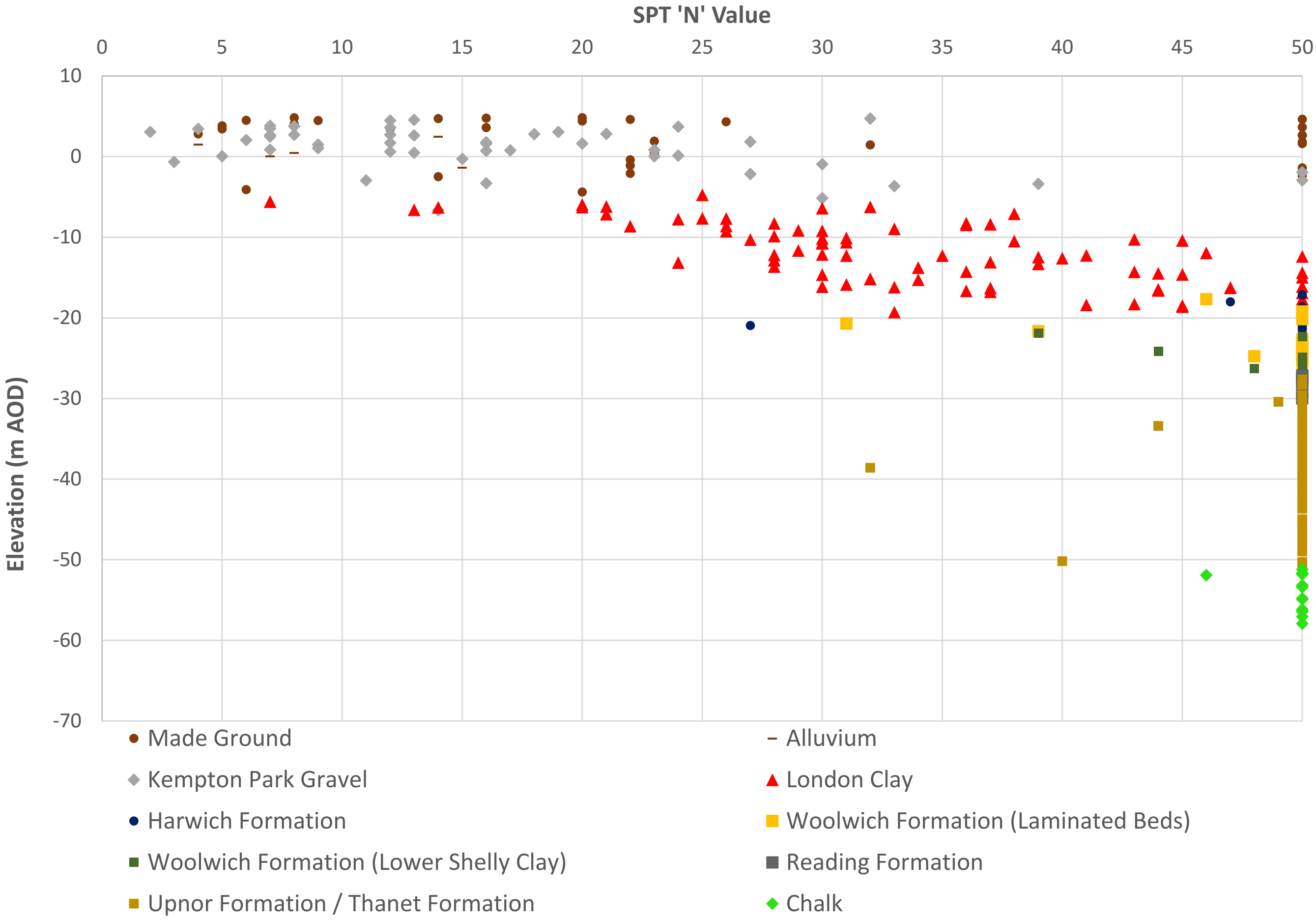


Figure 4-1: SPT N Values vs Elevation (m AOD)

4.6.1.1 Made Ground

33 SPTs were undertaken within the made ground between 1.0m and 10.0m bgl with results ranging from 4 to more than 50, as shown in Figure 4-1.

4.6.1.2 Alluvium

Five SPTs were undertaken within the alluvial deposits at depths of between 3.0m and 8.2m bgl in the east of the site. These recorded N values of between 4 and 15.

4.6.1.3 Kempton Park Gravel

47 SPTs were undertaken within the Kempton Park Gravel deposits at depths of between 1.0m and 11.3m bgl with recorded SPT N values of between 2 and greater than 50. These results indicate the Kempton Park Gravel is highly variable, ranging from very loose to very dense.

4.6.1.4 London Clay

81 SPTs were undertaken within the London Clay at depths of between 11.0m and 28.5m bgl. These recorded N values of between 7 and in excess of 50, with the results generally increasing with depth, as shown in Figure 4-1.

4.6.1.5 Harwich Formation

16 SPTs were undertaken within the Harwich Formation at depths of between 23.5m and 30.0m bgl. These recorded N values of between 27 and in excess of 50 indicating medium dense to very dense sand.

4.6.1.6 Woolwich Formation

14 SPTs were undertaken within the Laminated Beds at depths of between 24.7m and 33m bgl and N values were recorded to be between 31 and more than 50.

13 SPTs were undertaken within the Lower Shelly Clay at depths of between 26.5m and 35.5m bgl and N values were recorded to be between 39 and in excess of 50, as shown in Figure 4-1.

4.6.1.7 Reading Formation

Six SPTs were undertaken within the Reading Formation at depths of between 32.6m and 36.2m bgl and N values were all recorded to be 50 or above, as shown in Figure 4-1.

4.6.1.8 Upnor Formation / Thanet Formation

85 SPTs were undertaken within the Upnor Formation / Thanet Formation at depths of between 34.5m and 56.5m bgl and N values were recorded between 32 and more than 50, with the majority of the N values recorded to be in excess of 50, as shown in Figure 4-1. These results indicate this stratum to be dense to very dense sand.

4.6.1.9 Seaford / Newhaven Chalk Formation

14 SPTs were undertaken within the Chalk at depths of between 56.8m and 63.8m bgl and N values were all recorded to be in excess of 50, apart from one recorded N value of 46, as shown in Figure 4-1.

4.6.2 Classification Tests – Moisture Content

All moisture content tests undertaken as part of the previous Soil Mechanics (2008) and Concept (2013) investigations and recent ground investigations are shown as Figure 4-2 and discussed in the following sections.

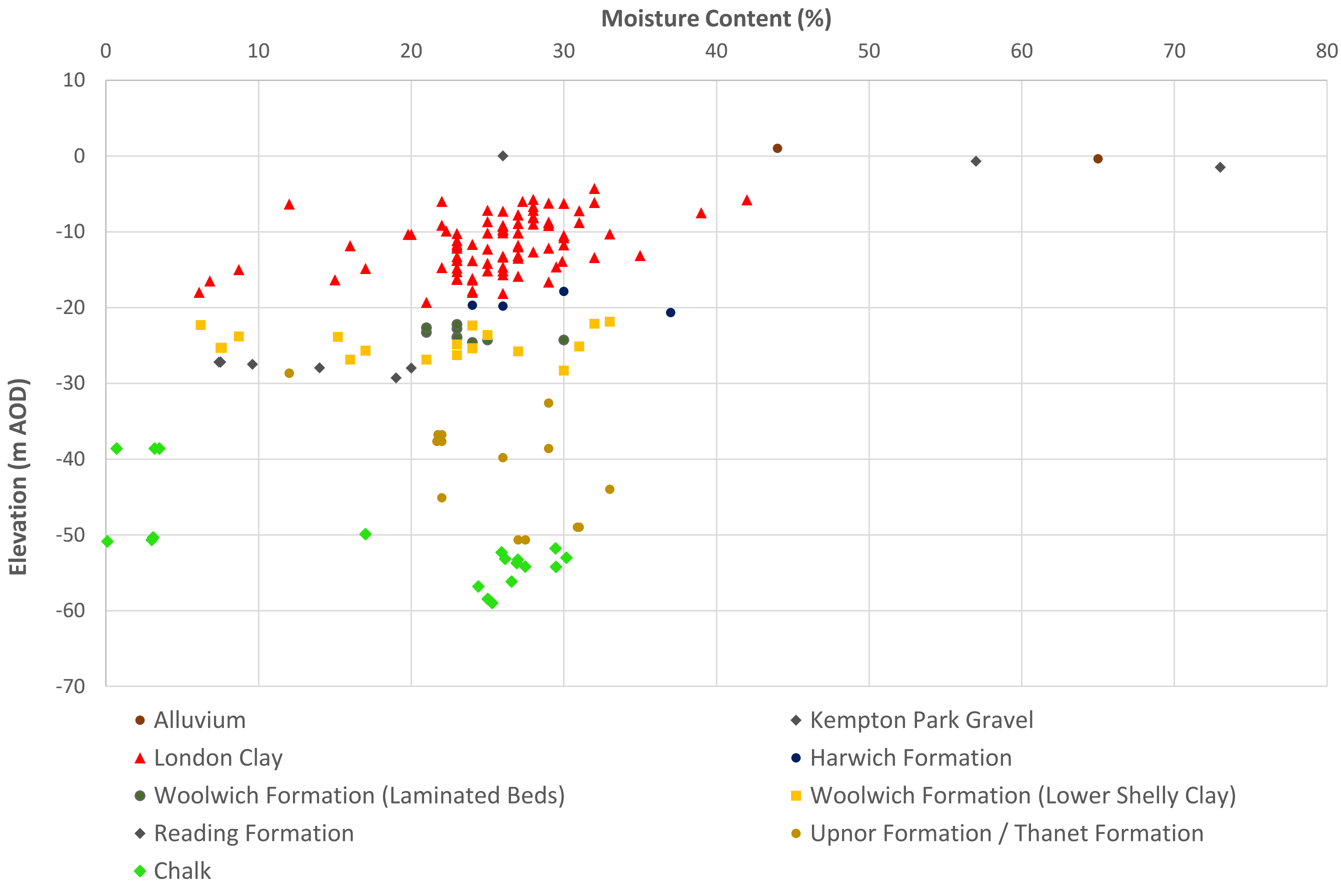


Figure 4-2: Moisture Contents vs Elevation (m AOD)

4.6.2.1 Alluvium

Two moisture content tests within the alluvial deposits recorded results of 44 and 65%.

4.6.2.2 Kempton Park Gravel

Three samples of clay and silt materials from the Kempton Park Gravel between 5.7m and 7.2m bgl within BH05 recorded natural moisture contents between 26 and 73%.

4.6.2.3 London Clay

90 moisture content tests were undertaken on samples of London Clay from depths between 10.5 and 25.0m, and recorded moisture contents between 8.7 and 42%.

4.6.2.4 Harwich Formation

Four moisture content tests were undertaken on samples of Harwich Formation deposits and recorded natural moisture contents between 24% and 37%.

4.6.2.5 Woolwich Formation

Nine samples of Woolwich Formation Laminated Beds deposits recorded natural moisture contents between 21 and 30%.

20 samples of Lower Shelly Clay deposits recorded natural moisture contents between 6.2 and 33%.

4.6.2.6 Reading Formation

Seven samples of Reading Formation deposits recorded natural moisture contents between 7.4 and 20%.

4.6.2.7 Upnor Formation / Thanet Formation

15 moisture contents tests were undertaken on Upnor Formation / Thanet Formation and the results recorded moisture contents between 12 and 33%.

4.6.2.8 Seaford / Newhaven Chalk Formation

Results of twelve moisture content tests undertaken as part of the previous investigations on samples of chalk recorded natural moisture contents between 24.4 and 30.2%.

Seven moisture content tests undertaken on samples of chalk as part of the recent Dunelm (2019/20) investigation recorded natural moisture contents between 0.7 and 17%.

4.6.3 Classification Tests – Atterberg Limits

All Atterberg limit tests undertaken as part of the previous Soil Mechanics (2008) and Concept (2013) investigations and recent Dunelm (2019/20) ground investigations are shown as Figure 4-3 and discussed in the following sections.

4.6.3.1 Alluvium

Atterberg limit testing was undertaken on two samples alluvium, indicating it to have a variable modified plasticity ranging from a very high plasticity clay to an extremely high plasticity silt, as shown in Figure 4-3.

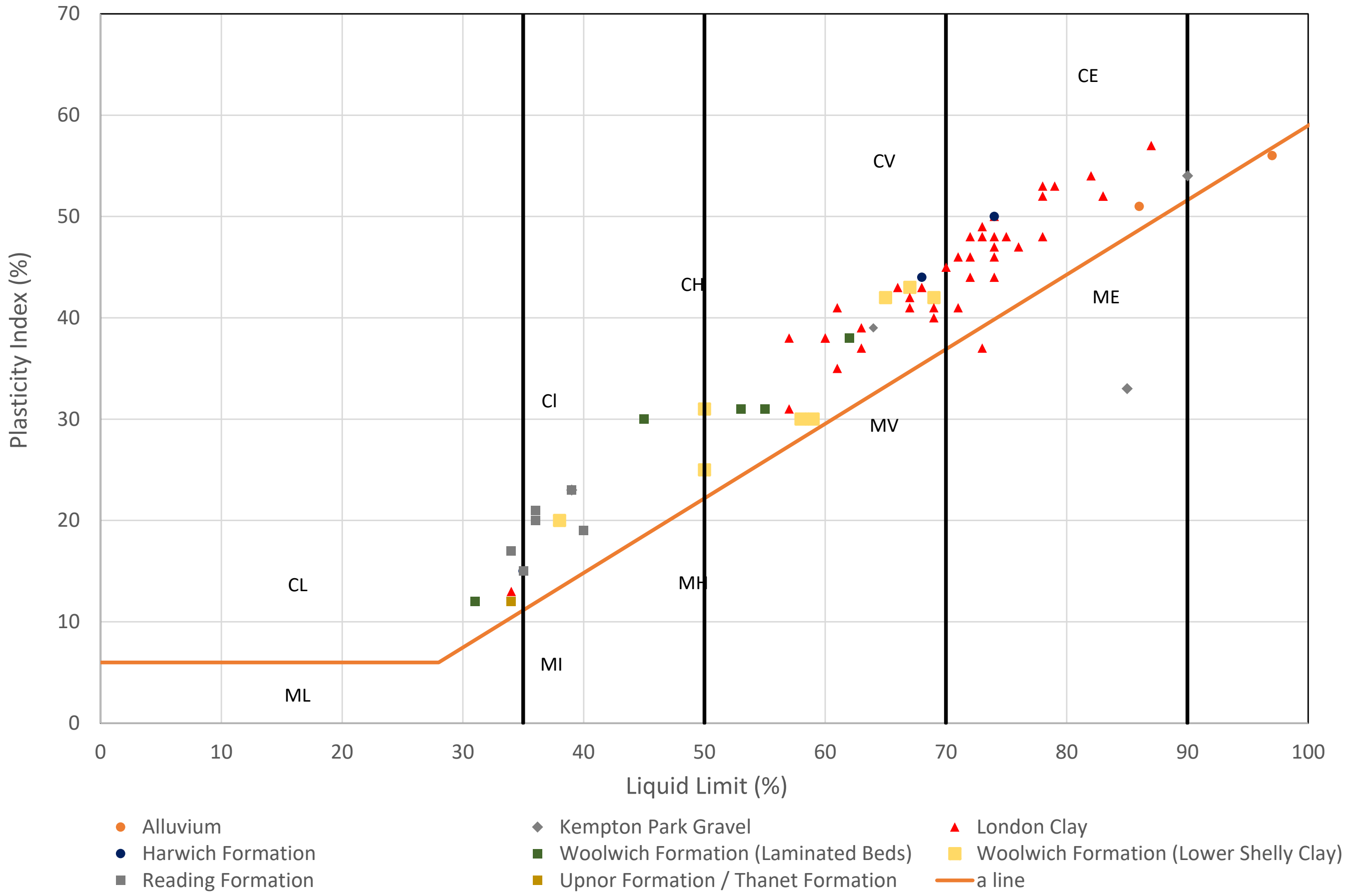


Figure 4-3: Plasticity Chart

4.6.3.2 Kempton Park Gravel

Three samples of a cohesive layer within the Kempton Park Gravel within BH05 underwent Atterberg limit testing and the modified plasticity results indicate it to be generally classified as very high to extremely high plasticity silt to extremely high plasticity clay.

4.6.3.3 London Clay

39 samples of London Clay underwent Atterberg limit testing and the results indicate it to be generally classified as a high to very high plasticity clay. Plasticity indices are recorded between 31 and 57% with a comparatively low value of 13% recorded within BH05 at 23.7m bgl towards the base of the London Clay (recorded to be at 24.5m bgl) with the London Clay described as stiff fissured grey slightly sandy, slightly gravelly clay with gravel of fine to coarse flint and shell fragments. This lower value could be a result of an increase in sand and gravel content within the clay towards the geological boundary with the underlying Harwich Formation.

A conservative characteristic plasticity index of 48% may be taken for this stratum.

4.6.3.4 Harwich Formation

Two samples of the cohesive Harwich Formation deposits underwent Atterberg limit testing and the results indicate it to be classified as a high to very high plasticity clay. A characteristic PI of 48% is considered for this stratum.

4.6.3.5 Woolwich Formation

Six samples of the Laminated Beds underwent Atterberg limit testing and the results indicate it to be classified as low to high plasticity clay with plasticity indices between 12 and 38%. One of the six samples tested (BH601 at 27.5m bgl) was recorded to be non-plastic.

Ten samples of Lower Shelly Clay underwent Atterberg limit tests and the results indicate the stratum to be generally classified as an intermediate to high plasticity clay with plasticity indices between 15 and 43%.

A conservative characteristic PI of 36% should be taken for the Woolwich Formation.

4.6.3.6 Reading Formation

Six samples of the Reading Formation underwent Atterberg limit testing and the results indicate it to be classified as low to intermediate plasticity clay. Plasticity indices are recorded between 15 and 23% and a characteristic PI is taken to be 18%.

4.6.3.7 Upnor Formation / Thanet Formation

Two samples of cohesive parts of the Upnor Formation / Thanet Formation underwent Atterberg limit testing and the results indicate it to be classified as low plasticity clay.

4.6.4 Classification Tests – Particle Size Distribution (PSD)

The results from PSD testing undertaken during the previous Soil Mechanics (2008) and Concept (2013) investigations and during the recent Dunelm (2019/20) investigation are summarised below.

4.6.4.1 Kempton Park Gravel

Five PSD tests have been undertaken on this stratum between 0.80m and 11.2m bgl and generally show the material to range between having 37.7% to 99.6% gravel, 0.2% to 48.8% sand and a fines content between 0% and 48%. A single sample of Kempton Park Gravel from BH05 recorded 34.4% gravel, 5.3% sand and a fines content of 60%. This is consistent with the material described as sand and gravel with local layers of silt and clay.

This material has a coefficient of uniformity of between 1.9 and 66.

4.6.4.2 London Clay

A single PSD has been undertaken on London Clay at a depth of 22.0m bgl and the results indicate the material has 19.4% sand, 31.7% silt and 48.9% clay. The results match the stratum descriptions which indicate the London Clay is slightly sandy clay with frequent sand partings and the fact that London Clay typically consists of silty clay to clayey silt as discussed in Section 2.1.3.

4.6.4.3 Harwich Formation

Four PSD tests have been undertaken on this stratum between 0.80m and 11.2m bgl and generally show the material to range between having 34.4% to 99.6% gravel, 6.9% to 92.5% sand and a fines content between 7.5% and 93.1%. The results indicate this stratum to be highly variable and this correlates to the borehole records which describe the material as very dense, clayey, fine to medium sand to very stiff slightly sandy gravelly silty clay.

4.6.4.4 Woolwich Formation

Two PSD tests have been undertaken on the Laminated Beds deposits and the results indicate the material to range between having 1.7% to 35.4% sand and a fines fraction of between 64.6% and 98.3%.

Three PSD test were undertaken on the Lower Shelly Clay deposits and results indicated the material to range between having 0.1% to 18% gravel, 1.8% to 26.2% sand and a fines fraction between 55.8 and 98.1%.

4.6.4.5 Reading Formation

A single PSD test has been undertaken on the Reading Formation deposits at a depth of 32.20m bgl and the result indicates the material to have 0.2% gravel, 49.4% sand, 14.9% silt and 35.5% clay.

4.6.4.6 Upnor Formation / Thanet Formation

Eleven PSD tests have been undertaken on this stratum and the results indicate the material has 0% to 2.1% gravel, 42.4% to 89.3% sand and between 11% and 54.9% fines. The results do not show a clear variation between the fines content and depth.

This material has a coefficient of uniformity of between 2.3 and 8.9 with an average coefficient of uniformity of 5.1.

4.6.5 Bulk Density

4.6.5.1 Made Ground

An estimate of bulk density of 18 kN/m^3 is assumed based on the recommended values in Figure 1 – BS 8004:2015 for engineering fill.

4.6.5.2 Alluvium

Tests undertaken on samples of cohesive alluvium recorded bulk density between 17.3 and 15.7 kN/m^3. A value of 16 kN/m^3 is recommended as characteristic based on the results of the testing and the recommended values in Figure 2 – BS 8004:2015 for a low strength clay.

4.6.5.3 Kempton Park Gravel

An estimated bulk density of 20 kN/m^3 is assumed based on the recommended values in Figure 2 – BS 8004:2015 for dense sand and gravel.

4.6.5.4 London Clay

Tests undertaken on 23 samples of London Clay recorded bulk densities ranged between 16.8 and 20.7 kN/m^3. A characteristic of bulk density of 19 kN/m^3 is assumed based on test results and on the recommended values in Figure 2 – BS 8004:2015 for high strength clay.

4.6.5.5 Harwich Formation

An estimated bulk density of 20 kN/m^3 is assumed based on the recommended values in Figure 2 – BS 8004:2015 for dense sand and gravel.

4.6.5.6 Woolwich Formation

Five laboratory tests were undertaken on samples of the Woolwich Formation Lower Shelly Clay and recorded bulk densities between 18.7 and 21.2 kN/m^3. A characteristic bulk density of 20 kN/m^3 is assumed for both the Laminated Beds and Lower Shelly Clay layers of the Woolwich Formation based on the laboratory test results and recommended values in Figure 2 – BS 8004:2015 for high strength clay.

4.6.5.7 Reading Formation

A single laboratory test was undertaken on a sample of the Reading Formation and recorded a bulk density of 21.8 kN/m^3. An estimated bulk density of 20 kN/m^3 is assumed based on the recommended values in Figure 2 – BS 8004:2015 for high strength clay.

4.6.5.8 Upnor Formation / Thanet Formation

Four laboratory tests have been undertaken on samples of Upnor Formation / Thanet Formation and recorded bulk densities range between 18 kN/m^3 and 19.8 kN/m^3. A characteristic bulk density of 19 kN/m^3 is assumed based on the laboratory test results and recommended values in Figure 2 – BS 8004:2015 for a dense sand.

4.6.5.9 Seaford / Newhaven Chalk Formation

16 UCS tests have been undertaken on samples of chalk and recorded bulk densities between 18.1 and 19.5 kN/m^3 at depths between 55.3 and 59.95m bgl and between 19.4 and 19.9 kN/m^3 at depths between 60.1 and 64.87m bgl.

4.6.6 Saturated Moisture Content

4.6.6.1 Seaford / Newhaven Chalk Formation

The dry densities determined on the chalk samples between 54.44 and 64.87m bgl as part of the previous and recent investigations ranged between 1.48 and 1.62 Mg/m^3 and saturated moisture contents ranged between 24.56% and 30.42%. Based on these results, the chalk can be generally classified as low to medium density chalk in accordance with CIRIA Report C574 (2002) Foundations in Chalk (Ref 13, Section 1.4).

4.6.7 Undrained Shear Strength

Undrained shear strengths have been obtained from unconsolidated undrained triaxial testing and also derived from SPT ‘N’ values based on correlations between the characteristic PI value and a multiplication factor (f_1) presented by Stroud, M. A., 1975. The results from both the previous Soil Mechanics (2008) and Concept (2013) investigations and the recent Dunelm (2019/20) investigation are shown in Figure 4-4 and discussed in the following sections. Results greater than 300 kN/m^2 are not included in Figure 4-4.

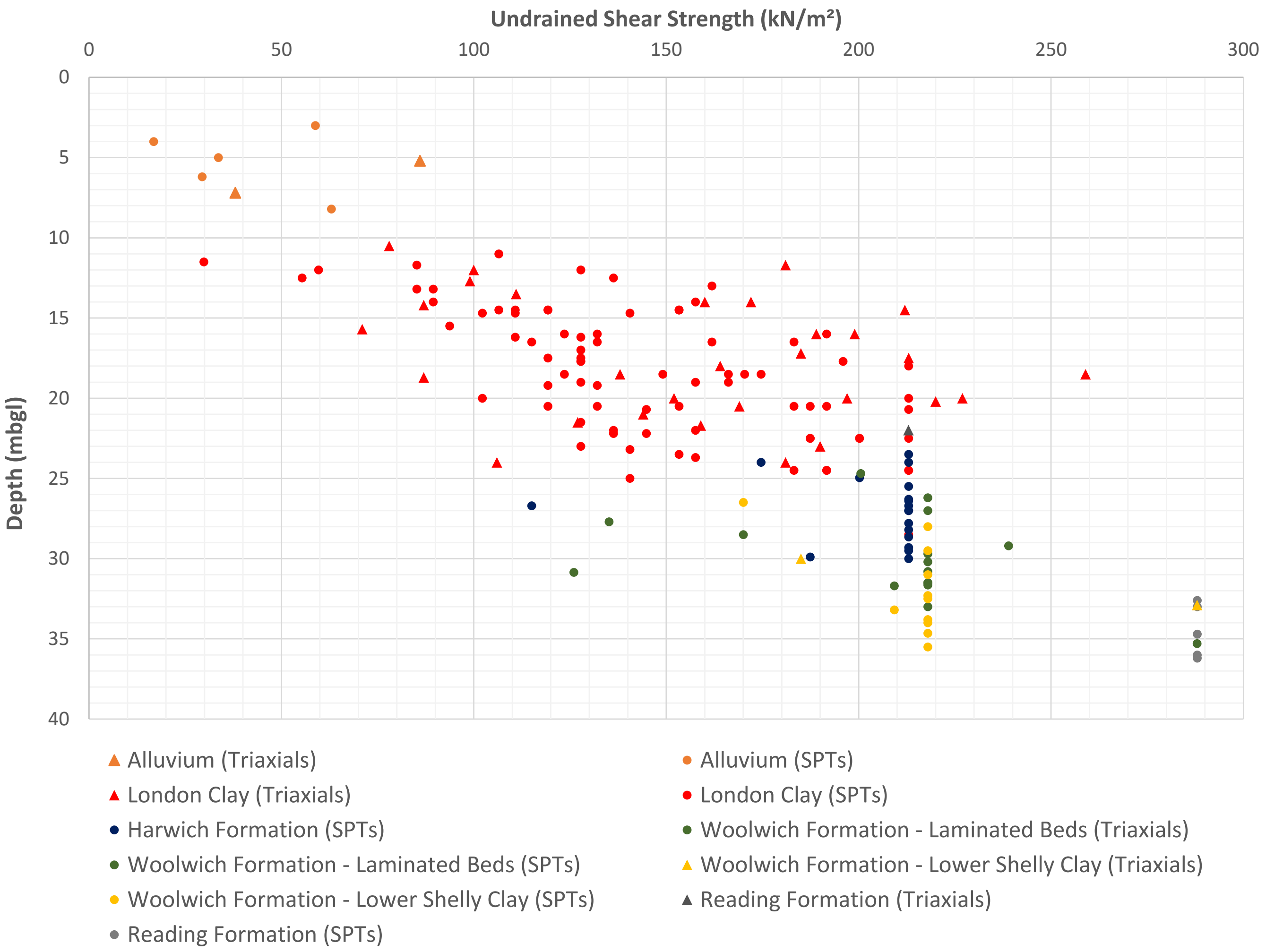


Figure 4-4: Undrained Shear Strength vs Depth (m bgl)

4.6.7.1 Alluvium

Two quick undrained triaxial tests have been undertaken on samples of alluvium and results recorded undrained shear strengths of 38 and 86 kN/m².

Based on a f_1 factor of 4.2 undrained shear strengths estimated from SPT N values range between from 16.8 kN/m² to 63 kN/m². A characteristic undrained shear strength of 40 kN/m² should be assumed for this stratum.

4.6.7.2 London Clay

31 quick undrained triaxial tests were undertaken on samples of London Clay and results recorded undrained shear strengths between 71 and 676 kN/m².

Undrained shear strengths estimated from SPT N values using a multiplication factor of 4.3 range between 30.1 kN/m² and in excess of 215 kN/m². Undrained shear strengths estimated from extrapolated SPT N values based on the penetration achieved range between 921 and 5861 kN/m².

A plot of the reported undrained shear strength of this stratum is given in Figure 4-4 and the results demonstrate that the undrained shear strength of the London Clay increases with depth to a maximum undrained shear strength of 300 kN/m².

4.6.7.3 Harwich Formation

Undrained shear strengths estimated from SPT ‘N’ values using a multiplication factor of 4.3 shows a range of undrained shear strengths from between 116.1 kN/m² and in excess of 215 kN/m². Undrained shear strengths based on extrapolated SPT N values are recorded between 226 and 6450 kN/m².

A characteristic undrained shear strength of 250 kN/m² is considered for this stratum.

4.6.7.4 Lambeth Group – Woolwich Formation

Five quick undrained triaxial tests were undertaken on samples of the Woolwich Formation and recorded undrained shear strengths of 126 and 484 kN/m².

Undrained shear strengths estimated from SPT ‘N’ values based on a multiplication factor of 4.4 range between 136.4 and in excess of 220 kN/m² for the Laminated Beds and between 172 and in excess of 220 kN/m² for the Lower Shelly Clay. Undrained shear strengths based on extrapolated SPT N values are recorded between 233.7 and 16500 kN/m².

A plot of the reported undrained shear strength of this stratum is given in Figure 4-4. A characteristic undrained shear strength should be taken as 300 kN/m² for the Woolwich Formation.

4.6.7.5 Lambeth Group – Reading Formation

A single quick undrained triaxial was undertaken on a sample of Reading Formation and the results recorded an undrained shear strength of 763 kN/m².

Based on an SPT N values of 50 and in excess of 50, and a multiplication factor of 5.8, estimated undrained shear strengths range are recorded to be between 290 kN/m² and in excess of 290 kN/m². Undrained shear strengths based on extrapolated SPT N values are recorded between 375 and 4350 kN/m².

A plot of the reported undrained shear strength of this stratum is given in Figure 4-4. A characteristic undrained shear strength should be taken as 400 kN/m² for this stratum.

4.6.8 Angle of Internal Friction

4.6.8.1 Kempton Park Gravel

Based on correlations between SPT ‘N’ values and angle of shearing resistance (ϕ) by Peck et al, a range of angles of shearing resistance of between 29° to 41° are calculated.

Additionally, PSD testing and general descriptions indicate that this material is typically described as a sub angular to well-rounded gravel which would display a friction angle of between 32°-34° in accordance with Table 1 BS 8004:2015.

A characteristic angle of shearing resistance of 32° can be assumed.

4.6.8.2 Upnor Formation / Thanet Formation

Based on correlations between SPT ‘N’ values and angle of shearing resistance (ϕ) by Peck et al, a range of angles of shearing resistance of between 29° to 41° are calculated.

Eight direct shear box tests were undertaken on samples of Upnor Formation / Thanet Formation as part of the previous Soil Mechanics (2008) investigation and recorded angles of shearing resistance of between 33.4° and 40.7°.

A characteristic angle of shearing resistance of 36° can be assumed based on these results and published information (Ref 11, Section 1.4).

4.6.9 Summary of Characteristic Geotechnical Engineering Properties

Table 4-3 summarises the characteristic engineering properties of the made ground, superficial soils, London Clay, Harwich Formation, Lambeth Group, and the underlying Undifferentiated Upnor Formation / Thanet Formation.

Stratum		Bulk Density (kN/m^3)	Undrained Shear Strength - Cu (kN/m^2)	Angle of Internal Friction - ϕ (degrees)
Made Ground		18	-	-
Kempton Park Gravel		20	-	32
London Clay		19	70 + 10z*	-
Harwich Formation		20	250	-
Lambeth Group	Woolwich Formation	20	300	-
	Reading Formation	20	400	-
Upnor Formation / Thanet Formation		19	-	36
*where z is depth in m from 11m bgl.				

Table 4-3: Summary of Characteristic Geotechnical Engineering Properties

4.7 CBR Test Results

A single sample of cohesive made ground and two samples of granular made ground were subjected to laboratory CBR testing and the results are summarised in Table 4-4.

Exploratory Hole	Strata Type	Laboratory CBR test value (%)
BH03	Cohesive Made Ground	42
WS02	Granular Made Ground	51.7
BH04	Granular Made Ground	26.9

Table 4-4: Results of Laboratory CBR Testing

4.8 Ground Aggressivity

Water soluble sulphate (2:1 water soluble as SO4), pH, Total Sulphur and Total Sulphate concentrations were determined on 88 soil samples during the previous and recent ground investigations (six samples of made ground, two samples of alluvial deposits, seven samples of Kempton Park Gravel, 27 samples of London Clay, nine samples of Harwich Formation, 13 samples of Lambeth Group and 11 samples of Upnor Formation / Thanet Formation). Concentrations of pH and water soluble sulphate were also determined on five groundwater samples as part of the previous investigations.

The results of these tests are summarised in Table 4-5.

Stratum	Exploratory Hole	Depth (m bgl)	pH	Water Soluble Sulphate (mg/l)	Total Sulphur as S (%)	Total Sulphur (Acid Soluble as %SO4)	Calculated Total Potential Sulphate (%)	Calculated Oxidisable Sulphide (%)
Made Ground	BH03	0.8	9.70	310	0.24	0.21	N/A	N/A
	BH03	4.0	11.4	110	0.054	0.11	N/A	N/A
	BH03	11.5	8.50	580	0.69	0.14	N/A	N/A
	BH04	0.4	10.1	290	0.12	0.14	N/A	N/A
	BH04	1.2	11.00	870	0.18	0.2	N/A	N/A
	BH05	0.4	10.10	560	0.11	0.2	N/A	N/A
	BH05	0.5	9.4	180	0.096	0.2	N/A	N/A
	CBH03B	4.02	7.5	1100	-	-	-	-
	CBH04	4.58	7.6	620	-	-	-	-
Alluvium	CBH01	6.2	8.1	267	0.154	0.11	N/A	N/A
	CBH02	6.2	7.5	283	0.102	0.11	N/A	N/A
Kempton Park Gravel	BH05	6.4	8.2	110	0.06	0.052	N/A	N/A
	BH05	8.7	8.4	98	0.075	0.044	N/A	N/A
	BH05	5.7	9.5	26	0.034	0.043	N/A	N/A
	BH04	9	8.3	310	0.32	0.13	N/A	N/A
	BH05	7.2	8.5	89	0.075	0.029	N/A	N/A
	BH01	2	8.3	<10	0.018	<0.01	N/A	N/A
	BH01	3	7.8	240	0.12	0.15	N/A	N/A
	BH04	6	8.2	279	0.13	0.076	N/A	N/A
London Clay	CBH01	12	7.6	580	0.387	0.16	1.161	1.001
	CBH03B	10.6	8.1	249	0.294	0.06	0.882	0.822
	CBH03B	16	7.6	929	0.544	0.25	1.632	1.382
	CBH03B	20.5	7.8	641	0.491	0.17	1.473	1.303
	CBH04	14	7.5	493	0.617	0.21	1.851	1.641
	CBH04	18	7.2	516	0.424	0.2	1.272	1.072
	CBH04	22	7.6	404	0.429	0.16	1.287	1.127
	CBH05	14	7.2	1050	0.918	0.28	2.754	2.474
	CBH05	18	7.1	934	11.644	0.24	34.932	34.692
	BH601	15.5	7.7	790	0.64	0.21	1.92	1.71
	BH601	18.5	7.2	1330	9.63	0.3	28.89	28.59
	BH601	21.5	7.6	1000	0.77	0.23	2.31	2.08
	BH605	12.3	7.5	1290	0.79	0.33	2.37	2.04
	BH605	14.7	7.1	1350	1.29	0.26	3.87	3.61

Stratum	Exploratory Hole	Depth (m bgl)	pH	Water Soluble Sulphate (mg/l)	Total Sulphur as S (%)	Total Sulphur (Acid Soluble as %SO4)	Calculated Total Potential Sulphate (%)	Calculated Oxidisable Sulphide (%)
	BH605	17.65	7.3	1020	0.99	0.27	2.97	2.7
	BH605	20.7	7.4	960	0.84	0.25	2.52	2.27
	BH603	14.5	7.5	840	0.55	0.25	1.65	1.4
	BH603	17.5	7.8	730	1.09	0.18	3.27	3.09
	BH603	20.5	7.9	490	0.74	0.16	2.22	2.06
	BH603	23.5	7.7	750	0.79	0.21	2.37	2.16
	BH04	22	7.4	750	0.68	0.21	2.04	1.83
	BH04	16	8.5	270	0.6	0.11	1.8	1.69
	BH04	19	8.3	310	0.59	0.15	1.77	1.62
	BH05	17.7	7.7	990	0.58	0.29	1.74	1.45
	BH05	16.2	8.4	200	0.086	0.052	0.258	0.206
	BH05	22.2	7.6	620	0.72	0.39	2.16	1.77
	BH01	14.5	7.4	1000	0.72	0.3	2.16	1.86
	BH605	13.0	8.0	233	-	-	-	-
Harwich Formation	BH605	24	7.4	1080	0.49	0.27	1.47	1.2
	BH601	23.7	7.2	1730	0.77	0.58	2.31	1.73
	BH601	25.5	6.8	340	0.14	0.07	0.42	0.35
	BH602	26.2	7.6	110	0.07	0.02	0.21	0.19
	BH602	28.2	7.2	580	0.32	0.14	0.96	0.82
	BH603	24.5	7.9	210	0.1	0.02	0.3	0.28
	BH04	25.8	7.1	410	0.28	0.11	0.84	0.73
	BH05	26	8.4	170	0.19	0.08	0.57	0.49
	BH02	23.5	8	140	0.14	0.052	0.42	0.368
	BH602	28.0	7.4	173	-	-	-	-
	BH603	28.5	7.6	324	-	-	-	-
Lambeth Group	BH03	28	8.2	300	2.2	0.079	6.6	6.521
	BH605	27	7.3	270	0.13	0.09	0.39	0.3
	BH605	28.5	6.4	2260	4.31	0.57	12.93	12.36
	BH601	28.5	6.9	1410	1.32	0.26	3.96	3.7
	BH602	30.15	6.8	2000	1.65	0.49	4.95	4.46
	BH602	33.15	7.6	1480	1.77	0.35	5.31	4.96
	BH602	35.1	8.1	20	0.02	0.01	0.06	0.05
	BH04	32.5	8.8	47	0.056	0.04	0.168	0.128
	BH05	28.2	7.9	290	0.9	0.078	2.7	2.622

Stratum	Exploratory Hole	Depth (m bgl)	pH	Water Soluble Sulphate (mg/l)	Total Sulphur as S (%)	Total Sulphur (Acid Soluble as %SO4)	Calculated Total Potential Sulphate (%)	Calculated Oxidisable Sulphide (%)
	BH05	31.4	8.2	450	2.33	0.39	6.99	6.6
	BH01	26.5	7.4	850	2.4	0.28	7.2	6.92
	BH01	32.6	8.6	19	0.025	<0.01	0.075	-
	BH04	28.0	8.2	160	0.12	0.062	0.36	0.298
Upnor Formation / Thanet Formation	BH05	33.5	8.6	380	1.2	0.32	3.6	3.28
	BH03	35.5	8.5	13	0.039	<0.01	0.117	-
	BH602	47.7	7.7	320	0.11	0.06	0.33	0.27
	BH603	45.28	8.4	50	-	-	-	-
	BH603	51.93	6.6	430	-	-	-	-
	BH602	38	7.7	40	<0.02	0	-	-
	BH602	42.6	7	1730	0.58	0.42	1.74	1.32
	BH04	41.5	7.6	410	0.23	0.16	0.69	0.53
	BH05	41.9	8	410	0.52	0.48	1.56	1.08
	BH01	41.6	5.9	210	0.18	0.074	0.54	0.466
	BH01	50.6	6.2	400	0.36	0.17	1.08	0.91

Table 4-5: Ground Aggressivity Results

It is noted that the recorded Total Sulphur concentrations within the London Clay from two samples taken during the previous ground investigations (11.644% in CBH05 at 18m and 9.63% in BH601 at 9.63m) were significantly higher than the results recorded on site during the Dunelm (2019/20) investigation and are significantly higher than the remaining results from the previous investigations.

Additionally, an elevated concentration of water soluble sulphate of 1730 mg/l was recorded within BH602 at 42.6m bgl during the previous Soil Mechanics (2008) investigation and this result is higher than the remaining 10 results undertaken within the Upnor Formation / Thanet Formation.

Therefore, these results are not included within the ground aggressivity assessment discussed further in Section 5.8.

5.0

Geotechnical Assessment

5.0 Geotechnical Assessment

5.1 Structural Details

The scheme proposals consist of the construction of a new multi-storey data centre (seven data hall levels together with roof plant, ground floor and basement levels), vehicular access and a service yard, as discussed in Section 1.3.

External formation levels are anticipated to be generally at +6.3m AOD to mitigate the potential flood risk at the site. Proposed structural loads are not available at the time of writing but are likely to be in the range of 10,000 to 15,000kN for internal columns. However, the nature of the development is anticipated to generate high column loads that will be supported on the sub-structure.

Should the proposed scheme details vary significantly from these assumptions, the recommendations presented below may no longer apply and should be revised as appropriate.

5.2 Ground Models

Ground conditions across the site vary significantly from the north to south, either side of the location of the dock wall separating the infilled dock in the southern extents of the site from the dry dock. Alluvial deposits were recorded in a single location within the far north eastern extents of the site, outside of the building footprint. The alluvium is not considered likely to be present across the development site is therefore not included within the ground model.

The adopted ground model may be summarised into the following sequences:

North of the dock wall:

- Made ground – Ground level to 2m bgl (+6m AOD to +4m AOD)
- Kempton Park Gravel – 2m bgl to 12m bgl (+4m AOD to -6m OD)
- London Clay – 12m bgl to 24m bgl (-6m OD to -18m OD)
- Harwich Formation – 24m bgl to 28m bgl (-18m AOD to -22m OD)
- Lambeth Group - Woolwich Formation - 28m bgl to 32m bgl (-22m OD to -26m OD)
- Lambeth Group - Reading Formation - 32m bgl to 34m bgl (-26m OD to -28m OD)
- Upnor Formation / Thanet Formation – 34m bgl to 55m bgl (-28m OD to -50m OD)
- Chalk – from a depth of 55m bgl (-50m AOD) with the full thickness anticipated to be 100m thick.

South of the dock wall:

- Made ground – Ground level to 11m bgl (+6m AOD to -5m OD)
- London Clay – 11m bgl to 24m bgl (-5m OD to -18m OD)
- Harwich Formation – 24m bgl to 28m bgl (-18m OD to -22m OD)
- Lambeth Group - Woolwich Formation - 28m bgl to 32m bgl (-22m OD to -26m OD)
- Lambeth Group - Reading Formation - 32m bgl to 34m bgl (-26m OD to -28m OD)
- Upnor Formation / Thanet Formation – 34m bgl to 55m bgl (-28m OD to -50m OD)
- Chalk – from a depth of 55m bgl (-50m AOD) with the full thickness anticipated to be 100m thick.

5.3 Groundwater

Groundwater was generally recorded within the made ground and Kempton Park Gravel deposits during groundwater monitoring at depths between 6.39 and 7.09m bgl (-1.90 and -1.15m OD) to the north of the dock wall. The results from borehole BH03 indicate a shallow groundwater level between 3.67 and 3.78m bgl (+2.11 and +2.22m AOD) within made ground in the infilled dock in the south of the site.

Groundwater is also present at depth beneath the London Clay within the Upnor/Thanet Formation with a piezometric head of approximately of 6.59 and 8.91m bgl (-0.70 and -3.37m OD). It is anticipated that the deeper groundwater table will exhibit sub-artesian behaviour where encountered (i.e. piling operations).

5.4 Possible Geotechnical Development Constraints

Potential geotechnical development constraints noted during the intrusive works that need to be considered in scheme design include:

- **Made Ground** - The presence of a significant thickness of Made Ground across the site. The thickness of made ground increases significantly within the former dock area in the south of the site.
- **Shallow Groundwater** - the presence of a shallow groundwater table within the infilled dock (between 3.67 and 3.78m bgl) and a groundwater level of between 6.39 and 8.91m bgl outside the infilled dock. The presence of shallow groundwater will present a constraint for basement / deep service excavations. The deeper groundwater table will likely exhibit sub-artesian behaviour if encountered (i.e. during piling operations).
- **Obstructions -** the presence of obstructions including the foundations of the existing building, layers of buried concrete (encountered in BH01 and BH04), granite cobbles (encountered in BH01, BH02 and BH02A), potential relict foundations from previous phases of development and cobbles and / or boulders of concrete and brick within the dock infill.
- **Relict dock wall** - The historical dock wall is mapped as present through the southern extents of the site approximately orientated south east to north west and is considered likely to impact the foundation design for the proposed development. The exact location of the dock wall has been investigated by an archaeological team and the results of this investigation should be reviewed to determine the risks associated with this potential obstruction.
- **Unexploded ordnance -** the possible presence of Unexploded Ordnance (UXO) across the site. In line with the Detailed UXO Threat and Risk Assessment, the following mitigation measures must be implemented during any intrusive works as part of any site surveys or subsequent preparatory / enabling works and construction:
  - UXO emergency response plan.
  - UXO safety and awareness briefings.
  - Non-intrusive UXO survey and / or Explosive Ordnance |Clearer (EOD) banksman support for ‘open’ intrusive works into previously disturbed ground; and
  - Intrusive UXO survey (employing down the hole magnetometer or MagCone techniques) where ‘blind’ intrusive works into previously undisturbed ground are proposed.
- **Compressible soils** - although cohesive alluvium was encountered at shallow depths in WS09 in the north eastern extents of the site, based on the thickness of predominantly granular made ground across the site and the recommended piled foundation solution and suspended slab solution, the risk associated with soil volume change to the proposed development is considered negligible. However, if ancillary structures are proposed in this area then the depth of any shallow foundations should be considered in relation to existing and proposed vegetation.

5.5 Foundation Design Recommendations

Given the high anticipated actions from the proposed development and the recorded ground conditions, piles are recommended for the support of the proposed building. It is considered that piles are likely to comprise multiple medium diameter piles terminating within the London Clay/Harwich Formation or more isolated large diameter piles which may need to be extended some distance into the Upnor Formation / Thanet Formation to achieve the required resistances.

Contiguous flight auger (CFA) piles have relatively limited installation depths (up to 30m) and would be suitable for piles terminating within the London Clay / Harwich Formation. For larger and deeper piles, it is anticipated that rotary bored pile techniques would be appropriate. Driven piles are considered to be unlikely to be able to achieve the required pile resistances.

For rotary bored piles formed through and within granular layers within the lower aquifer, support of the open bore will be required. This is likely to consist of the use of support fluid such as bentonite. Base grouting of the Thanet Formation following boring has traditionally been undertaken in similar strata in the vicinity of the site to increase base resistance. This should be considered as part of the detailed pile design although recent evidence suggests limited benefit results from this technique.

5.5.1 Preliminary Piling Assessment

Detailed pile design will normally be undertaken by a specialist sub-contractor during the design period. However, a preliminary pile design is presented in this section. The following assumptions have been considered in undertaken the preliminary pile analysis:

- The Harwich Formation, consisting of both cohesive and granular units, is assumed to comprise cohesive units only.
- The shaft resistance in the Woolwich and Reading Formations is calculated assuming they consist of cohesive materials only.
- Groundwater was generally recorded within the made ground and Kempton Park Gravel deposits during groundwater monitoring. A design groundwater level is taken as 2.0m bgl to account for seasonal groundwater level rises or rises associated with periods of heavy or prolonged rainfall and also an understanding that the site is prone to flooding.

A preliminary piling assessment for a single vertical pile has been undertaken based on 1.2 to 2.1m diameter rotary bored piles and the pile resistances provided below may be adopted for preliminary design purposes.

The preliminary pile design has been undertaken in accordance with BS EN 1997-1:2004+A1:2013 and using the UK National Appendix document NA+A1:2014 to BS EN 1997-1:2004+A1:2013.

Table 5-1 and Table 5-2 provide a summary of calculated preliminary pile resistances (design approach 1 combination 2, DA1-2) for rotary bored piles outside and inside the infilled dock respectively. The preliminary design assumes no preliminary or working pile tests are undertaken. It should be noted that pile group effects have not been taken into consideration in the above values.

Pile Length (m)	**Single Pile Working Resistance (kN)**			
	1.2m	1.5m	1.8m	2.1m
35 (Upnor Formation / Thanet Formation)	10650	15200	20550	26650
40 (Upnor Formation / Thanet Formation)	12900	18300	24550	31650
45 (Upnor Formation / Thanet Formation)	15300	21550	28800	37000

Table 5-1: Preliminary Single Pile Resistance for Rotary Bored Piles Outside the Area of Infilled Dock

Pile Length (m)	**Single Pile Working Resistance (kN)**			
	1.2m	**1.5m**	**1.8m**	**2.1m**
35 (Upnor Formation / Thanet Formation)	10250	14750	20000	26000
40 (Upnor Formation / Thanet Formation)	12150	17300	23300	31300
45 (Upnor Formation / Thanet Formation)	14650	20750	27750	35750

Table 5-2: Preliminary Single Pile Resistance for Bored Piles within the Area of Infilled Dock

Table 5-3 and Table 5-4 provide a summary of calculated preliminary pile resistances (design approach 1 combination 2, DA1-2) for contiguous flight auger (CFA) piles outside and inside the infilled dock respectively. The preliminary design assumes no preliminary test piles are undertaken but assumes working pile tests are undertaken. It should be noted that pile group effects have not been taken into consideration in the above values.

Pile Length (m)	Single Pile Resistance (kN)		
	600mm	750mm	900mm
20 (London Clay)	900	1150	1500
24 (Harwich Formation)	1300	1700	2100
28 (Lambeth Group)	1850	2350	2950

Table 5-3: Preliminary Single Pile Resistance for CFA Piles Outside the Area of Infilled Dock

Pile Length (m)	Single Pile Resistance (kN)		
	600mm	750mm	900mm
20 (London Clay)	700	900	1150
24 (Harwich Formation)	1050	1400	1750
28 (Lambeth Group)	1600	2100	2600

Table 5-4: Preliminary Single Pile Resistance for CFA Piles within the Area of Infilled Dock

The Environment Agency may require a piling risk assessment to be carried out in accordance with ‘Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination’, Guidance on Pollution Prevention National Groundwater & Contaminated Land Centre Report NC/99/73.

In the design of the piling layout, the locations of the obstructions identified during the current investigation, including the relict dock wall and other obstructions should be taken into account.

5.6 Floor Slabs

Based on the anticipated formation levels and variable ground conditions encountered across the site including the significant thickness of dock infill material, it is recommended that a suspended floor slab be adopted. If the location of the building is altered to be wholly outside the former dock, then adoption of a ground bearing floor slab could be considered in more detail.

5.7 Basement Construction

A basement is currently proposed for development and based on the identified ground and groundwater conditions; it is anticipated that secant bored pile walls will be the most suitable form of retaining structure for the basement. It is considered unlikely that there is sufficient working space to form the excavation in open battered cut. The use of secant piles will both provide support to the excavation both during construction and as the permanent solution and also effectively control the ingress of groundwater.

5.8 Ground Aggressivity

The results presented in Section 0 have been assessed in accordance with BRE Special Digest 1. The design sulphate class for concrete and Aggressive Chemical Environment for Concrete (ACEC) for each stratum present on site are summarised in Table 5-5.

All buried concrete should be designed in accordance with BRE Special Digest 1:2005.

Stratum	**Characteristic pH**	**Characteristic SO_4 (mg/l)**		**Characteristic Total Potential Sulphate (%)**	**Assumed Groundwater Conditions**	**Design Sulphate Class for Concrete**	**Aggressive Chemical Environment for Concrete (ACEC)**
		Soil	**Groundwater**				
Made Ground	7.6	725	1100	N/A	Mobile	DS-2	AC-2
Alluvium	7.5	283	-	N/A	Static	DS-1	AC-1s
Kempton Park Gravel	8.0	294.5	-	N/A	Mobile	DS-1	AC-1
London Clay (Undisturbed)	7.2	1200	200	3.1	Static	DS-2*	AC-1s*
London Clay (Disturbed)						DS-4	AC-3s
Harwich Formation	7.2	1400	300	1.9	Mobile	DS-2*	AC-2*
Lambeth Group	6.7	1900	-	N/A	Static	DS-3	AC-2s
Upnor Formation / Thanet Sand	6.0	400	-	N/A	Mobile	DS-1	AC-1
*Assuming piling operations or construction works within this stratum will not substantially disturb the ground. It should be noted that based on the depth of the London Clay beneath the site, it is considered unlikely that this stratum will be substantially disturbed during the construction works.							

Table 5-5: Ground Aggressivity Results and Design Sulphate Class and Aggressive Chemical Environment for Concrete

The results indicate that any concrete placed within piles extending to and through the Lambeth Group should adopt design sulphate class DS-3 and aggressive chemical environment for concrete, AC-2. All other concrete placed in the ground at shallower depths above the Lambeth Group should adopt design sulphate class DC-2 and aggressive chemical environment for concrete, AC-2.

5.9 Earthworks

5.9.1 Re-use of Site Won Material

It is anticipated that the proposed external levels will be similar to the existing levels at the site and based on the proposed basement level within the building, it is likely that excavated soils will be removed from site rather then re-used on site as part of the development. However, if it is proposed to use site won made ground and natural soil strata within the scheme, these materials should be engineered in accordance with the Highways Agency Specification for Highway Works, Series 600 – Earthworks. It is recommended that confirmatory tests are carried out prior to carrying out the earthworks if the site won materials are to be used as engineering fill.

5.9.2 Excavations and Groundwater Control

It is expected that shallow excavations in the made ground and natural soils will be achievable by means of normal hydraulic excavating plant although an allowance for removal of hardstandings and buried obstructions should be made.

It is anticipated that most of the existing hardstanding will be removed during the proposed demolition works. In addition, a layer of grey concrete paving slabs at surface overlying brown sand (0.20m thick), and a layer of dark grey cobbles of angular granite (0.17m thick), all overlying 0.47m of grey concrete were encountered in BH01. BH04 was located on the paved area to the south of the hotel building and recorded paving slabs 0.06m thick at surface overlying a layer of brown slightly gravelly sand (0.09m thick) and grey concrete (0.10m thick). Therefore, the potential for buried obstructions / relict buried structures to remain post demolition should be considered as a potential risk item. It is recommended that provision is made to allow for breaking out of hard standing or any buried structures that may remain in the ground.

Based on site observations and monitoring during and after the fieldwork, it is expected that groundwater will be encountered within both shallow and deep excavations following periods of heavy or prolonged rainfall. Therefore, provision for groundwater control during excavation works should be made.

It is advisable that an allowance should be made to provide for shoring of excavations in the made ground and natural granular deposits during construction to prevent collapse and overbreak.

5.9.3 Road Pavement Design

Based on the identified ground conditions and assuming all soft spots are removed, and the formation soils are proof rolled prior to construction a conservative CBR design value of 5% should be considered for road pavement design.

The CBR design value should be confirmed by undertaking in situ CBR testing at formation level prior to construction. Any soft spots in the formation should be excavated to full depth and replaced with properly compacted granular fill.

5.10 Soakaway Drainage

Particle size distribution testing undertaken on samples of Kempton Park Gravel indicate the superficial deposits to have permeabilities between $9.6\text{x}10^{-4}$ and 2.37 m/s (Ref 15, Section 1.4). However, the presence of a variable thickness of made ground across the site, a relatively shallow groundwater table and the flooding susceptibility of the site suggest that a soakaway drainage system is unlikely to be feasible for the development.

6.0

Ground Gas Risk Assessment

6.0 Ground Gas Risk Assessment

6.1 Ground Gas Monitoring Results

Monitoring wells for ground gas were installed in seven boreholes as part of the recent Dunelm (2019/20) investigation in order to characterise the ground gas regime across the development site. The deep piezometers installed within BH01, BH03 and BH05 were installed to primarily be used to determine the deeper groundwater regime at the site rather than for ground gas monitoring.

Only a limited number of boreholes were installed within the made ground as the made ground outside the infilled dock was generally recorded to a depth of around 1.0m which is of insufficient depth to from an effective monitoring well. In WS09, the made ground was encountered to a depth of 2.5m bgl and consequently, this borehole was installed to screen the made ground. Additionally, BH06 was undertaken within the area of infilled dock during the second phase of works and would have been installed, however, there would have only been insufficient time to monitor this installation.

Readings were mistakenly not taken from the installations within BH03 and the deeper installations within BH01 and BH05 during the first six monitoring visits undertaken between 14 April and 03 July 2020. Therefore, six additional rounds of monitoring were carried out between 21 July and 02 October 2020.

The installations from BH01 (shallow), BH04, BH05 (shallow), WS03, WS08 & WS09 were monitored eight times over a 17 week (four month) period in line with guidance presented in CIRIA C665 and BS8485:2015+A1:2019. The installations within BH03 were monitored a total of six times over an 11 week period (almost three months) which is slightly less than the period of time recommended in CIRIA C665.

The results from the monitoring visits undertaken are presented in Table 6-1.

BH No	Response Zone (m bgl)	Response Zone Strata	Date	Atmospheric Pressure (mbars)	CO_2 (%v/v)	O_2 (%v/v)	CH_4 (%v/v)	Peak Gas Flow Rate (l/hr)	Groundwater Level (mbgl)
BH01	1.5 to 12.3	Kempton Park Gravel	14/04/20	1031	0.10	21.20	ND*	0.00	6.44
			01/05/20	1000	0.10	21.80	ND*	0.10	6.39
			12/05/20	1023	0.40	20.60	ND*	ND*	6.44
			29/05/20	1030	4.70	6.30	14.0	ND*	6.49
			12/06/20	1007-1006	7.40	0.90	28.0	ND*	6.48
			03/07/20	1019	0.10	21.80	ND*	0.10	6.49
			21/07/20	1028	1.80	19.70	ND*	0.20	6.53
			05/08/20	1013	0.10	20.70	ND*	ND*	6.51
	23.5 to 24	Harwich Formation	21/07/20	1028	ND*	22.00	ND*	0.20	7.99
			05/08/20	1013	0.10	20.60	ND*	0.20	8.00
BH03	1.0 to 15.0	Made Ground	21/07/20	1028	0.90	18.50	ND*	0.30	3.72
			05/08/20	1013	6.00	0.60	0.80	0.10	3.71
			19/08/20	1012	5.00	1.20	1.00	0.05	3.78
			02/09/20	1016	4.50	1.90	1.10	0.05	3.75
			10/09/20	1011	4.70	1.70	0.90	0.15	3.77
			02/10/20	1001	3.65	2.90	1.00	0.10	3.76

BH No	Response Zone (m bgl)	Response Zone Strata	Date	Atmospheric Pressure (mbars)	CO_2 (%v/v)	O_2 (%v/v)	CH_4 (%v/v)	Peak Gas Flow Rate (l/hr)	Groundwater Level (mbgl)
	39.5 to 40	Upnor Formation / Thanet Formation	21/07/20	1028	ND*	22.30	ND*	0.50	6.59
			05/08/20	1013	0.10	20.50	ND*	0.10	7.22
			19/08/20	1012	0.20	20.70	ND*	0.05	7.34
			02/09/20	1016	0.10	20.40	ND*	ND*	7.28
			10/09/20	1011	0.22	20.10	0.10	0.05	7.33
			02/10/20	1001	0.20	19.10	ND*	ND*	7.29
BH04	4.0 to 12.0	Kempton Park Gravel	14/04/20	1031	0.60	19.70	ND*	0.20	6.96
			01/05/20	1000	1.70	18.60	0.20	0.10	6.91
			12/05/20	1023	6.40	6.90	ND^	0.10	6.96
			29/05/20	1030	4.80	13.20	ND*	ND*	7.00
			12/06/20	1007-1006	5.80	5.80	ND*	ND*	7.00
			03/07/20	1019	0.40	20.00	ND*	0.10	7.00
			21/07/20	1028	0.30	20.50	ND*	0.10	7.09
			05/08/20	1013	4.90	11.70	ND*	ND*	7.03
BH05	2.0 to 11.5	Kempton Park Gravel	14/04/20	1031	4.90	10.70	ND*	0.20	6.93
			01/05/20	1000	0.20	17.70	0.10	0.10	6.88
			12/05/20	1023	ND*	20.60	0.40	ND*	6.93
			29/05/20	1030	ND*	20.30	ND*	0.10	6.98
			12/06/20	1007-1006	2.00	16.00	ND*	0.10	6.94
			03/07/20	1019	ND*	15.70	ND*	0.30	6.95
			21/07/20	1028	ND*	21.00	ND*	0.10	6.97
			05/08/20	1013	0.80	15.90	ND*	ND*	7.00
	34.5 to 35	Lambeth Group	21/07/20	1028	ND*	22.30	ND*	0.50	8.83
			05/08/20	1013	ND*	20.80	ND*	ND*	8.91
WS03	1.5 to 3.5	Kempton Park Gravel	14/04/20	1031	0.10	20.80	ND*	0.10	DRY
			01/05/20	1000	0.60	20.70	ND*	0.50	DRY
			12/05/20	1023	0.10	20.80	ND*	ND*	DRY
			29/05/20	1030	0.10	20.70	ND*	ND*	DRY
			12/06/20	1007-1006	0.10	20.90	0.10	ND*	DRY
			03/07/20	1019	1.00	20.00	0.10	0.20	DRY
			21/07/20	1028	0.20	20.70	ND*	0.30	DRY
			05/08/20	1013	1.20	19.40	ND*	ND*	DRY

BH No	Response Zone (m bgl)	Response Zone Strata	Date	Atmospheric Pressure (mbars)	CO_2 (%v/v)	O_2 (%v/v)	CH_4 (%v/v)	Peak Gas Flow Rate (l/hr)	Groundwater Level (mbgl)
WS08	1.5 to 3.5	Kempton Park Gravel	14/04/20	1031	0.10	20.90	ND*	0.10	DRY
			01/05/20	1000	0.10	21.80	ND*	0.20	DRY
			12/05/20	1023	0.10	20.80	ND*	ND*	DRY
			29/05/20	1030	ND*	20.40	ND*	0.10	DRY
			12/06/20	1007-1006	ND*	20.70	ND*	0.10	DRY
			03/07/20	1019	0.10	21.20	ND*	0.40	DRY
			21/07/20	1028	ND*	21.10	ND*	0.20	DRY
			05/08/20	1013	0.70	20.10	ND*	ND*	DRY
WS09	1.0 to 2.5	Made Ground	14/04/20	1031	0.20	20.60	ND*	0.10	DRY
			01/05/20	1000	0.10	21.40	0.10	0.10	DRY
			12/05/20	1023	0.10	20.70	ND*	ND*	DRY
			29/05/20	1030	0.10	20.20	ND*	ND*	DRY
			12/06/20	1007-1006	ND*	20.70	ND*	0.10	DRY
			03/07/20	1019	0.10	21.40	ND*	0.20	DRY
			21/07/20	1028	ND*	21.30	ND*	0.10	DRY
			05/08/20	1013	ND*	20.90	ND*	ND*	DRY
*ND – Not detected									

Table 6-1: Ground Gas Monitoring Results

6.2 Preliminary Ground Gas Risk Assessment Considerations

The preliminary ground gas risk assessment is undertaken in the context of the design proposals and is based upon guidance including CIRIA C665 and BS8485:2015+A1:2019, in addition to available monitoring data.

Elevated concentrations of carbon dioxide (CO_2) (between 3.65 and 7.4% v/v) were recorded in boreholes BH01, BH04 and BH05 within the Kempton Park Gravel outside the infilled dock and within BH03 within the infilled dock, corresponding to depleted oxygen concentrations (between 0.6 and 16% v/v).

Additionally, elevated concentrations of methane (CH_4) (between 14.0 and 28.0 % v/v) coupled with the elevated concentrations of CO_2 (between 4.7 and 7.4% v/v) and depleted concentrations of oxygen (between 0.9 and 6.3%) were recorded in BH01 within the Kempton Park Gravel in the north of the site. Elevated concentrations of methane (between 0.8 and 1.1 % v/v) were also recorded within BH03 within the infilled dock corresponding to elevated concentrations of CO_2 (between 3.65 and 6.0% v/v) and depleted oxygen concentrations (between 0.6 and 2.9% v/v).

Therefore, both the infilled dock made ground, and the general made ground to the north of the infilled dock are considered sources of hazardous ground gas.

The critical gas concentrations and maximum flow rate recorded across the site are as follows:

- Maximum CO_2 concentration is recorded to be 7.4% v/v (BH01).
- Maximum CH_4 concentration is recorded to be 28.0% v/v (BH01).
- Minimum O_2 concentration is recorded to be 0.6% (BH03).
- Peak maximum flow rate is recorded to be 0.5 l/hr (BH03, BH05 & WS03).

The elevated CH_4 concentrations recorded within BH01 on two occasions (14.0 and 28.0% v/v) have been compared to the prevailing tidal and atmospheric conditions at the site at the time of monitoring and no clear relationship has been identified. It is anticipated that the deeper general made ground is generating the hazardous ground gas and these gases are migrating laterally / vertically across the site within the permeable Kempton Park Gravel (where these deposits are recorded at depths shallower than the deep general made ground).

Therefore, the maximum CH_4 concentration of 28.0% v/v is considered to be the worst case maximum gas concentration based on a clear source having been identified (made ground up to 11.1m within the infilled dock and up to 2.5m outside the infilled dock) and the fact that elevated concentrations have been recorded on more than one occasion.

Consequently, to determine the gas screening value for the site, the highest recorded CH_4 concentration and the highest flow rate has been used as follows: gas screening value (GSV) = 0.28 x 0.5 = 0.14 l/hr.

6.3 Preliminary Ground Gas Risk Assessment Conclusions

Based on the monitoring results undertaken to date, the site is considered to classify as Characteristic Gassing Situation 2 (CS-2), under which scenario ground gas protection measures would be required in new buildings in accordance with CIRIA C665 / BS8485.

In accordance with BS8485:2015+A1:2019, the proposed development is anticipated to comprise a ‘Type C’ building which consists of a commercial building with central building management control and small to large size rooms with active ventilation or good passive ventilation of all internal areas. For a ‘Type C’ building where the site has classified as CS-2 in accordance with Table 4 of BS8485:2015+A1:2019, gas protection equivalent to 2.5 points is required. This must comprise a minimum of two forms of protection derived from Tables 5 to 7 of BS8485:2015+A1:2019. For example, this may comprise a cast in-situ monolithic reinforced ground bearing raft or reinforced cast in-situ suspended slab (1.0 points) in accordance with Table 5 of BS8485:2015+A1:2019 together with a gas resistant membrane in accordance with Table 7 of BS8485:2015+A1:2019 (2 points).

Reference should also be made to Table 5 of BS8485:2015+A1:2019 for details of points cores that can be achieved with different basement and associated waterproofing methods.

Given that depleted oxygen was recorded in localised monitoring wells on at least one occasion, it is considered that the associated construction phase risk will require further consideration, and if required, mitigation. Any persons performing sub-surface works will have to be subject to the relevant risk assessments, undertaken by the relevant contractor / subcontractor, in line with current Occupational Health legislation, guidance and good practice to determine what (if any) specific mitigation measures are required.

7.0

Geoenvironmental Assessment

7.0 Geoenvironmental Assessment

7.1 Visual and / or Olfactory Evidence of Potential Contamination

During the recent Dunelm (2020) investigation, a hydrocarbon odour and sheen were noted within the infilled dock made ground material in BH03 between 10.90 and 11.10m bgl and a strong organic and hydrocarbon odour was recorded within WS05 between 1.10 and 2.0m bgl. This material was sampled and tested, and the results are presented within Section 7.5.

7.2 Geoenvironmental Preface & Assumptions

7.2.1 Land Quality (Human Health)

For this assessment a ‘commercial’ end use has been considered appropriate for the proposed development. This is considered the most appropriate criteria as this model considers both the most appropriate sensitive receptor and context, as follows:

- This model takes into account both indoor and outdoor exposure along with associated dermal contact and ingestion, which is considered to be appropriate for assessing the risk within areas of soft landscaping and within buildings.
- The exposure frequency for indoor exposure is 230 days per year and outdoor exposure is 170 days per year which are considered to be appropriate for the proposed end use.
- The occupancy period indoors and outdoors is 8.3 and 0.7 hours a day respectively, which is representative of an average working day.
- The most sensitive receptor and age class modelled is a female aged 17 years which is considered to be suitable for the proposed use of the site.

Should the nature of the proposed development significantly change that would alter the proposed end use, further geoenvironmental assessment will be required.

In undertaking the Tier 1 risk assessment the laboratory analysis results for soil samples have been considered in the context of a ‘commercial’ end use using C4SLs in the first instance and where these are not available, the LQM/CIEH S4ULs have been used. The ATRISK^{SOIL} SSVs are only used only where C4SLs and the LQM/CIEH S4ULs are not available.

7.2.2 Controlled Waters

The River Thames is about 250m to the south of the site at its closest point and the River Lea is about 250m east of the site at its closest point. Both rivers are tidally influenced at these locations.

The superficial geology beneath the site is classified as Secondary Undifferentiated Strata and the London Clay is classified as Unproductive Strata. The chalk at depth beneath the site is classified as a Principal Aquifer. It is likely that the dominant water environment characteristic is that groundwater may be in hydraulic continuity with the Rivers Lea and Thames.

Groundwater within the granular layers of the Lambeth Group, Upnor Formation / Thanet Formation and underlying Chalk is considered likely to be separated by the overlying relatively impermeable London Clay and Harwich Formation.

No surface water abstractions are recorded within 1km of the site. The nearest groundwater abstraction is recorded 162m east on the Telehouse site and is listed as being operated by Celtic Technologies Ltd and associated with water drawn from the shallow alluvium for remediation purposes. It is anticipated that this abstraction is no longer active as the records included within the Envirocheck report prepared for the site does not provide the permit end or start date.

The subject site is not within in a groundwater source protection zone.

In line with current guidance where the primary focus is on improving the overall condition of the water environment, the recorded leachable soil concentrations for the Tier 1 Water Environment assessment have been compared primarily against with the Environmental Quality Standards (EQS) for Freshwater with the UK Drinking Water Standards (DWS) used where EQS data was not available. Where assessment criteria are based upon water hardness, a range of >250 mg/l equivalent to 'hard' water has been assumed based on information provided by Thames Water (Ref 5, Section 1.4).

7.3 Environmental Sampling & Testing Strategy

The suite of analysis included commonly occurring contaminants and those associated with the historic land use identified within the Cundall preliminary land quality assessment report. The analysis also included those contaminants that can act as surrogate markers for less common contaminants.

A total of 31 soil samples were subject to a range of geoenvironmental testing as part of the recent Dunelm (2020) investigation, the results of which are summarised within this section.

7.4 Risk Assessment Framework & Methodology

Reference should be made to the detailed information on the geoenvironmental risk assessment framework and methodology presented in Appendix A.

The risk assessment undertaken is based on current UK legislative framework and best practice in the context of the proposed development, at the time of writing. The assessment has been undertaken based on the Environment Agency's (EA) CLR:11 guidance as it has been completed prior to the release of the updated EA LCRM guidance on 08 October 2020. In order to put the laboratory measured chemical analysis results for the development site into context, the chemical data obtained during this site investigation has been assessed in relation to guideline values and other criteria commonly used for the assessment of land contamination, as summarised subsequently.

7.5 Land (Soil) Quality Results

Organic matter was recorded in the range of 0.3 – 4.1 % within the analysed samples, with an average organic matter content of 2%. Therefore, a characteristic value of 1 % Soil Organic Matter (SOM) has been adopted where assessment criteria are dependent on SOM.

7.5.1 Results of Soil Contamination Testing

Test	Threshold Value		Number of Samples	Range	Number of Exceedances
Asbestos					
Asbestos	Presence		30	n/a	BH03 0.80m, BH01 0.15m, WS07A 0.2m, WS04 0.8m & WS09 1.5m
Metals					
Antimony	7500	mg/kg	15	BD to 10	--
Arsenic	640	mg/kg	30	0.4 to 49	--
Beryllium	12	mg/kg	15	BD to 1.1	--
Boron, Water Soluble	240000	mg/kg	15	0.3 to 1	--
Cadmium	410	mg/kg	30	BD to 9	--
Chromium III	8600	mg/kg	30	BD to 130	--
Chromium, Hexavalent	49	mg/kg	30	BD	--
Copper	68000	mg/kg	30	0.8 to 240	--

Test	Threshold Value		Number of Samples	Range	Number of Exceedances
Lead	2330	mg/kg	30	BD to 2100	--
Elementary Mercury	58	mg/kg	30	BD to 5.6	--
Manganese	No Value	mg/kg	15	BD to 800	--
Molybdenum	17000	mg/kg	15	BD to 11	--
Nickel	980	mg/kg	30	BD to 51	--
Selenium	12000	mg/kg	30	BD to 2.6	--
Zinc	730000	mg/kg	30	BD to 920	--
Inorganics					
pH	No Value		30	6.2 to 10.8	--
Cyanide, Total	No Value	mg/kg	30	BD to 3.3	--
Organic matter	No Value	%	28	BD to 4.1	--
Sulphate Aqueous Extract as SO4	No Value	mg/l	30	BD to 780	--
TPH					
Aliphatic C5-C6	3200	mg/kg	28	BD	--
Aliphatic C6-C8	7800	mg/kg	28	BD to 0.19	--
Aliphatic C8-C10	2000	mg/kg	28	BD to 0.18	--
Aliphatic C10-C12	9700	mg/kg	28	BD	--
Aliphatic C12-C16	59000	mg/kg	28	BD to 8.8	--
Aliphatic C16-C21	No Value	mg/kg	28	BD to 8.6	--
Aliphatic C21-C35	No Value	mg/kg	28	BD to 50	--
Aliphatic C5-C35	No Value	mg/kg	28	BD to 50	--
Aromatic C5-C7	26000	mg/kg	28	BD	--
Aromatic C7-C8	56000	mg/kg	28	BD	--
Aromatic C8-C10	3500	mg/kg	28	BD to 0.57	--
Aromatic C10-C12	16000	mg/kg	28	BD to 280	--
Aromatic C12-C16	36000	mg/kg	28	BD to 520	--
Aromatic C16-C21	28000	mg/kg	28	BD to 860	--
Aromatic C21-C35	28000	mg/kg	28	BD to 600	--
Aromatic C5-C35	No Value	mg/kg	28	BD to 2300	--
TPH Ali/Aro Total	No Value	mg/kg	28	BD to 2300	--
EPH (C10-C20)	No Value	mg/kg	6	BD to 130	--
EPH (C6-C40)	No Value	mg/kg	15	BD to 39000.7	--

Test	Threshold Value		Number of Samples	Range	Number of Exceedances
BTEX & MTBE					
Benzene	98	mg/kg	30	BD	--
Toluene	56000	mg/kg	30	BD	--
Ethylbenzene	5700	mg/kg	30	BD	--
Xylene	No Value	mg/kg	30	BD to 0.31	--
MTBE	No Value	mg/kg	30	BD	--
Phenols					
Phenol - Monohydric	440	mg/kg	30	BD to 2.6	--
PAHs					
Naphthalene	190	mg/kg	30	BD to 16000	WS05 2.5m
Acenaphthylene	83000	mg/kg	30	BD to 3500	--
Acenaphthene	84000	mg/kg	30	BD to 4900	--
Fluorene	63000	mg/kg	30	BD to 9000	--
Phenanthrene	22000	mg/kg	30	BD to 34000	WS05 2.5m
Anthracene	520000	mg/kg	30	BD to 160000	--
Fluoranthene	23000	mg/kg	30	BD to 23000	--
Pyrene	54000	mg/kg	30	BD to 20000	--
Benzo(a)anthracene	170	mg/kg	30	BD to 7800	WS05 2.5m
Chrysene	350	mg/kg	30	BD to 7600	WS05 2.5m
Benzo(b)fluoranthene	44	mg/kg	30	BD to 4900	WS05 2.5m
Benzo(k)fluoranthene	1200	mg/kg	30	BD to 2700	WS05 2.5m
Benzo(a)pyrene	77	mg/kg	30	BD to 6900	WS05 2.5m
Indeno(1,2,3-c,d)pyrene	500	mg/kg	30	BD to 4300	WS05 2.5m
Dibenzo(a,h)anthracene	4	mg/kg	30	BD to 580	WS04 0.2m, WS05 1.5m &WS05 2.5m
Benzo(g,h,i)perylene	3900	mg/kg	30	BD to 4000	WS05 2.5m
PAH Total	No Value	mg/kg	30	BD to 310000	--

*BD – Below limit of detection

Table 7-1: Soil Contamination Testing Results

7.5.2 Soil Contamination Test Result Exceedances

7.5.2.1 Asbestos

The presence of asbestos was recorded within five of the 30 soil samples tested all comprising made ground from across the site; BH03 0.80m bgl, BH01 0.15m bgl, WS07A 0.2m bgl, WS04 0.8m bgl & WS09 1.5m bgl.

Quantification testing was undertaken on the samples that recorded the presence of asbestos and the samples from WS04 at 0.80m bgl and WS09 at 1.5m bgl recorded the presence of a bundle of chrysotile fibres with a percentage mass of less than 0.001%. The sample from WS07A at 0.20m bgl recorded amosite fibres with a percentage mass of less than 0.001%. The sample from BH01 at 0.15m bgl recorded a small (percentage mass of <0.001%) bundle of crocidolite. The sample from BH03 at 0.80m bgl recorded chrysotile present as fibre bundles and in microscopic and visible cement fragments at a mass of 0.628%.

7.5.2.2 PAHs

A sample of made ground taken from WS05 at a depth of 2.5m bgl within the area of infilled dock in the south of the site recorded exceedances of PAHs, namely, naphthalene, phenanthrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene ,dibenzo(a,h)anthracene and benzo(g,h,i)perylene. The made ground is described as dark brown gravelly, slightly clayey sand and underlies a layer of made ground described as having a strong hydrocarbon odour between 1.10 and 2.0m bgl.

Two additional samples of made ground taken from within the infilled dock in the south of the site (WS04 at 0.2m bgl and WS05 at 1.5m bgl) also recorded exceedances of dibenzo(a,h)anthracene. The material is described as dark brown gravelly, slightly clayey sand in WS04 and as dark grey slightly sandy, slightly gravelly clay within WS05. The samples from WS05 consisted of made ground described as having a strong hydrocarbon odour.

7.5.3 Results of Soil Leachate Testing

Test	Threshold Value		Number of Samples	Range	Number of Exceedances
Metals					
Arsenic, Dissolved	50	µg/l	21	0.16 to 6.7	--
Cadmium, Dissolved	0.25	µg/l	21	BD	--
Chromium, III	No Value	µg/l	21	BD to 7.6	--
Chromium, Hexavalent	No Value	µg/l	21	BD	--
Copper, Dissolved	28	µg/l	21	BD to 5.4	--
Lead, Dissolved	7.2	µg/l	21	0.16 to 3.5	--
Mercury, Dissolved	0.05	µg/l	21	BD to 0.03	--
Nickel, Dissolved	20	µg/l	21	BD to 1.6	--
Selenium, Dissolved	No Value	µg/l	21	BD to 2.2	--
Zinc, Dissolved	125	µg/l	21	BD to 37	--
Inorganics					
pH	No Value	-	21	6.4 to 10.2	--
Cyanide, Total	1	ug/l	21	BD	--
Sulphate as SO4	250	mg/l	21	1.3 to 29	--
Sulphide	No Value	mg/l	21	BD to 44	--
PAHs					
Naphthalene	2.4	µg/l	21	BD to 0.53	--
Acenaphthylene	No Value	µg/l	21	BD to 0.27	--

Test	Threshold Value		Number of Samples	Range	Number of Exceedances
Acenaphthene	No Value	µg/l	21	BD to 0.35	--
Fluorene	No Value	µg/l	21	BD to 0.32	--
Phenanthrene	No Value	µg/l	21	0.03 to 2.6	--
Anthracene	0.1	µg/l	21	BD to 0.92	BH03 11m, WS07A 0.2m, WS07A 0.8m, WS02 0.2m, WS03 0.6m, WS04 0.8m & WS05 1.5m
Fluoranthene	0.1	µg/l	21	0.02 to 7.7	BH03 0.8m, BH03 11m, WS07A 0.2m, WS07A 0.8m, WS02 0.2m, WS03 0.2m, WS03 0.6m, WS04 0.2, WS04 0.8m, WS05 0.2m, WS05 1.5m & WS06 0.3m
Pyrene	No Value	µg/l	21	0.01 to 7.5	--
Benzo(a)anthracene	No Value	µg/l	21	BD to 1.3	--
Chrysene	No Value	µg/l	21	BD to 4	--
Benzo(b)fluoranthene	0.03	µg/l	21	BD to 5.3	BH03 0.8m, BH03 11m, BH01 0.3m, WS07A 0.2m, WS07A 0.8m, WS02 0.2m, WS03 0.6m, WS04 0.2, WS04 0.8m, WS05 0.2m, WS05 1.5m & WS06 0.3m
Benzo(k)fluoranthene	0.03	µg/l	21	BD to 1.9	BH03 0.8m, BH03 11m, BH01 0.3m, WS07A 0.2m, WS07A 0.8m, WS02 0.2m, WS03 0.6m, WS04 0.2, WS04 0.8m, WS05 0.2m, WS05 1.5m & WS06 0.3m
Benzo(a)pyrene	0.05	µg/l	21	BD to 3.2	BH03 0.8m, BH03 11m, BH01 0.3m, WS07A 0.2m, WS07A 0.8m, WS02 0.2m, WS03 0.6m, WS04 0.2, WS04 0.8m, WS05 0.2m, WS05 1.5m & WS06 0.3m
Indeno(1,2,3-c,d)pyrene	0.002	µg/l	21	BD to 3.5	BH03 0.8m, BH03 11m, BH01 0.3m, WS07A 0.2m, WS07A 0.8m, WS03 0.2m, WS03 0.6m, WS04 0.2, WS04 0.8m, WS05 0.2m, WS05 1.5m & WS06 0.3m
Dibenzo(a,h)anthracene	No Value	µg/l	21	BD to 1.2	--
Benzo(g,h,i)perylene	0.002	µg/l	21	BD to 5.7	BH03 0.8m, BH03 11m, BH01 0.3m, WS07A 0.2m, WS07A 0.8m, WS02 0.2m, Ws03 0.2m, WS03 0.6m, WS04 0.2, WS04 0.8m, WS05 0.2m, WS05 1.5m, WS06 0.3m, WS10 0.4m
PAH Total	No Value	µg/l	21	BD to 45	--

Test	Threshold Value		Number of Samples	Range	Number of Exceedances
Phenols					
Phenol	7.7	µg/l	21	BD	--
Petroleum Hydrocarbons					
Petroleum Hydrocarbons C5-C10 GRO	10	µg/l	21	BD to 1.5	--
Petroleum Hydrocarbons C10-C24 DRO	10	µg/l	21	BD to 5300	BH03 11m, WS05 1.5m, WS06 0.3m, WS07A 0.2m, WS10 0.4m, BH02 5.5m & BH02 3.5m
Petroleum Hydrocarbons C24-C40 LORO	10	µg/l	21	BD to 15000	BH03 11m, WS05 0.2m, WS05 1.5m, WS06 0.3m, WS07A 0.2m, WS10 0.4m, BH02 5.5m & BH02 3.5m

*BD – Below limit of detection

Table 7-2: Soil Leachate Testing Results

7.5.4 Soil Leachate Test Result Exceedances

7.5.4.1 PAHs

Exceedances of PAH (namely anthracene, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene and benzo(g,h,i)perylene) have been recorded against the EQS screening values within 14 samples of made ground from across the site both outside and within the area of infilled dock in the south of the site.

7.5.4.2 Petroleum Hydrocarbons

Exceedances of petroleum hydrocarbons have been recorded against the DWS screening value of 10 µg/l in eight samples of made ground across the site both outside and within the area of infilled dock in the south of the site.

7.6 Soil Test Results for Water Supply Pipes

A suite of analysis in accordance with UKWIR Report Ref. No. 10/WM/03/21, has been undertaken to ascertain the risk posed to end users from the permeation of the proposed new potable water supply pipes within the proposed development. One sample of the dock infill material, one sample of the general made ground outside the infilled dock and two samples of the superficial sand and gravel were tested from depths of between 0.60 and 1.60m bgl.

The results of these analyses are presented in Table 7-3.

Determinant	Units	Results range
Total VOC	mg/kg	<0.01
BTEX + MTBE	µg/kg	<0.01
Total SVOC	mg/kg	<0.1 to 0.8
Phenols	mg/kg	<0.1
Cresols & Chlorinated Phenols	mg/kg	<0.1
Mineral Oil (C11-C20)	mg/kg	<10 to 21
Mineral Oil (C21-C40)	mg/kg	<10 to 170
Conductivity	uS/cm	120 to 450
Redox Potential	mV	140 to 230
pH	-	8.8 to 10.6

Table 7-3: UKWIR Tests Results

7.7 Risk Discussion and Summary

7.7.1 Land (Soil) Quality Risk

A single sample of made ground taken from WS05 at a depth of 2.5m bgl within the area of infilled dock in the south of the site recorded exceedances of PAHs. Based on the current development proposals, the location of WS05 is not within the building footprint and therefore, the volatile vapour risk to construction workers and site end users is negligible.

However, based on the current proposals WS05 will be in an area of soft landscaping and therefore, the risk to site end users is considered to be high. Excavations for services may also be required in this area and therefore the risk to construction workers is considered to be high. Specific remedial actions will be required to mitigate the risks to both site end users and construction workers.

Asbestos was found to be present in five of the 30 soil samples tested. Quantification testing determined four of the five samples to have asbestos with less than 0.001% mass. However, one sample of made ground recorded the presence of asbestos as fibre bundles and in microscopic and visible cement fragments at a mass of 0.628%. The potential presence of asbestos within the made ground elsewhere on site cannot be discounted.

It is anticipated that the proposed development will have areas of soft landscaping, although the exact design proposals are indicative at the time of reporting. Therefore, the risks to site end users, adjacent site users and construction workers and future maintenance workers are considered to be high resulting from the presence of asbestos in the shallow soils and specific remedial actions will therefore be required.

7.7.2 Controlled Waters Risk

Based on the results, slightly elevated concentrations of leachable PAHs are recorded within twelve of the soil leachate samples tested generally at depths between 0.2 and 0.8m bgl. Generally, the samples are recorded to underly the tarmacadam surfacing across the site or has recorded gravel of macadam. It is anticipated that this material will be removed from site as part of the redevelopment of the site to form the formation level of the development, therefore the source of elevated leachable PAH contamination will be removed from site as part of the construction works.

The sample tested from BH03 at a depth of 11m also recorded elevated concentrations of leachable PAHs. In addition, the sample tested from WS05 at 1.5m bgl is at a depth that is unlikely to be removed from site during the redevelopment. Two samples of groundwater from the TN2 development approximately 200m east of the site (down hydraulic gradient from the subject site) were tested as part of the previous Concept (2013) investigation. The results recorded no elevated concentrations of PAH within the groundwater. Therefore, by demonstration, the potentially leachable PAH concentrations within the soil on site are not impacting Controlled Waters.

Elevated leachable concentrations of petroleum hydrocarbons C10-C24 DRO and C24-C40 LORO have been recorded compared to the screening value adopted of 10 µg/l (DWS) in eight samples of made ground across the site both outside and within the area of infilled dock in the south of the site. However, these elevated concentrations are not considered to present a significant risk to controlled waters based on the following:

- Although the underlying chalk is a Principal Aquifer, the impermeable London Clay physically separates the overlying made ground from the Principal Aquifer receptor at depth beneath the site. However, the shallow aquifer (classified as Secondary Undifferentiated Strata) is directly in contact the general made ground outside the infilled dock.
- The proposed development will further reduce the leachate generation potential on site due to the presence of hard surfacing and buildings and infiltration collection by a surface drainage network.
- The DWS threshold values used within the assessment are considered to be extremely conservative as they represent acceptable concentrations at consumers taps and not acceptable concentrations within the groundwater prior to treatment or the wider water environment (River Thames and River Lea). In addition, the nearest groundwater abstraction (assumed to be active) is recorded 162m east associated with water drawn from the shallow alluvium for remediation purposes.

The overall risk to Controlled Waters is therefore considered low.

7.7.3 Potable Water Supply Pipe Risk

Based upon the data presented in Section 7.6, a risk assessment for potable water supplies has been undertaken in line with current UKWIR guidance and the pipe material risk assessment screening is presented in Table 7-4.

Parameter Group	PE Pipe	PVC Pipe	Barrier Pipe (PE-AL-PE)	Wrapped Steel Pipe	Wrapped Ductile Iron Pipe	Copper Pipe
Conductivity, pH, Redox Potential	PASS	PASS	PASS	PASS	PASS	FAIL (Exceedance of Threshold Value 5<pH<8)
Mineral Oil(C11-C20)	FAIL (Exceedance of Threshold Value 10 mg/kg)	PASS	PASS	PASS	PASS	PASS
Mineral Oil(C21-C40)	PASS	PASS	PASS	PASS	PASS	PASS
Total VOCs	PASS	PASS	PASS	PASS	PASS	PASS
BTEX + MTBE	PASS	PASS	PASS	PASS	PASS	PASS
Total SVOCs	PASS	PASS	PASS	PASS	PASS	PASS
Phenol	PASS	PASS	PASS	PASS	PASS	PASS
Cresols and Chlorinated Phenols	PASS	PASS	PASS	PASS	PASS	PASS
TICs (Ethers,Ketones,Aldehydes,Amines,Nitrobenzene)	PASS	PASS	PASS	PASS	PASS	PASS

Table 7-4: UKWIR Pipe Material Risk Assessment

The laboratory analysis indicates that the use of PVC (polyvinyl chloride) pipe will be acceptable, however, this should be confirmed with Thames Water prior to designs being finalised.

7.7.4 Risks to Human Health / Built Environment (Ground Gas Risk)

The site classifies as Characteristic Gassing Situation 2 (CS-2) under which scenario additional ground gas protection measures would be required in new buildings in accordance with CIRIAC665 / BS8485. Therefore, the risk associated with ground gas concentrations is considered to be high and ground gas protection measures will be required as discussed in Section 6.0.

7.7.5 Aggressive Ground Risk to Buried Concrete

Limited risks to concrete and associated mitigation measures have been identified as described in Section 5.8 of this report.

7.8 Refined Conceptual Site Model

A semi quantitative risk assessment (Tier 1/2) approach has been undertaken for the site for sources of contamination, based on the available site information. This is based on the source – pathway – receptor conceptual risk model in accordance with current UK guidance and establishes the likelihood and severity of potentially active pollutant linkages at the site.

The refined conceptual site model represented below is based on the site's proposed end use. The risks identified at the site as a result of the proposed development (assuming no remedial action is implemented) are summarised in Table 7-5 and are presented on drawing TW2001-CDL-TW2-XX-DR-GE-160207.

Contaminant Source	Pathway	Receptor	Consequence of Pollutant Linkage	Likelihood of Pollutant Linkage	Overall Risk
Asbestos and elevated PAH concentrations in site wide made ground.	1.Ingestion	Site end users	Severe	Likely	High Risk
		Construction Workers	Severe	Likely	High Risk
	2.Inhalation	Site end users	Severe	Likely	High Risk
		Construction Workers	Severe	Likely	High Risk
		Adjacent site users (during construction)	Severe	Likely	High Risk
	3. Lateral & vertical migration of ground gas	Site end users / Built Environment	Severe	Likely	High Risk
Elevated leachable concentrations of petroleum hydrocarbons and PAH in site wide made ground	4. Lateral & vertical migration of leachable contaminants / contaminated water	Secondary Aquifer & Surface Waters	Medium	Unlikely	Low Risk
		Principal Aquifer	Medium	Unlikely	Low Risk
General made ground, dock infill & shallow soils	5. Potable water supply pipes	Site end users	Severe	Likely	High Risk
Compounds aggressive to buried concrete in made ground & natural soils	6. Direct attack of buried concrete	Built environment	Medium	Likely	Moderate Risk

Table 7-5: Refined Conceptual Site Model

7.9 Risk Assessment Summary

The site generally represents a moderate to high geoenvironmental risk.

The risk to Controlled Waters is considered to be low.

Risks to buried concrete are moderate based on the geochemical testing of soils and require remedial action to mitigate the risk. This is further discussed in Section 5.8.

Risks associated with ground gas are considered to be high and gas mitigation / protection measures will be required to be incorporated into the development.

The risk to human health is considered high and will require remedial action to be implemented as part of the development, to ensure safety during both construction and operational phases.

7.10 Remedial Requirements

Piled foundations are proposed for the development and should be designed in line with guidance presented in the Environment Agency document 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination'. A foundations risk assessment based on the above document may be required by the Environment Agency

A Detailed Remediation and Verification Strategy may be required by the Local Planning Authority for the site, and if so the detailed strategy should be submitted to the regulators/Local Planning Authority for approval before commencement of the works on site.

A Verification Report may be required to provide confirmation that the remedial works have been carried out in accordance with the agreed Remediation Strategy.

8.0

Waste Classification and Characterisation

8.0 Waste Classification and Characterisation

8.1 Introduction and Summary of Waste Classification

Materials likely to be considered a waste (whether intended for disposal off site or intended for an 'end of waste' scenario through other means such as under the Definition of Waste Code of Practice or DoWCoP) must be classified to determine whether they either contain hazardous properties or do not.

Environment Agency WM3 technical guidance (WM3) sets out the requirement for the classification. It also provides the basis for the methodology to employ in order to ensure compliance with the regulations. The classification assesses the composition of the material and determines the concentrations of the hazardous substances in the material. The assessment of contaminated soil (excavated soil) to determine whether it is hazardous waste is dependent on the presence of 'hazardous substances' exceeding particular thresholds.

The basic characterisation requires total soils concentrations (solid state) testing for potential contaminants based upon the site's history. The characterisation also determines the most appropriate List of Waste (LoW) code(s) for the waste. The List of Wastes (England) Regulations 2005 shows those wastes that are absolute entries (hazardous waste regardless of their concentration) and mirror entries (hazardous waste only if dangerous substances are present above threshold concentrations).

Non-Hazardous Waste does not normally require WAC analysis unless it is intended to dispose materials into an Inert Landfill.

The results of the chemical testing from the site investigation have been compiled to assess the likely waste streams of arisings from site. This waste classification assessment was based upon current good practice and waste legislation, including WM3. It should be noted that certain hard surfacing materials, for example Tarmac, contain-tar or other deleterious materials be found to be present within them, will fall into a separate waste stream if they require off-site removal.

8.2 List of Waste Codes

Based on the encountered ground conditions, it is considered that the made ground soils at the site are likely to be Classified in Chapter 17 'Construction and Demolition Wastes'.

This code is considered the most appropriate under the current scenario, however it is the waste producers' responsibility to check that the arising's from the site are correctly classified.

8.3 Preliminary Waste Classification Assessment

The results of the preliminary assessment on 15 samples (seven samples of general made ground (outside the infilled dock), four samples of the dock infill material, one sample of alluvium and three samples of the Kempton Park Gravel) are summarised in Table 8-1.

Sample Reference (depth in m bgl)	Stratum	Non-Hazardous	Hazardous	Potentially Hazardous
WS02 0.20	General Made Ground (Outside Infilled Dock)	X		
WS06 0.30		X		
WS07A 0.80		X		
WS08 0.60		X		
WS08 0.80		X		
WS09 1.50		X		
WS10 0.15		X		

Sample Reference (depth in m bgl)	Stratum	Non-Hazardous	Hazardous	Potentially Hazardous
BH03 4.50	Dock Infill Material	X		
BH03 11.0			X	
WS04 0.80		X		
WS05 2.50			X	
WS09 2.60	Alluvium	X		
BH01 0.80	Kempton Park Gravel	X		
BH02 3.50		X		
BH02 5.50		X		

Table 8-1: Summary of Waste Classification

8.4 Waste Classification Summary

The results indicate a single sample of the dock infill material classified as Hazardous waste based on HP3(i) (Flammable), HP7 (Carcinogenic) and HP14 (Ecotoxic) as a result of elevated concentrations of zinc chromate (920 mg/kg) and TPH C6-C40 (9.9 mg/kg). It should be noted that a hydrocarbon odour and sheen was recorded within the sampled material.

Another sample of dock infill material classified as Hazardous waste based on HP4 (Irritant), HP6 (Acute Toxicity), HP7 (Carcinogenic), HP10 (Toxic for Reproduction), HP11 (Mutagenic), HP13 (Sensitising), HP14 (Ecotoxic) and HP3(i) (Flammable) based on elevated concentrations of TPH (C6-C40) and PAHs. A strong hydrocarbon odour was also recorded within this material.

All seven samples of general made ground tested, two of the four samples of dock infill material tested, the single sample of alluvium and all three samples of natural sand and gravel do not contain hazardous properties.

These classifications were made using the HazWasteOnline™ software and are shown on the HazWasteOnline™ summary sheets which are included in Appendix B.

8.5 Waste Acceptance Criteria (WAC)

The results of the WAC assessment on two samples of made ground, two samples of the dock infill material, one sample of natural sand and gravel and one sample of alluvial deposits are summarised in Table 8-2.

Sample Reference	Sample Depth (m bgl)	Strata	Inert	Stable Non-Reactive Hazardous Waste	Hazardous Waste
WS07A	0.20	Made Ground		X	
WS10	0.50		X		
WS05	2.50	Dock Infill Material		X	
BH03	11.0				X
WS09	2.60	Alluvium	X		
BH02	3.50	Kempton Park Gravel	X		

Table 8-2: WAC Testing Results

8.6 WAC Summary

The outcome of the preliminary WAC analysis has classified a single sample of dock infill material as Hazardous waste based on a Total Organic Carbon concentration of 5.3% above the Stable Non-Reactive Hazardous waste threshold of 5% and a Loss on Ignition concentration of 22% above the Hazardous waste threshold of 10%. Another sample of dock infill classified as Stable-Non-Reactive Hazardous waste based on a TPH (C10-C40) concentration of 39000 mg/kg above the Inert waste threshold value of 500 mg.kg and a PAH concentration of 310000 mg/kg above the Inert waste threshold value of 100 mg/kg.

A single sample of made ground outside the infilled dock classified as Stable Non-Reactive Hazardous waste based on a Total Organic Carbon concentration of 4.2% above the Inert waste threshold of 3%.

The remaining three samples tested (one sample of made ground, one sample of alluvial deposits and one sample of Kempton Park Gravel) all classified as Inert.

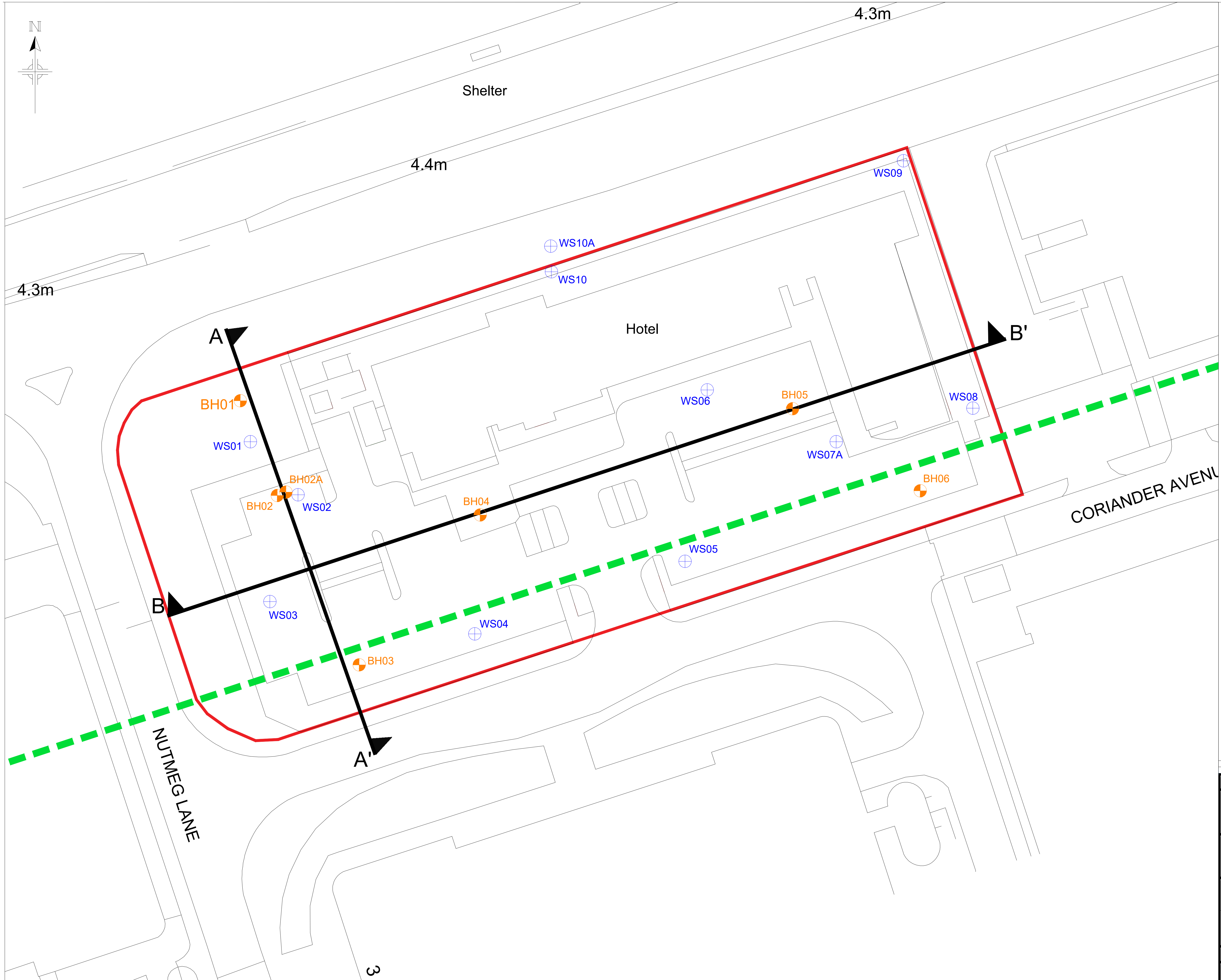
The exact waste disposal route will need to be agreed with individual landfill operators and must meet the requirements of current UK legislation and guidance.

8.7 Additional Comments

It should be noted that five samples of made ground tested for land quality purposes recorded the presence of asbestos. All but one of the samples recorded masses less than 0.001%. However, a single sample recorded chrysotile present as fibre bundles and in microscopic and visible cement fragments at a mass of 0.628% which is above the Hazardous waste threshold of 0.1%.

Waste Classification analysis and WAC testing will be required prior to any off-site disposal. This testing will be required to be undertaken on site prior transportation. Waste Acceptance Criteria should be undertaken at a frequency that is proportional to the amount of material that requires removal from the site. The minimum frequency of testing will need to be agreed with individual landfill operators and must meet the requirements of current UK legislation and guidance.

Drawings



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◐	Rotary Borehole
⊕	Windowless Sampler Borehole
—	Site Boundary
- -	Approximate Location of Front of Dock Wall Based on Historical Mapping
—	Geological Cross Section Lines A-A' and B-B' as shown on drawings TW2001-CDL-TW2-XX-DR-GE-160205 and TW2001-CDL-TW2-XX-DR-GE-160206

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PROJECT:
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EXPLORATORY HOLE LOCATION AND GEOLOGICAL CROSS SECTION PLAN

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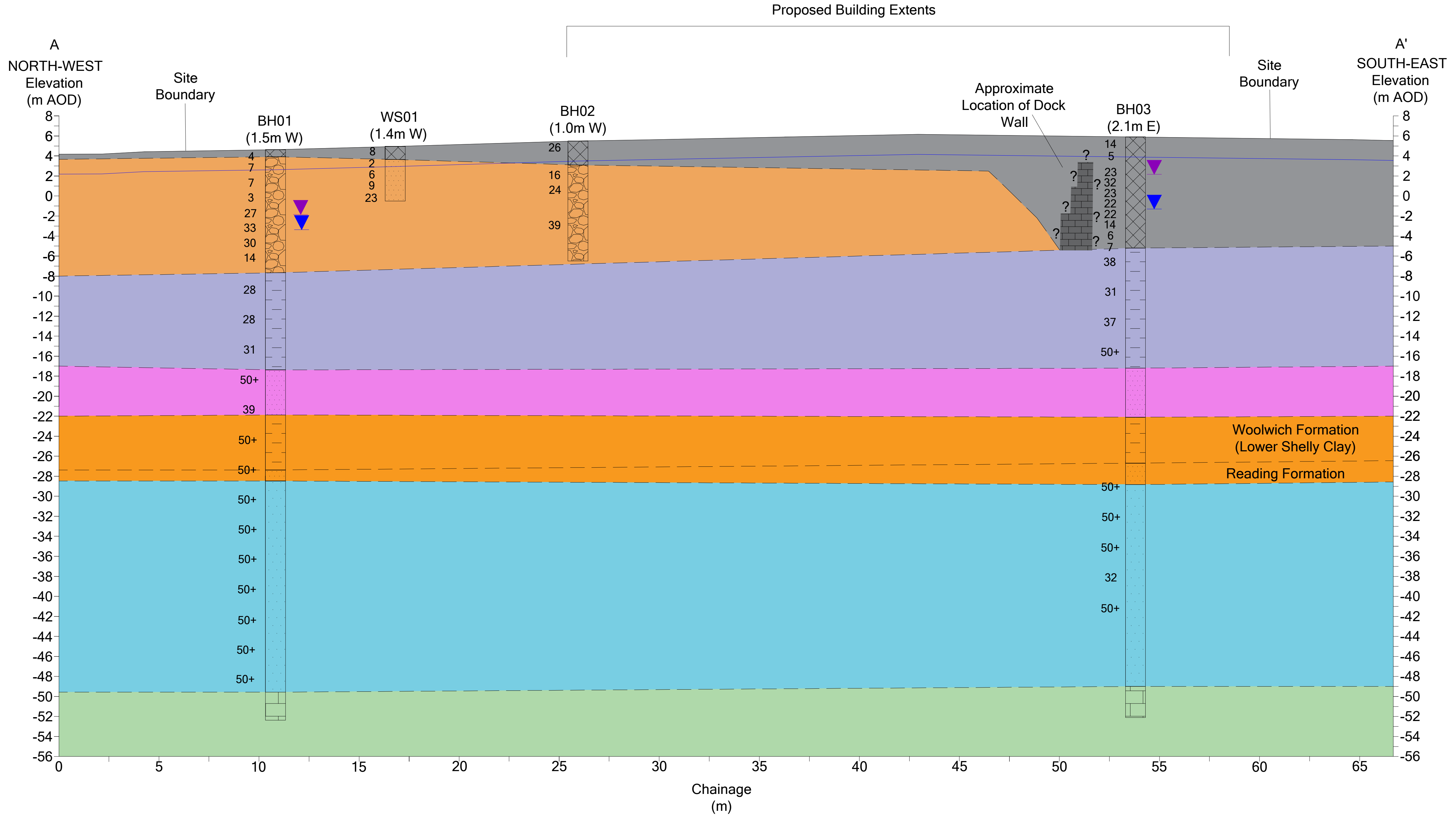
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A
NORTH-WEST
Elevation
(m AOD)
Site
Boundary
BH01
(1.5m W)
WS01
(1.4m W)
BH02
(1.0m W)
Approximate
Location of Dock
Wall
BH03
(2.1m E)
Site
Boundary
A'
SOUTH-EAST
Elevation
(m AOD)
4
7
7
3
27
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30
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50+
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32
23
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22
14
6
7
38
31
37
50+
50+
50+
50+
32
50+
Woolwich Formation
(Lower Shelly Clay)
Reading Formation
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
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-52
-54
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Chainage
(m)

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- ▨ Made Ground
- 🟧 Kempton Park Gravel
- 🟪 London Clay
- 🟪 Harwich Formation
- 🟧 Woolwich and Reading Formations
- 🟦 Upnor Formation / Thanet Formation
- 🟩 Seaford / Newhaven Chalk Formation (Undifferentiated)
- ☐ Clay
- ☐ Sand
- ☐ Gravel
- - - Inferred Geological Boundary
- — Recommended Design Groundwater Level
- ▼ Average groundwater level from monitoring with response zone in Made Ground / Kempton Park Gravel
- ▼ Average groundwater level from monitoring with response zone in Harwich Formation & Upnor / Thanet Formation
- (Xm) Offset From Cross Section Line
- 00 SPT N Value

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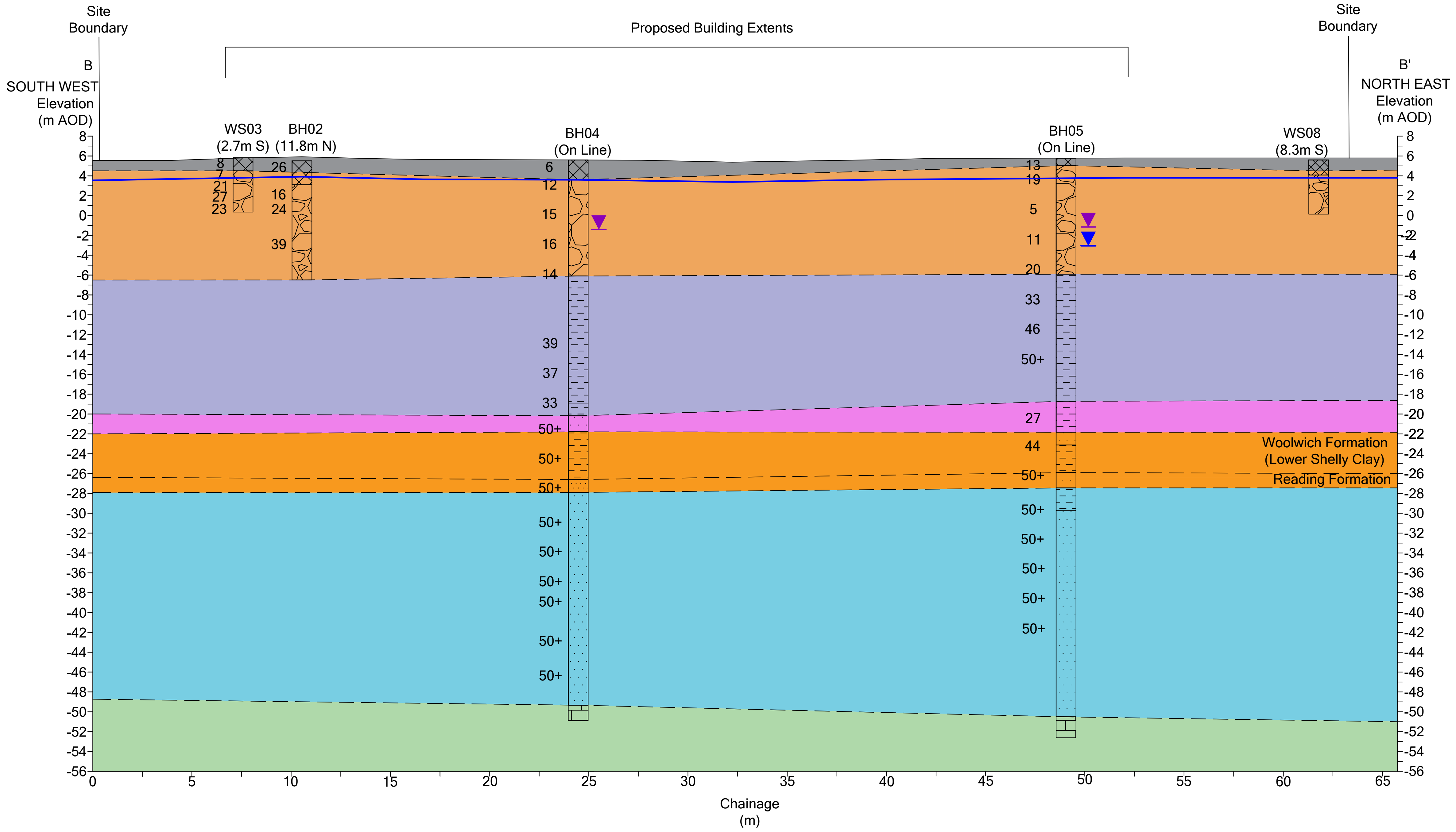
Site
Boundary
Proposed Building Extents
Site
Boundary
B
SOUTH WEST
Elevation
(m AOD)
B'
NORTH EAST
Elevation
(m AOD)
WS03
(2.7m S)
BH02
(11.8m N)
BH04
(On Line)
BH05
(On Line)
WS08
(8.3m S)
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33
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50+
Woolwich Formation
(Lower Shelly Clay)
Reading Formation
8
6
4
2
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-2
-4
-6
-8
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-12
-14
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Chainage
(m)

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▨	Made Ground
🟧	Kempton Park Gravel
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🟪	Harwich Formation
🟧	Woolwich and Reading Formations
🟦	Upnor Formation / Thanet Formation
🟩	Seaford / Newhaven Chalk Formation (Undifferentiated)
▤	Clay
⬚	Sand
▨	Gravel
– – –	Inferred Geological Boundary
—	Recommended Design Groundwater Level
▼	Average groundwater level from monitoring with response zone in Made Ground / Kempton Park Gravel
▼	Average groundwater level from monitoring with response zone in Harwich Formation & Upnor / Thanet Formation
(Xm)	Offset From Cross Section Line
00	SPT N Value

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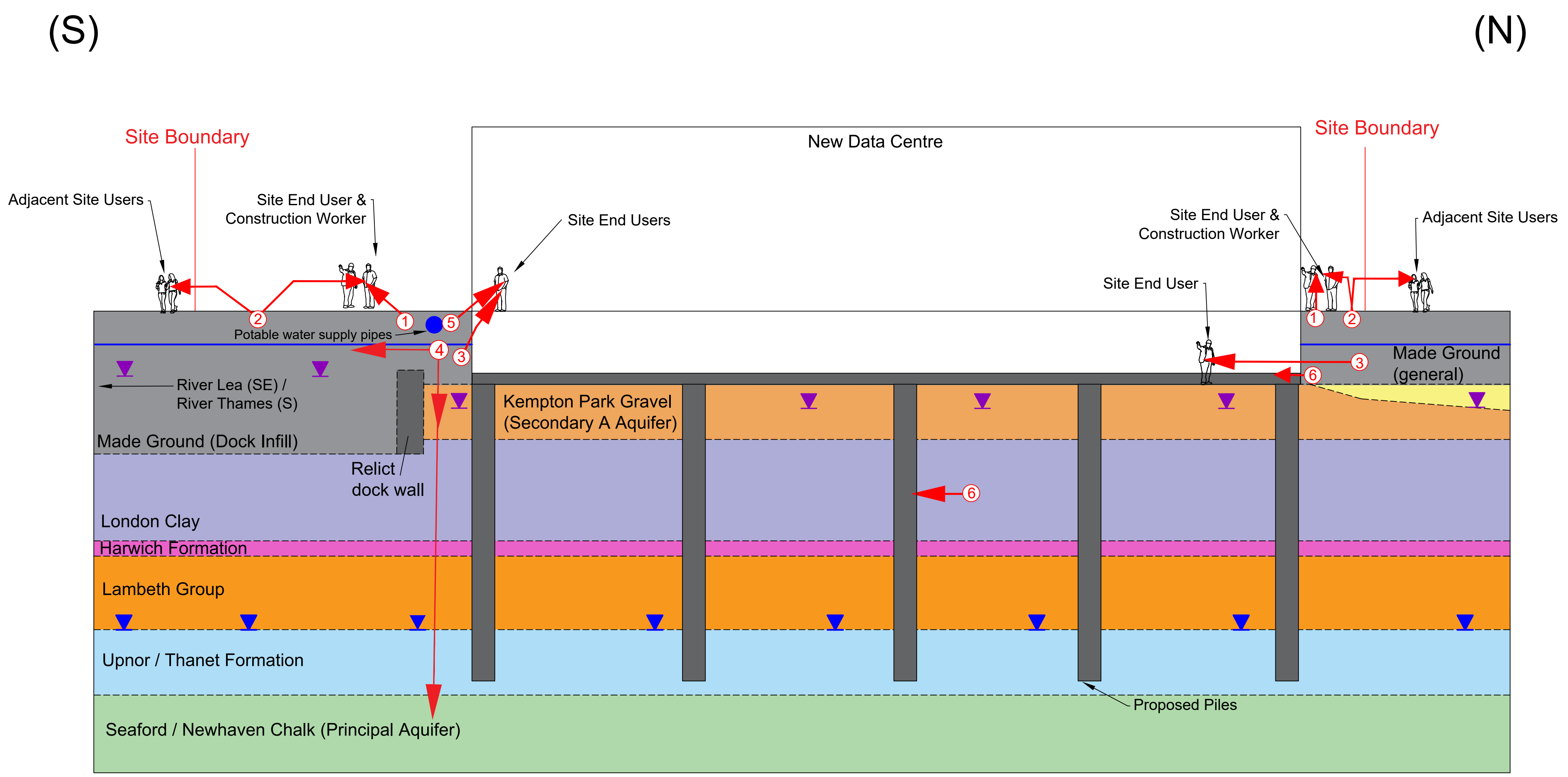
(S)
(N)
Site Boundary
Site Boundary
New Data Centre
Adjacent Site Users
Site End User & Construction Worker
Site End Users
Site End User & Construction Worker
Adjacent Site Users
Site End User
Potable water supply pipes
①
②
③
④
⑤
⑥
River Lea (SE) / River Thames (S)
Made Ground (Dock Infill)
Relict dock wall
Kempton Park Gravel (Secondary A Aquifer)
Made Ground (general)
London Clay
Harwich Formation
Lambeth Group
Upnor / Thanet Formation
Proposed Piles
Seaford / Newhaven Chalk (Principal Aquifer)

Contaminant Source	Pathway	Receptor	Consequence of Pollutant Linkage	Likelihood of Pollutant Linkage	Overall Risk
Asbestos and elevated PAH concentrations in site wide made ground	1.Ingestion	Site end users	Severe	Likely	High Risk
		Construction Workers	Severe	Likely	High Risk
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		Construction Workers	Severe	Likely	High Risk
		Adjacent site users (during construction)	Severe	Likely	High Risk
	3. Lateral & vertical migration of ground gas	Site end users / Built Environment	Severe	Likely	High Risk
Elevated leachable concentrations of petroleum hydrocarbons and PAH in site wide made ground	4. Lateral & vertical migration of leachable contaminants / contaminated water	Secondary Aquifer & Surface Waters	Medium	Unlikely	Low Risk
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General made ground, dock infill & shallow soils	5. Potable water supply pipes	Site end users	Severe	Likely	High Risk
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This Preliminary Conceptual Site Model is based upon the "Source - Pathway - Receptor" linkages identified by this report.

- ▨ Made Ground
- 🟨 Alluvium
- 🟧 Kempton Park Gravel
- 🟪 London Clay
- 🟪 Harwich Formation
- 🟧 Lambeth Group (Woolwich and Reading Formations)
- 🟦 Upnor Formation / Thanet Formation
- 🟩 Seaford / Newhaven Chalk Formation
- ① ↘ Potential Pollutant Linkage
- - - - Inferred Strata Boundary
- —— Recommended Design Groundwater Level
- ▼ Inferred Monitored Groundwater Level with Response Zone in the Made Ground / Kempton Park Gravel
- ▼ Inferred Monitored Groundwater Level with Response Zone in the Harwich Formation & Upnor / Thanet Formation

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PROJECT:
TELEHOUSE WEST 2
DESIGNER/CONTRACTOR PROJECT NO:
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TITLE:
REFINED CONCEPTUAL SITE MODEL (CSM)

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Appendices

Appendices

Appendix A CSM Background Methodology

Background Methodology

Introduction

For ‘contamination’ to exist a valid contaminant linkage must be present. That is, there should be a source of contamination, a receptor where ‘significant harm’ or ‘significant possibility of harm’ may be caused; and a pathway which connects the two. Should any element of this contaminant linkage not be present (or severed) then the land may not be regarded as contaminated land, as defined in Part IIA of the Environmental Protection Act 1990 (amended).

Land Quality

Where contaminated land is suspected, the risk assessment should take into account site specific hazards (i.e. chemical composition of the soil and/or groundwater) and conceptual model for the site. Within the UK, DEFRA have produced a human toxicological risk assessment known as the Contaminant Land Exposure Assessment (CLEA) Model (Contaminated Land Research report series (CLR Report No’s 7, 9 and 10). It should be noted that with effect from August 2008, CLR Report No’s 9 and 10 were replaced by Environment Agency’s Science Reports SC050021/SR2 and SC050021/SR3, respectively. Also, CLR 7 has been withdrawn and no replacement has been published to date.

The CLEA model is used to derive site specific Soil Screening Values (SSVs) based upon the current or proposed land use of the site, which are utilised as ‘trigger values’ within the regulatory framework. Some of the inputs of the CLEA model are the physical, chemical and toxicological properties of the contaminant. As the toxicology of contaminants can vary significantly, published guidance on toxicology has been published by the following relevant stakeholders in the derivation of SSVs:

- Environment Agency (EA).
- Land Quality Management Limited/Chartered Institute of Environmental Health (LQM/CIEH).
- Contaminated Land: Applications In Real Environments/Department for Environment and Rural Affairs (CL:AIRE/DEFRA) promoted via the Department for Communities and Local Government (DCLG).
- Atkins ATRISK^{SOIL}

The SSVs are derived using the CLEA model according to six standard land uses and are applicable to long-term human exposure to soil contaminants. It should be noted that the CL:AIRE/DEFRA modelling uses a modified version of the CLEA model to derive LLTCs or ‘Low Levels of Toxicological Concern’ rather than the ‘minimal risk’ or ‘ALARP’ (As Low As Reasonably Possible) approach promoted by LQM/CIEH, EA and ATRISK^{SOIL}.

The six standard land uses comprise:

- Residential with home-grown produce.
- Residential without home-grown produce.
- Allotments.
- Public Open Space 1 (residential).
- Public Open Space 2 (park).
- Commercial.

Although the four key stakeholders all follow the same approach in principal (namely the use of the CLEA model) individual approaches, toxicological data used, Excess Lifetime Risks (ELRs) for cancer and exposure parameters do differ for the derivation of SSVs, and therefore, so do the SSVs themselves. For example, a practitioner is likely to see little difference in an SSV between the four major model sets for Arsenic as a wealth of toxicological data and exposure reactions are available for this contaminant, reducing uncertainty and minimising the margins for error. Conversely for Lead, UK-based toxicological data is sparse, and the models rely upon European and US data, with robust exposure modelling being only recently available. This has resulted in there being variations in SSVs, and indeed LQM/CIEH have not published an SSV for this substance.

The key consideration in determining which SSVs are the most suitable for any given site is the toxicological data and exposure modelling used in deriving an SSV, and, whether the practitioner considers a particular model to appropriate to the site. An example of this is whether an exposure model that assumes a six year old female spends four hours per day in a private garden every day for a year wearing a t-shirt is a reasonable assumption for a practitioner to apply.

Where an SGV is not available for a specific contaminant, Site-Specific Assessment Criteria (SSAC) can be derived using the current CLEA Software which follows the methodology laid out in the following reports:

- Contaminated Land Report (CLR 7) (now withdrawn and has not been replaced).
- Human health toxicological assessment of contaminants in soil (replaces CLR 9).
- Updated technical background to CLEA model (replaces CLR 10).

SSV Models

With the EA SGVs now largely redundant and only relevant in a small number of scenarios (as discussed below), the two most comprehensive models are the S4ULs and ATRISK^{SOIL}. The C4SLs, despite comprising of a limited set of threshold values, are gathering increasing prominence and importance as they currently enjoy the support of DCLG and DEFRA. Further C4SL threshold values are anticipated as further research is undertaken.

LQM/CIEH S4ULs

In January 2015 LQM/CIEH released S4ULs (Suitable 4 Use Levels) based upon the based on the current CLEA Guidance (Science Reports SC050021/SR3 (the CLEA Report) and SC050021/SR2 (the TOX report)), with updated toxicological and exposure data, but maintaining a minimal risk approach. The S4ULs provide Generic Assessment Criteria (GAC) for Human Health Risk Assessment and can be used as a conservative approach to the risk assessment in the absence of the application of other screening values. The S4ULs are derived with the intention to replace the previously published 2nd Edition LQM/CIEH GACs.

ATRISKSOIL Soil Screening Values (SSVs)

Atkins have derived ATRISKSOIL SSVs based on the current CLEA Guidance (Science Reports SC050021/SR3 (the CLEA Report) and SC050021/SR2 (the TOX report)). Atkins have based the SSVs on the default assumptions provided in the current CLEA Guidance which are being used in the development of further SGVs by Defra and the Environment Agency. The Soil Screening Values (SSVs) produced by Atkins are generally applicable to the UK for common contaminants and are commercially available and have been widely promoted for use by Local Authority Officers.

Category 4 Screening Levels (C4SLs)

DEFRA have promoted the adoption of C4SLs in planning via DCLG. At this stage only six C4SLs by the CL:AIRE consortium have been published (Arsenic, Benze, Benzo[a]pyrene, Cadmium, Chromium VI and Lead) with further C4SLs proposed for derivation and publishing during 2015 and 2016. The primary purpose of C4SLs is to quickly determine whether a site is ‘definitely not contaminated’ in a Part IIA context using LLTCs, rather than adopting minimal risk. However, C4SLs are also a useful screening tool for Human Health Risk Assessment given that they have tended to use more up to date toxicological data, and, have applied more realistic exposure parameters. Given that they have support in planning from DCLG, it is considered appropriate to use them where the modelling is considered applicable to the site.

Environment Agency Soil Guideline Values (SGVs)

Although largely superseded by S4ULs, ATRISKSOILS and C4SLs, the SGVs are retained where considered relevant, and, where more recent SSVs have not been derived. MTBE (Methyl-tert Buthyl-ether) is an example of where this may apply.

Applicability of Screening Values

The application of screening values enables auditable, consistent evaluation of land contamination problems. Screening values designed to be consistent with SSVs, provide a preliminary, generic assessment of the risks to human health arising from the presence of contamination within the soil.

The practical application of screening values is the facility to compare site data, which informs decision-making with regard to the need or otherwise for further site evaluation and/or remediation measures. Screening values, if appropriately used, can reduce the cost of risk assessment and simplify decision-making. They are easy to understand and interpret by a wide variety of stakeholders.

Non-exceedance of any of the screening values described above will indicate that the soil contaminant concentrations are such as not to compromise human health, thereby the risk is acceptable, and that land is suitable for its proposed end use with regard to the specific contaminants assessed. However, exceedance of a screening value can indicate that further assessment or remedial action may be needed.

Note: Exceedance of any of the relevant screening values does not constitute evidence of a significant possibility of significant harm (SPOSH).

Asbestos in Soils

The human health risk from asbestos is from the inhalation of asbestos fibres which can then lead to asbestos related diseases such as mesothelioma and asbestosis. Currently in the UK there is no threshold level set for environmental exposure to asbestos fibres contained within soils, with ICRCL 64/85 guidance noting that concentrations of respirable fibres in dry soils of as little as 0.001% mass can produce airborne respirable fibres above the ‘control limit’ of 0.1 fibre/ml air stated by the Control of Asbestos Regulations 2012. The World Health Organisation (WHO) Air Quality Guidelines state that ‘No safe level can be proposed for asbestos because a threshold is not known to exist.’ It is therefore considered that the detectable presence of asbestos within site soils provides a ‘source of contamination.’

The pathway for asbestos fibres is their release into the air, followed by inhalation. Where asbestos is present in soils, the ability for it to become airborne is controlled by a number of factors. Where asbestos is present as part of a bound Asbestos Containing Material (ACM - such as cement bound roofing sheets), degradation or disturbance of the material will be required in order to release fibres into the air. Where loose asbestos (such as insulation), or where ACMs have been significantly degraded though age or disturbed/broken down by processes such as demolition, then no disturbance of soils through site use is required, as the action of wind may release and transport fibres in the air.

Another factor in the potential release of asbestos fibres from soil is the composition of the soils itself. Research undertaken by Addison et al (1988), reported in CIRIA C733, suggests that soil type (sand, clay or intermediate grading) has a substantial effect of airborne fibre release, with clay soils releasing around 40% of the airborne fibres of granular (sand and gravel) soils. The same research also noted a relationship between soil moisture content and airborne fibre release, with only a small increase resulting in substantial reduction of airborne fibres. Comparing results of a completely dry soil to one with 10% (w/w) increase in moisture content reduced airborne fibre counts as much as 90%.

A further consideration of asbestos fibre pathways is 'tracking' whereby ACMs and asbestos fibres attach to items such as footwear or vehicle tyres to be later released in other locations, such as inside residential properties (i.e. when site users return home).

The following factors have been used to rank the potential consequence of a contaminant – pathway – receptor linkage and the potential significance for current and future land use.

The risk assessments undertaken in this report have been undertaken in accordance with current statutory guidance and good practice, including CIRIA C552. The following tables present the definitions of the risk terms used during risk assessment for the site based on CIRIA C552.

Contamination Risk Rating Terminology - Consequence

Potential Consequence of Hazard – Receptor Linkage (in accordance with CIRIA C552)	
Severe	Short-term (acute) risk to human health likely to result in significant harm. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem.
Medium	Long-term (chronic) damage to human health. Pollution of sensitive water resources. A significant in change in a particular ecosystem, or organism forming part of such ecosystem. Damage to sensitive buildings and structures.
Mild	Slight short term health effects to humans. Slight pollution of non-sensitive water resources. Some change to population densities but with no negative effects on the function of the ecosystem. Slight damage to sensitive buildings, structures and services.
Minor (Negligible)	Non-permanent effects to human health (easily prevented by means such as personal protective clothing etc.). Easily repairable effects of damage to buildings, structures and services (e.g. discolouration of concrete).

Contamination Risk Rating Terminology – Probability

Classification of Probability of Hazard – Receptor Linkage (in accordance with CIRIA C552)	
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that and event is not inevitable, but possible in the short term and likely in the long term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.
Unlikely	There is pollution linkage but circumstances are such that it is improbably that an event would occur even in the very long term.

Matrix of Consequence versus Probability to determine Resultant Risk Classification

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High Likelihood**	**Very High Risk**	**High Risk**	**Moderate Risk**	**Moderate / Low Risk**
	Likely	**High Risk**	**Moderate Risk**	**Moderate / Low Risk**	**Low Risk**
	Low Likelihood	**Moderate Risk**	**Moderate / Low Risk**	**Low Risk**	**Very Low Risk**
	Unlikely	**Moderate / Low Risk**	**Low Risk**	**Very Low Risk**	**Very Low Risk**

Resultant Risk Classification Definitions

Potential Significance: Risk Classification (in accordance with CIRIA C552)	
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or, there is evidence that severe harm to a designated receptor is currently happening.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard at the site. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate Risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not undertaken already) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the long term.
Moderate / Low Risk	Not defined in context in CIRIA 552.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Appendix B HazWasteOnline™ Summary Sheets

Waste Classification Report

GLYS7-UGWZD-7CXJP

Job name

1016734 Project T

Description/Comments

Project

Site

Related Documents

#	Name	Description
None		

Waste Stream Template

Example waste stream template for contaminated soils

Classified by

Name:
Lily Bee
Date:
26 Mar 2020 16:01 GMT
Telephone:
0191 213 4686

Company:
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Horsley House
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HazWasteOnline™ Training Record:

Course	**Date**
Hazardous Waste Classification	-
Advanced Hazardous Waste Classification	-

Report

Created by: Lily Bee
Created date: 26 Mar 2020 16:01 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	BH03	4.5	Non Hazardous		3
2	BH03[2]	11	Hazardous	HP 3(i), HP 7, HP 14	6
3	BH01	0.8	Non Hazardous		9
4	WS02	0.2	Non Hazardous		12
5	WS04	0.8	Non Hazardous		15
6	WS05	2.5	Hazardous	HP 3(i), HP 4, HP 6, HP 7, HP 10, HP 11, HP 13, HP 14	18
7	WS06	0.3	Non Hazardous		23
8	WS07A	0.8	Non Hazardous		26
9	WS08	0.8	Non Hazardous		29
10	WS08[2]	1.6	Non Hazardous		32
11	WS09	1.5	Non Hazardous		35

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
12	WS09[2]	2.6	Non Hazardous		38
13	WS10	0.15	Non Hazardous		41
14	BH02	5.5	Non Hazardous		44
15	BH02[2]	3.5	Non Hazardous		47

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Classification of sample: BH03

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
BH03		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
4.5 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				0.4	mg/kg	1.32	0.528	mg/kg	0.0000528 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				<0.2	mg/kg	2.775	<0.555	mg/kg	<0.0000555 %		<LOD
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.5	mg/kg	3.22	1.61	mg/kg	0.000161 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide }				<0.15	mg/kg	1.462	<0.219	mg/kg	<0.0000219 %		<LOD
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
8	copper { dicopper oxide; copper (I) oxide }				0.8	mg/kg	1.126	0.901	mg/kg	0.0000901 %		
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead chromate }			1	<0.3	mg/kg	1.56	<0.468	mg/kg	<0.00003 %		<LOD
	082-004-00-2	231-846-0	7758-97-6									
10	manganese { manganese sulphate }				<20	mg/kg	2.749	<54.971	mg/kg	<0.0055 %		<LOD
	025-003-00-4	232-089-9	7785-87-7									
11	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
12	molybdenum { molybdenum(VI) oxide }				<0.4	mg/kg	1.5	<0.6	mg/kg	<0.00006 %		<LOD
	042-001-00-9	215-204-7	1313-27-5									
13	nickel { nickel chromate }				<1	mg/kg	2.976	<2.976	mg/kg	<0.000298 %		<LOD
	028-035-00-7	238-766-5	14721-18-7									
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %		
	034-002-00-8											
15	zinc { zinc chromate }				<1	mg/kg	2.774	<2.774	mg/kg	<0.000277 %		<LOD
	024-007-00-3											

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
16	●	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
				TPH									
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
18		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
20	●	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.1	mg/kg	1.884	0.188	mg/kg	0.0000188 %		
		006-007-00-5											
23	●	pH				9.9	pH		9.9	pH	9.9 pH		
				PH									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25	●	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-917-1	208-96-8									
26	●	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-469-6	83-32-9									
27	●	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
28	●	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			201-581-5	85-01-8									
29	●	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-371-1	120-12-7									
30	●	fluoranthene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
			205-912-4	206-44-0									
31	●	pyrene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
			204-927-3	129-00-0									
32		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
37	●	indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
39	●	benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-883-8	191-24-2									
40		phenol				0.9	mg/kg		0.9	mg/kg	0.00009 %		
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.00835 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH03[2]

⚠ **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:		LoW Code:	
BH03[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
11 m		Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

zinc chromate: (compound conc.: 0.255%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

zinc chromate: (compound conc.: 0.255%)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00099%)

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand			CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
1		antimony { antimony trioxide }				10	mg/kg	1.197	11.971	mg/kg	0.0012 %		
		051-005-00-X	215-175-0	1309-64-4									
2		arsenic { arsenic trioxide }				49	mg/kg	1.32	64.696	mg/kg	0.00647 %		
		033-003-00-0	215-481-4	1327-53-3									
3		beryllium { beryllium oxide }				1.1	mg/kg	2.775	3.053	mg/kg	0.000305 %		
		004-003-00-8	215-133-1	1304-56-9									
4		boron { diboron trioxide; boric oxide }				0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %		
		005-008-00-8	215-125-8	1303-86-2									

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
5		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		9	mg/kg	1.142	10.281	mg/kg	0.00103 %		
6		chromium in chromium(III) compounds { ● chromium(III) oxide }		215-160-9	1308-38-9		130	mg/kg	1.462	190.002	mg/kg	0.019 %		
7		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
8		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		240	mg/kg	1.126	270.213	mg/kg	0.027 %		
9		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	850	mg/kg	1.56	1325.843	mg/kg	0.085 %		
10		manganese { manganese sulphate }	025-003-00-4	232-089-9	7785-87-7		290	mg/kg	2.749	797.084	mg/kg	0.0797 %		
11		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		5.6	mg/kg	1.353	7.58	mg/kg	0.000758 %		
12		molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.2	mg/kg	1.5	4.801	mg/kg	0.00048 %		
13		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		51	mg/kg	2.976	151.79	mg/kg	0.0152 %		
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				2.6	mg/kg	2.554	6.639	mg/kg	0.000664 %		
15		zinc { zinc chromate }	024-007-00-3				920	mg/kg	2.774	2552.215	mg/kg	0.255 %		
16	●	TPH (C6 to C40) petroleum group			TPH		9.9	mg/kg		9.9	mg/kg	0.00099 %		
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				3.3	mg/kg	1.884	6.217	mg/kg	0.000622 %		
23	●	pH			PH		9	pH		9	pH	9pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.3	mg/kg		0.3	mg/kg	0.00003 %		
25	●	acenaphthylene		205-917-1	208-96-8		0.1	mg/kg		0.1	mg/kg	0.00001 %		
26	●	acenaphthene		201-469-6	83-32-9		0.4	mg/kg		0.4	mg/kg	0.00004 %		
27	●	fluorene		201-695-5	86-73-7		0.7	mg/kg		0.7	mg/kg	0.00007 %		
28	●	phenanthrene		201-581-5	85-01-8		1.1	mg/kg		1.1	mg/kg	0.00011 %		
29	●	anthracene		204-371-1	120-12-7		0.4	mg/kg		0.4	mg/kg	0.00004 %		

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
30	●	fluoranthene		205-912-4	206-44-0		1.7 mg/kg		1.7 mg/kg	0.00017 %		
31	●	pyrene		204-927-3	129-00-0		1.3 mg/kg		1.3 mg/kg	0.00013 %		
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.4 mg/kg		0.4 mg/kg	0.00004 %		
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.8 mg/kg		0.8 mg/kg	0.00008 %		
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.5 mg/kg		0.5 mg/kg	0.00005 %		
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.3 mg/kg		0.3 mg/kg	0.00003 %		
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.8 mg/kg		0.8 mg/kg	0.00008 %		
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		0.4 mg/kg		0.4 mg/kg	0.00004 %		
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.3 mg/kg		0.3 mg/kg	0.00003 %		
39	●	benzo[ghi]perylene		205-883-8	191-24-2		0.5 mg/kg		0.5 mg/kg	0.00005 %		
40		phenol	604-001-00-2	203-632-7	108-95-2		0.6 mg/kg		0.6 mg/kg	0.00006 %		
									Total:	0.495 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
🟥	Hazardous result
🟧	Potentially Hazardous result
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
BH01		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.8 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.7	mg/kg	1.32	8.846	mg/kg	0.000885 %		
3	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.2	mg/kg	2.775	0.555	mg/kg	0.0000555 %		
4	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.3	mg/kg	3.22	0.966	mg/kg	0.0000966 %		
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
6	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		9.8	mg/kg	1.462	14.323	mg/kg	0.00143 %		
7	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
8	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7.8	mg/kg	1.126	8.782	mg/kg	0.000878 %		
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	7	mg/kg	1.56	10.919	mg/kg	0.0007 %		
10	manganese { manganese sulphate }	025-003-00-4	232-089-9	7785-87-7		50	mg/kg	2.749	137.428	mg/kg	0.0137 %		
11	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
12	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<0.4	mg/kg	1.5	<0.6	mg/kg	<0.00006 %		<LOD
13	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		7.7	mg/kg	2.976	22.917	mg/kg	0.00229 %		
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
15	zinc { zinc chromate }	024-007-00-3				13	mg/kg	2.774	36.064	mg/kg	0.00361 %		

#		Determinand			CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
16	●	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
				TPH									
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		603-181-00-X	216-653-1	1634-04-4									
18		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-021-00-3	203-625-9	108-88-3									
20	●	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
21		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
		006-007-00-5											
23	●	pH				10.5	pH		10.5	pH	10.5 pH		
				PH									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
25	●	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-917-1	208-96-8									
26	●	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-469-6	83-32-9									
27	●	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-695-5	86-73-7									
28	●	phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-581-5	85-01-8									
29	●	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			204-371-1	120-12-7									
30	●	fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-912-4	206-44-0									
31	●	pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			204-927-3	129-00-0									
32		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
37	●	indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
39	●	benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-883-8	191-24-2									
40		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0254 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS02

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS02		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.2 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.1	mg/kg	1.197	2.514	mg/kg	0.000251 %		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.1	mg/kg	1.32	9.374	mg/kg	0.000937 %		
3	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.7	mg/kg	2.775	1.943	mg/kg	0.000194 %		
4	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.9	mg/kg	1.142	1.028	mg/kg	0.000103 %		
6	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		17	mg/kg	1.462	24.846	mg/kg	0.00248 %		
7	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		**<LOD**
8	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		41	mg/kg	1.126	46.161	mg/kg	0.00462 %		
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	76	mg/kg	1.56	118.546	mg/kg	0.0076 %		
10	manganese { manganese sulphate }	025-003-00-4	232-089-9	7785-87-7		580	mg/kg	2.749	1594.167	mg/kg	0.159 %		
11	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.13	mg/kg	1.353	0.176	mg/kg	0.0000176 %		
12	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		0.8	mg/kg	1.5	1.2	mg/kg	0.00012 %		
13	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		14	mg/kg	2.976	41.668	mg/kg	0.00417 %		
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %		
15	zinc { zinc chromate }	024-007-00-3				97	mg/kg	2.774	269.092	mg/kg	0.0269 %		

#		Determinand				CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
			CLP index number	EC Number	CAS Number									
16	●	TPH (C6 to C40) petroleum group			TPH		33	mg/kg		33	mg/kg	0.0033 %		
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.1	mg/kg	1.884	0.188	mg/kg	0.0000188 %		
23	●	pH			PH		10.7	pH		10.7	pH	10.7 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
25	●	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
26	●	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
27	●	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28	●	phenanthrene		201-581-5	85-01-8		0.5	mg/kg		0.5	mg/kg	0.00005 %		
29	●	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
30	●	fluoranthene		205-912-4	206-44-0		0.9	mg/kg		0.9	mg/kg	0.00009 %		
31	●	pyrene		204-927-3	129-00-0		1.1	mg/kg		1.1	mg/kg	0.00011 %		
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.6	mg/kg		0.6	mg/kg	0.00006 %		
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.5	mg/kg		0.5	mg/kg	0.00005 %		
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.5	mg/kg		0.5	mg/kg	0.00005 %		
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.3	mg/kg		0.3	mg/kg	0.00003 %		
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.6	mg/kg		0.6	mg/kg	0.00006 %		
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		0.5	mg/kg		0.5	mg/kg	0.00005 %		
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.1	mg/kg		0.1	mg/kg	0.00001 %		
39	●	benzo[ghi]perylene		205-883-8	191-24-2		0.3	mg/kg		0.3	mg/kg	0.00003 %		
40		phenol	604-001-00-2	203-632-7	108-95-2		2	mg/kg		2	mg/kg	0.0002 %		
											Total:	0.212 %		

Key

🟨	User supplied data
▒	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚗	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Soil sample did not exhibit free phase or similar and does not conform to the HP3(i) definition of flammable. Therefore, considered non hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0033%)

Classification of sample: WS04

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS04		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.8 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
1		antimony { antimony trioxide }				1.8 mg/kg	1.197	2.155 mg/kg	0.000215 %		
		051-005-00-X	215-175-0	1309-64-4							
2		arsenic { arsenic trioxide }				6.9 mg/kg	1.32	9.11 mg/kg	0.000911 %		
		033-003-00-0	215-481-4	1327-53-3							
3		beryllium { beryllium oxide }				0.5 mg/kg	2.775	1.388 mg/kg	0.000139 %		
		004-003-00-8	215-133-1	1304-56-9							
4		boron { diboron trioxide; boric oxide }				0.8 mg/kg	3.22	2.576 mg/kg	0.000258 %		
		005-008-00-8	215-125-8	1303-86-2							
5		cadmium { cadmium oxide }				0.1 mg/kg	1.142	0.114 mg/kg	0.0000114 %		
		048-002-00-0	215-146-2	1306-19-0							
6		chromium in chromium(III) compounds { chromium(III) oxide }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
			215-160-9	1308-38-9							
7		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		**<LOD**
		024-001-00-0	215-607-8	1333-82-0							
8		copper { dicopper oxide; copper (I) oxide }				19 mg/kg	1.126	21.392 mg/kg	0.00214 %		
		029-002-00-X	215-270-7	1317-39-1							
9		lead { lead chromate }			1	83 mg/kg	1.56	129.465 mg/kg	0.0083 %		
		082-004-00-2	231-846-0	7758-97-6							
10		manganese { manganese sulphate }				230 mg/kg	2.749	632.17 mg/kg	0.0632 %		
		025-003-00-4	232-089-9	7785-87-7							
11		mercury { mercury dichloride }				0.13 mg/kg	1.353	0.176 mg/kg	0.0000176 %		
		080-010-00-X	231-299-8	7487-94-7							
12		molybdenum { molybdenum(VI) oxide }				0.5 mg/kg	1.5	0.75 mg/kg	0.000075 %		
		042-001-00-9	215-204-7	1313-27-5							
13		nickel { nickel chromate }				8.4 mg/kg	2.976	25.001 mg/kg	0.0025 %		
		028-035-00-7	238-766-5	14721-18-7							
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.6 mg/kg	2.554	1.532 mg/kg	0.000153 %		
		034-002-00-8									
15		zinc { zinc chromate }				61 mg/kg	2.774	169.223 mg/kg	0.0169 %		
		024-007-00-3									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
16	●	TPH (C6 to C40) petroleum group				960 mg/kg		960 mg/kg	0.096 %		
				TPH							
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
		603-181-00-X	216-653-1	1634-04-4							
18		benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
		601-020-00-8	200-753-7	71-43-2							
19		toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
		601-021-00-3	203-625-9	108-88-3							
20	●	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4							
21		xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.1 mg/kg	1.884	0.188 mg/kg	0.0000188 %		
		006-007-00-5									
23	●	pH				10.1 pH		10.1 pH	10.1 pH		
				PH							
24		naphthalene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
		601-052-00-2	202-049-5	91-20-3							
25	●	acenaphthylene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
			205-917-1	208-96-8							
26	●	acenaphthene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
			201-469-6	83-32-9							
27	●	fluorene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
			201-695-5	86-73-7							
28	●	phenanthrene				1.5 mg/kg		1.5 mg/kg	0.00015 %		
			201-581-5	85-01-8							
29	●	anthracene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
			204-371-1	120-12-7							
30	●	fluoranthene				3.2 mg/kg		3.2 mg/kg	0.00032 %		
			205-912-4	206-44-0							
31	●	pyrene				2.8 mg/kg		2.8 mg/kg	0.00028 %		
			204-927-3	129-00-0							
32		benzo[a]anthracene				1.9 mg/kg		1.9 mg/kg	0.00019 %		
		601-033-00-9	200-280-6	56-55-3							
33		chrysene				2.2 mg/kg		2.2 mg/kg	0.00022 %		
		601-048-00-0	205-923-4	218-01-9							
34		benzo[b]fluoranthene				1.7 mg/kg		1.7 mg/kg	0.00017 %		
		601-034-00-4	205-911-9	205-99-2							
35		benzo[k]fluoranthene				0.9 mg/kg		0.9 mg/kg	0.00009 %		
		601-036-00-5	205-916-6	207-08-9							
36		benzo[a]pyrene; benzo[def]chrysene				1.9 mg/kg		1.9 mg/kg	0.00019 %		
		601-032-00-3	200-028-5	50-32-8							
37	●	indeno[123-cd]pyrene				1.5 mg/kg		1.5 mg/kg	0.00015 %		
			205-893-2	193-39-5							
38		dibenz[a,h]anthracene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		601-041-00-2	200-181-8	53-70-3							
39	●	benzo[ghi]perylene				1.4 mg/kg		1.4 mg/kg	0.00014 %		
			205-883-8	191-24-2							
40		phenol				1.1 mg/kg		1.1 mg/kg	0.00011 %		
		604-001-00-2	203-632-7	108-95-2							
								Total:	0.195 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Soil sample did not exhibit free phase or similar and does not conform to the HP3(i) definition of flammable. Therefore, considered non hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.096%)

Classification of sample: WS05

⚠ **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:	LoW Code:	
WS05	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
2.5 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 4: Irritant - skin irritation and eye damage "waste which on application can cause skin irritation or damage to the eye"

Hazard Statements hit:

Skin Irrit. 2; H315 "Causes skin irritation."

Because of determinands:

phenanthrene: (conc.: 3.4%)
anthracene: (conc.: 16%)
pyrene: (conc.: 2%)

Eye Irrit. 2; H319 "Causes serious eye irritation."

Because of determinands:

phenanthrene: (conc.: 3.4%)
anthracene: (conc.: 16%)
pyrene: (conc.: 2%)

HP 6: Acute Toxicity "waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration"

Hazard Statements hit:

Acute Tox. 1; H310 "Fatal in contact with skin."

Because of determinand:

acenaphthylene: (conc.: 0.35%)

Acute Tox. 1; H330 "Fatal if inhaled."

Because of determinand:

acenaphthylene: (conc.: 0.35%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 3.9%)
benzo[a]anthracene: (conc.: 0.78%)
chrysene: (conc.: 0.76%)
benzo[b]fluoranthene: (conc.: 0.49%)
benzo[k]fluoranthene: (conc.: 0.27%)
benzo[a]pyrene; benzo[def]chrysene: (conc.: 0.69%)

Carc. 2; H351 "Suspected of causing cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinands:

naphthalene: (conc.: 1.6%)
phenanthrene: (conc.: 3.4%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1B; H360FD "May damage fertility. May damage the unborn child."

Because of determinand:

benzo[a]pyrene; benzo[def]chrysene: (conc.: 0.69%)

Repr. 2; H361d "Suspected of damaging the unborn child."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 3.9%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 3.9%)
benzo[a]pyrene; benzo[def]chrysene: (conc.: 0.69%)

HP 13: Sensitising "waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs"

Hazard Statements hit:

Skin Sens. 1; H317 "May cause an allergic skin reaction."

Because of determinand:

anthracene: (conc.: 16%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Acute 1; H400 "Very toxic to aquatic life."

Because of determinands:

naphthalene: (conc.: 1.6%)
acenaphthene: (conc.: 0.49%)
fluorene: (conc.: 0.9%)
phenanthrene: (conc.: 3.4%)
anthracene: (conc.: 16%)
fluoranthene: (conc.: 2.3%)
pyrene: (conc.: 2%)
benzo[a]anthracene: (conc.: 0.78%)
chrysene: (conc.: 0.76%)
benzo[b]fluoranthene: (conc.: 0.49%)
benzo[k]fluoranthene: (conc.: 0.27%)
benzo[a]pyrene; benzo[def]chrysene: (conc.: 0.69%)
benzo[ghi]perylene: (conc.: 0.4%)

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

naphthalene: (conc.: 1.6%)
acenaphthene: (conc.: 0.49%)
fluorene: (conc.: 0.9%)
phenanthrene: (conc.: 3.4%)
anthracene: (conc.: 16%)
fluoranthene: (conc.: 2.3%)
pyrene: (conc.: 2%)
benzo[a]anthracene: (conc.: 0.78%)

chrysene: (conc.: 0.76%)
benzo[b]fluoranthene: (conc.: 0.49%)
benzo[k]fluoranthene: (conc.: 0.27%)
benzo[a]pyrene; benzo[def]chrysene: (conc.: 0.69%)
benzo[ghi]perylene: (conc.: 0.4%)

Aquatic Chronic 2; H411 "Toxic to aquatic life with long lasting effects."

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 3.9%)
acenaphthene: (conc.: 0.49%)

Hazard properties (substances considered hazardous until shown otherwise)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 3.9%)

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.1	mg/kg	1.197	2.514	mg/kg	0.000251 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				6.1	mg/kg	1.32	8.054	mg/kg	0.000805 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.5	mg/kg	2.775	1.388	mg/kg	0.000139 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide }				12	mg/kg	1.462	17.539	mg/kg	0.00175 %		
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
8	copper { dicopper oxide; copper (I) oxide }				20	mg/kg	1.126	22.518	mg/kg	0.00225 %		
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead chromate }			1	79	mg/kg	1.56	123.225	mg/kg	0.0079 %		
	082-004-00-2	231-846-0	7758-97-6									
10	manganese { manganese sulphate }				220	mg/kg	2.749	604.684	mg/kg	0.0605 %		
	025-003-00-4	232-089-9	7785-87-7									
11	mercury { mercury dichloride }				0.14	mg/kg	1.353	0.189	mg/kg	0.0000189 %		
	080-010-00-X	231-299-8	7487-94-7									
12	molybdenum { molybdenum(VI) oxide }				0.6	mg/kg	1.5	0.9	mg/kg	0.00009 %		
	042-001-00-9	215-204-7	1313-27-5									
13	nickel { nickel chromate }				10	mg/kg	2.976	29.763	mg/kg	0.00298 %		
	028-035-00-7	238-766-5	14721-18-7									
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	034-002-00-8											
15	zinc { zinc chromate }				64	mg/kg	2.774	177.545	mg/kg	0.0178 %		
	024-007-00-3											

#		Determinand				CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
			CLP index number	EC Number	CAS Number									
16	●	TPH (C6 to C40) petroleum group			TPH		39000.7	mg/kg		39000.7	mg/kg	3.9 %		
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.1	mg/kg	1.884	0.188	mg/kg	0.0000188 %		
23	●	pH			PH		10.5	pH		10.5	pH	10.5 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		16000	mg/kg		16000	mg/kg	1.6 %		
25	●	acenaphthylene		205-917-1	208-96-8		3500	mg/kg		3500	mg/kg	0.35 %		
26	●	acenaphthene		201-469-6	83-32-9		4900	mg/kg		4900	mg/kg	0.49 %		
27	●	fluorene		201-695-5	86-73-7		9000	mg/kg		9000	mg/kg	0.9 %		
28	●	phenanthrene		201-581-5	85-01-8		34000	mg/kg		34000	mg/kg	3.4 %		
29	●	anthracene		204-371-1	120-12-7		160000	mg/kg		160000	mg/kg	16%		
30	●	fluoranthene		205-912-4	206-44-0		23000	mg/kg		23000	mg/kg	2.3 %		
31	●	pyrene		204-927-3	129-00-0		20000	mg/kg		20000	mg/kg	2%		
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		7800	mg/kg		7800	mg/kg	0.78 %		
33		chrysene	601-048-00-0	205-923-4	218-01-9		7600	mg/kg		7600	mg/kg	0.76 %		
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		4900	mg/kg		4900	mg/kg	0.49 %		
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		2700	mg/kg		2700	mg/kg	0.27 %		
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		6900	mg/kg		6900	mg/kg	0.69 %		
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		4300	mg/kg		4300	mg/kg	0.43 %		
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		580	mg/kg		580	mg/kg	0.058 %		
39	●	benzo[ghi]perylene		205-883-8	191-24-2		4000	mg/kg		4000	mg/kg	0.4 %		
40		phenol	604-001-00-2	203-632-7	108-95-2		0.7	mg/kg		0.7	mg/kg	0.00007 %		
											Total:	34.913 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
🟥	Hazardous result
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS06

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS06		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.3 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand			CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
1		antimony { antimony trioxide }				2.7	mg/kg	1.197	3.232	mg/kg	0.000323 %		
		051-005-00-X	215-175-0	1309-64-4									
2		arsenic { arsenic trioxide }				10	mg/kg	1.32	13.203	mg/kg	0.00132 %		
		033-003-00-0	215-481-4	1327-53-3									
3		beryllium { beryllium oxide }				0.9	mg/kg	2.775	2.498	mg/kg	0.00025 %		
		004-003-00-8	215-133-1	1304-56-9									
4		boron { diboron trioxide; boric oxide }				0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
		005-008-00-8	215-125-8	1303-86-2									
5		cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
		048-002-00-0	215-146-2	1306-19-0									
6		chromium in chromium(III) compounds { chromium(III) oxide }				26	mg/kg	1.462	38	mg/kg	0.0038 %		
			215-160-9	1308-38-9									
7		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
8		copper { dicopper oxide; copper (I) oxide }				27	mg/kg	1.126	30.399	mg/kg	0.00304 %		
		029-002-00-X	215-270-7	1317-39-1									
9		lead { lead chromate }			1	93	mg/kg	1.56	145.063	mg/kg	0.0093 %		
		082-004-00-2	231-846-0	7758-97-6									
10		manganese { manganese sulphate }				580	mg/kg	2.749	1594.167	mg/kg	0.159 %		
		025-003-00-4	232-089-9	7785-87-7									
11		mercury { mercury dichloride }				0.17	mg/kg	1.353	0.23	mg/kg	0.000023 %		
		080-010-00-X	231-299-8	7487-94-7									
12		molybdenum { molybdenum(VI) oxide }				0.8	mg/kg	1.5	1.2	mg/kg	0.00012 %		
		042-001-00-9	215-204-7	1313-27-5									
13		nickel { nickel chromate }				12	mg/kg	2.976	35.715	mg/kg	0.00357 %		
		028-035-00-7	238-766-5	14721-18-7									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
		034-002-00-8											
15		zinc { zinc chromate }				69	mg/kg	2.774	191.416	mg/kg	0.0191 %		
		024-007-00-3											

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
16	●	TPH (C6 to C40) petroleum group			TPH		850 mg/kg		850 mg/kg	0.085 %		
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.1 mg/kg	1.884	0.188 mg/kg	0.0000188 %		
23	●	pH			PH		10.5 pH		10.5 pH	10.5 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.1 mg/kg		0.1 mg/kg	0.00001 %		
25	●	acenaphthylene		205-917-1	208-96-8		0.8 mg/kg		0.8 mg/kg	0.00008 %		
26	●	acenaphthene		201-469-6	83-32-9		0.7 mg/kg		0.7 mg/kg	0.00007 %		
27	●	fluorene		201-695-5	86-73-7		0.4 mg/kg		0.4 mg/kg	0.00004 %		
28	●	phenanthrene		201-581-5	85-01-8		0.3 mg/kg		0.3 mg/kg	0.00003 %		
29	●	anthracene		204-371-1	120-12-7		0.1 mg/kg		0.1 mg/kg	0.00001 %		
30	●	fluoranthene		205-912-4	206-44-0		0.6 mg/kg		0.6 mg/kg	0.00006 %		
31	●	pyrene		204-927-3	129-00-0		1 mg/kg		1 mg/kg	0.0001 %		
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.5 mg/kg		0.5 mg/kg	0.00005 %		
33		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.8 mg/kg		0.8 mg/kg	0.00008 %		
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.2 mg/kg		0.2 mg/kg	0.00002 %		
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.4 mg/kg		0.4 mg/kg	0.00004 %		
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
39	●	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
40		phenol	604-001-00-2	203-632-7	108-95-2		2.6 mg/kg		2.6 mg/kg	0.00026 %		
									Total:	0.287 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Soil sample did not exhibit free phase or similar and does not conform to the HP3(i) definition of flammable. Therefore, considered non hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.085%)

Classification of sample: WS07A

✓ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS07A		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.8 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.1	mg/kg	1.197	2.514	mg/kg	0.000251 %		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.7	mg/kg	1.32	10.167	mg/kg	0.00102 %		
3	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.9	mg/kg	2.775	2.498	mg/kg	0.00025 %		
4	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.3	mg/kg	3.22	0.966	mg/kg	0.0000966 %		
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
6	chromium in chromium(III) compounds { ● chromium(III) oxide }		215-160-9	1308-38-9		50	mg/kg	1.462	73.078	mg/kg	0.00731 %		
7	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
8	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		29	mg/kg	1.126	32.651	mg/kg	0.00327 %		
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	63	mg/kg	1.56	98.268	mg/kg	0.0063 %		
10	manganese { manganese sulphate }	025-003-00-4	232-089-9	7785-87-7		800	mg/kg	2.749	2198.851	mg/kg	0.22 %		
11	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.06	mg/kg	1.353	0.0812	mg/kg	0.00000812 %		
12	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		0.8	mg/kg	1.5	1.2	mg/kg	0.00012 %		
13	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		32	mg/kg	2.976	95.24	mg/kg	0.00952 %		
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
15	zinc { zinc chromate }	024-007-00-3				100	mg/kg	2.774	277.415	mg/kg	0.0277 %		

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16	●	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.3	mg/kg	1.884	0.565	mg/kg	0.0000565 %		
23	●	pH			PH		6.2	pH		6.2	pH	6.2 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	●	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	●	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	●	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	●	phenanthrene		201-581-5	85-01-8		0.1	mg/kg		0.1	mg/kg	0.00001 %		
29	●	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	●	fluoranthene		205-912-4	206-44-0		0.2	mg/kg		0.2	mg/kg	0.00002 %		
31	●	pyrene		204-927-3	129-00-0		0.3	mg/kg		0.3	mg/kg	0.00003 %		
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	●	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
											Total:	0.277 %		

Key	
🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS08

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS08		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.8 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide } 051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
2	arsenic { arsenic trioxide } 033-003-00-0	215-481-4	1327-53-3		3.2 mg/kg	1.32	4.225 mg/kg	0.000423 %		
3	beryllium { beryllium oxide } 004-003-00-8	215-133-1	1304-56-9		0.3 mg/kg	2.775	0.833 mg/kg	0.0000833 %		
4	boron { diboron trioxide; boric oxide } 005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %		
5	cadmium { cadmium oxide } 048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
6	chromium in chromium(III) compounds { chromium(III) oxide }	215-160-9	1308-38-9		10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
7	chromium in chromium(VI) compounds { chromium(VI) oxide } 024-001-00-0	215-607-8	1333-82-0		<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
8	copper { dicopper oxide; copper (I) oxide } 029-002-00-X	215-270-7	1317-39-1		8.5 mg/kg	1.126	9.57 mg/kg	0.000957 %		
9	lead { lead chromate } 082-004-00-2	231-846-0	7758-97-6	1	22 mg/kg	1.56	34.316 mg/kg	0.0022 %		
10	manganese { manganese sulphate } 025-003-00-4	232-089-9	7785-87-7		260 mg/kg	2.749	714.627 mg/kg	0.0715 %		
11	mercury { mercury dichloride } 080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
12	molybdenum { molybdenum(VI) oxide } 042-001-00-9	215-204-7	1313-27-5		<0.4 mg/kg	1.5	<0.6 mg/kg	<0.00006 %		<LOD
13	nickel { nickel chromate } 028-035-00-7	238-766-5	14721-18-7		9.3 mg/kg	2.976	27.679 mg/kg	0.00277 %		
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex } 034-002-00-8				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
15	zinc { zinc chromate } 024-007-00-3				38 mg/kg	2.774	105.418 mg/kg	0.0105 %		

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16	●	TPH (C6 to C40) petroleum group			TPH		390	mg/kg		390	mg/kg	0.039 %		
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
23	●	pH			PH		10.1	pH		10.1	pH	10.1 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
25	●	acenaphthylene		205-917-1	208-96-8		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
26	●	acenaphthene		201-469-6	83-32-9		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
27	●	fluorene		201-695-5	86-73-7		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
28	●	phenanthrene		201-581-5	85-01-8		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
29	●	anthracene		204-371-1	120-12-7		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
30	●	fluoranthene		205-912-4	206-44-0		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
31	●	pyrene		204-927-3	129-00-0		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
33		chrysene	601-048-00-0	205-923-4	218-01-9		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
39	●	benzo[ghi]perylene		205-883-8	191-24-2		<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
40		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
											Total:	0.133 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Soil sample did not exhibit free phase or similar and does not conform to the HP3(i) definition of flammable. Therefore, considered non hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.039%)

Classification of sample: WS08[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS08[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1.6 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		**<LOD**
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.6	mg/kg	1.32	8.714	mg/kg	0.000871 %		
3		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.2	mg/kg	2.775	0.555	mg/kg	0.0000555 %		
4		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %		
5		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
6		chromium in chromium(III) compounds { ● chromium(III) oxide }		215-160-9	1308-38-9		10	mg/kg	1.462	14.616	mg/kg	0.00146 %		
7		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		**<LOD**
8		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6.9	mg/kg	1.126	7.769	mg/kg	0.000777 %		
9		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	8.3	mg/kg	1.56	12.946	mg/kg	0.00083 %		
10		manganese { manganese sulphate }	025-003-00-4	232-089-9	7785-87-7		54	mg/kg	2.749	148.422	mg/kg	0.0148 %		
11		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		**<LOD**
12		molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<0.4	mg/kg	1.5	<0.6	mg/kg	<0.00006 %		**<LOD**
13		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		13	mg/kg	2.976	38.691	mg/kg	0.00387 %		
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		**<LOD**
15		zinc { zinc chromate }	024-007-00-3				20	mg/kg	2.774	55.483	mg/kg	0.00555 %		

#		Determinand				CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
			CLP index number	EC Number	CAS Number									
16	●	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
23	●	pH			PH		8.8	pH		8.8	pH	8.8 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	●	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	●	acenaphthene		201-469-6	83-32-9		0.4	mg/kg		0.4	mg/kg	0.00004 %		
27	●	fluorene		201-695-5	86-73-7		0.3	mg/kg		0.3	mg/kg	0.00003 %		
28	●	phenanthrene		201-581-5	85-01-8		1.2	mg/kg		1.2	mg/kg	0.00012 %		
29	●	anthracene		204-371-1	120-12-7		0.4	mg/kg		0.4	mg/kg	0.00004 %		
30	●	fluoranthene		205-912-4	206-44-0		1.3	mg/kg		1.3	mg/kg	0.00013 %		
31	●	pyrene		204-927-3	129-00-0		1.3	mg/kg		1.3	mg/kg	0.00013 %		
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.5	mg/kg		0.5	mg/kg	0.00005 %		
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.6	mg/kg		0.6	mg/kg	0.00006 %		
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.3	mg/kg		0.3	mg/kg	0.00003 %		
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.2	mg/kg		0.2	mg/kg	0.00002 %		
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.6	mg/kg		0.6	mg/kg	0.00006 %		
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		0.3	mg/kg		0.3	mg/kg	0.00003 %		
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	●	benzo[ghi]perylene		205-883-8	191-24-2		0.3	mg/kg		0.3	mg/kg	0.00003 %		
40		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
											Total:	0.0308 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS09

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS09		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1.5 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand			CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
1		antimony { antimony trioxide }				3.4	mg/kg	1.197	4.07	mg/kg	0.000407 %		
		051-005-00-X	215-175-0	1309-64-4									
2		arsenic { arsenic trioxide }				11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
		033-003-00-0	215-481-4	1327-53-3									
3		beryllium { beryllium oxide }				0.4	mg/kg	2.775	1.11	mg/kg	0.000111 %		
		004-003-00-8	215-133-1	1304-56-9									
4		boron { diboron trioxide; boric oxide }				1	mg/kg	3.22	3.22	mg/kg	0.000322 %		
		005-008-00-8	215-125-8	1303-86-2									
5		cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
		048-002-00-0	215-146-2	1306-19-0									
6		chromium in chromium(III) compounds { chromium(III) oxide }				14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
			215-160-9	1308-38-9									
7		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
8		copper { dicopper oxide; copper (I) oxide }				71	mg/kg	1.126	79.938	mg/kg	0.00799 %		
		029-002-00-X	215-270-7	1317-39-1									
9		lead { lead chromate }			1	680	mg/kg	1.56	1060.674	mg/kg	0.068 %		
		082-004-00-2	231-846-0	7758-97-6									
10		manganese { manganese sulphate }				200	mg/kg	2.749	549.713	mg/kg	0.055 %		
		025-003-00-4	232-089-9	7785-87-7									
11		mercury { mercury dichloride }				0.41	mg/kg	1.353	0.555	mg/kg	0.0000555 %		
		080-010-00-X	231-299-8	7487-94-7									
12		molybdenum { molybdenum(VI) oxide }				0.7	mg/kg	1.5	1.05	mg/kg	0.000105 %		
		042-001-00-9	215-204-7	1313-27-5									
13		nickel { nickel chromate }				19	mg/kg	2.976	56.549	mg/kg	0.00565 %		
		028-035-00-7	238-766-5	14721-18-7									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
		034-002-00-8											
15		zinc { zinc chromate }				120	mg/kg	2.774	332.898	mg/kg	0.0333 %		
		024-007-00-3											

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16	●	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
23	●	pH			PH		10.5	pH		10.5	pH	10.5 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25	●	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26	●	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27	●	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28	●	phenanthrene		201-581-5	85-01-8		0.2	mg/kg		0.2	mg/kg	0.00002 %		
29	●	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
30	●	fluoranthene		205-912-4	206-44-0		0.3	mg/kg		0.3	mg/kg	0.00003 %		
31	●	pyrene		204-927-3	129-00-0		0.3	mg/kg		0.3	mg/kg	0.00003 %		
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
39	●	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
40		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
											Total:	0.176 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS09[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS09[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
2.6 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1.4	mg/kg	1.197	1.676	mg/kg	0.000168 %		
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.8	mg/kg	1.32	7.658	mg/kg	0.000766 %		
3		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.2	mg/kg	2.775	0.555	mg/kg	0.0000555 %		
4		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %		
5		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
6		chromium in chromium(III) compounds { ● chromium(III) oxide }		215-160-9	1308-38-9		9.4	mg/kg	1.462	13.739	mg/kg	0.00137 %		
7		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
8		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9.8	mg/kg	1.126	11.034	mg/kg	0.0011 %		
9		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	58	mg/kg	1.56	90.469	mg/kg	0.0058 %		
10		manganese { manganese sulphate }	025-003-00-4	232-089-9	7785-87-7		67	mg/kg	2.749	184.154	mg/kg	0.0184 %		
11		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.05	mg/kg	1.353	0.0677	mg/kg	0.00000677 %		
12		molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<0.4	mg/kg	1.5	<0.6	mg/kg	<0.00006 %		<LOD
13		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		9.3	mg/kg	2.976	27.679	mg/kg	0.00277 %		
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
15		zinc { zinc chromate }	024-007-00-3				28	mg/kg	2.774	77.676	mg/kg	0.00777 %		

#		Determinand				CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
			CLP index number	EC Number	CAS Number									
16	●	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22	●	cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
23	●	pH			PH		9.7	pH		9.7	pH	9.7 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25	●	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26	●	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27	●	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28	●	phenanthrene		201-581-5	85-01-8		0.1	mg/kg		0.1	mg/kg	0.00001 %		
29	●	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30	●	fluoranthene		205-912-4	206-44-0		0.2	mg/kg		0.2	mg/kg	0.00002 %		
31	●	pyrene		204-927-3	129-00-0		0.2	mg/kg		0.2	mg/kg	0.00002 %		
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
33		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
39	●	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
40		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
											Total:	0.04 %		

Key

🟨	User supplied data
▒	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
🟢	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
WS10		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.15 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3.5	mg/kg	1.32	4.621	mg/kg	0.000462 %		
3		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.2	mg/kg	2.775	<0.555	mg/kg	<0.0000555 %		<LOD
4		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.3	mg/kg	3.22	0.966	mg/kg	0.0000966 %		
5		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
6		chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		4.9	mg/kg	1.462	7.162	mg/kg	0.000716 %		
7		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
8		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6.5	mg/kg	1.126	7.318	mg/kg	0.000732 %		
9		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	57	mg/kg	1.56	88.909	mg/kg	0.0057 %		
10		manganese { manganese sulphate }	025-003-00-4	232-089-9	7785-87-7		110	mg/kg	2.749	302.342	mg/kg	0.0302 %		
11		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.05	mg/kg	1.353	0.0677	mg/kg	0.00000677 %		
12		molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		11	mg/kg	1.5	16.502	mg/kg	0.00165 %		
13		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		5	mg/kg	2.976	14.881	mg/kg	0.00149 %		
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
15		zinc { zinc chromate }	024-007-00-3				42	mg/kg	2.774	116.514	mg/kg	0.0117 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
16	●	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
				TPH									
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
18		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
20	●	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.1	mg/kg	1.884	0.188	mg/kg	0.0000188 %		
		006-007-00-5											
23	●	pH				10	pH		10	pH	10pH		
				PH									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25	●	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-917-1	208-96-8									
26	●	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-469-6	83-32-9									
27	●	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
28	●	phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
29	●	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-371-1	120-12-7									
30	●	fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
31	●	pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
32		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
37	●	indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
39	●	benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-883-8	191-24-2									
40		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0545 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH02

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
BH02		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
5.5 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#		Determinand			CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
1		antimony { antimony trioxide }				5.6	mg/kg	1.197	6.704	mg/kg	0.00067 %		
		051-005-00-X	215-175-0	1309-64-4									
2		arsenic { arsenic trioxide }				4.2	mg/kg	1.32	5.545	mg/kg	0.000555 %		
		033-003-00-0	215-481-4	1327-53-3									
3		beryllium { beryllium oxide }				0.7	mg/kg	2.775	1.943	mg/kg	0.000194 %		
		004-003-00-8	215-133-1	1304-56-9									
4		boron { diboron trioxide; boric oxide }				0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
		005-008-00-8	215-125-8	1303-86-2									
5		cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
		048-002-00-0	215-146-2	1306-19-0									
6		chromium in chromium(III) compounds { chromium(III) oxide }				13	mg/kg	1.462	19	mg/kg	0.0019 %		
			215-160-9	1308-38-9									
7		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
8		copper { dicopper oxide; copper (I) oxide }				25	mg/kg	1.126	28.147	mg/kg	0.00281 %		
		029-002-00-X	215-270-7	1317-39-1									
9		lead { lead chromate }			1	680	mg/kg	1.56	1060.674	mg/kg	0.068 %		
		082-004-00-2	231-846-0	7758-97-6									
10		manganese { manganese sulphate }				350	mg/kg	2.749	961.997	mg/kg	0.0962 %		
		025-003-00-4	232-089-9	7785-87-7									
11		mercury { mercury dichloride }				0.07	mg/kg	1.353	0.0947	mg/kg	0.00000947 %		
		080-010-00-X	231-299-8	7487-94-7									
12		molybdenum { molybdenum(VI) oxide }				0.7	mg/kg	1.5	1.05	mg/kg	0.000105 %		
		042-001-00-9	215-204-7	1313-27-5									
13		nickel { nickel chromate }				12	mg/kg	2.976	35.715	mg/kg	0.00357 %		
		028-035-00-7	238-766-5	14721-18-7									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
		034-002-00-8											
15		zinc { zinc chromate }				180	mg/kg	2.774	499.346	mg/kg	0.0499 %		
		024-007-00-3											

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16	●	TPH (C6 to C40) petroleum group			TPH		17	mg/kg		17	mg/kg	0.0017 %		
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
23	●	pH			PH		9	pH		9	pH	9pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25	●	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26	●	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27	●	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28	●	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
29	●	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
30	●	fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
31	●	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.5	mg/kg		0.5	mg/kg	0.00005 %		
39	●	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
40		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
											Total:	0.227 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Soil sample did not exhibit free phase or similar and does not conform to the HP3(i) definition of flammable. Therefore, considered non hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0017%)

Classification of sample: BH02[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:		LoW Code:	
BH02[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
3.5 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	**User entered data**	Conv. Factor	Compound conc.	**Classification value**	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1.4 mg/kg	1.197	1.676 mg/kg	0.000168 %		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.6 mg/kg	1.32	8.714 mg/kg	0.000871 %		
3	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
4	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.4 mg/kg	3.22	1.288 mg/kg	0.000129 %		
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
6	chromium in chromium(III) compounds { • chromium(III) oxide }		215-160-9	1308-38-9		38 mg/kg	1.462	55.539 mg/kg	0.00555 %		
7	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
8	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37 mg/kg	1.126	41.658 mg/kg	0.00417 %		
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	26 mg/kg	1.56	40.555 mg/kg	0.0026 %		
10	manganese { manganese sulphate }	025-003-00-4	232-089-9	7785-87-7		470 mg/kg	2.749	1291.825 mg/kg	0.129 %		
11	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.06 mg/kg	1.353	0.0812 mg/kg	0.00000812 %		
12	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		0.5 mg/kg	1.5	0.75 mg/kg	0.000075 %		
13	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		36 mg/kg	2.976	107.146 mg/kg	0.0107 %		
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
15	zinc { zinc chromate }	024-007-00-3				63 mg/kg	2.774	174.771 mg/kg	0.0175 %		

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	**User entered data**		Conv. Factor	Compound conc.		**Classification value**	MC Applied	Conc. Not Used
16	●	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
17		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
18		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
20	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
21		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
22		cyanides { ● salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
23	●	pH			PH		7.5	pH		7.5	pH	7.5 pH		
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
25	●	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
26	●	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
27	●	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28	●	phenanthrene		201-581-5	85-01-8		0.2	mg/kg		0.2	mg/kg	0.00002 %		
29	●	anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
30	●	fluoranthene		205-912-4	206-44-0		0.2	mg/kg		0.2	mg/kg	0.00002 %		
31	●	pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
33		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
37	●	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
39	●	benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
40		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
											Total:	0.173 %		

Key

🟨	User supplied data
▨	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
⚛	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non CLP determinands

- **chromium(III) oxide** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings (edit as required)

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

manganese {manganese sulphate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil. (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2020.85.4212.8363 (25 Mar 2020)
HazWasteOnline Database: 2020.85.4212.8363 (25 Mar 2020)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

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ZERO
CARBON
DESIGN 2030

Appendix C MSDS’s

Environmental Permit Variation Application

Site Condition and Baseline Report

Telehouse International Corporation of Europe Limited

SLR Project No.: 410.066261.00001

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

As of the revision date above, this SDS meets the regulations in the United Kingdom & Ireland.

1.1. PRODUCT IDENTIFIER

Product Name: **DIESEL**
Product Description: Hydrocarbons and Additives
Product Code: 708607-60

Trade Names	Trade Names
AUTODIESEL	DIESEL
ESSO ADO .005%S -15CFPP(W) 100%A DIES:BI	ESSO AUTODIESEL
ESSO BUNKER DIESEL ULS (UA)	ESSO DIESEL ULS (A)
ESSO DIESEL ULS (UA)	ESSO HEAVY-DUTY DIESEL
ESSO HEAVY-DUTY DIESEL FE	SYNERGY DIESEL
SYNERGY SUPREME+ DIESEL	

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Intended Use: Diesel engine fuel

Identified Uses:
Manufacture of substance
Distribution of substance
Use as an intermediate
Formulation and (re)packing of substances and mixtures
Lubricants - Industrial
Use as a fuel - Industrial
Functional Fluids - Industrial
Use as a fuel - Professional
Use as a fuel - Consumer

See Section 16 for list of REACH Use Descriptors for Identified Uses shown above.

Uses advised against: This product is not recommended for any industrial, professional or consumer use other than the Identified Uses above.

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Supplier: **Esso Petroleum Company Ltd.**
Ermyn Way
Ermyn House
KT22 8UX LEATHERHEAD, SURREY
Great Britain

Supplier General Contact: (UK) (+44) (0) 1372 222 000
SDS Internet Address: www.msds.exxonmobil.com
E-Mail: sds.uk@exxonmobil.com

1.4. EMERGENCY TELEPHONE NUMBER

24 Hour Emergency Telephone: (UK) (+44) (0) 1372 222 000
National Poison Control Centre: (UK) 111 / (IE) (+353)1 809 2166

SECTION 2 HAZARDS IDENTIFICATION

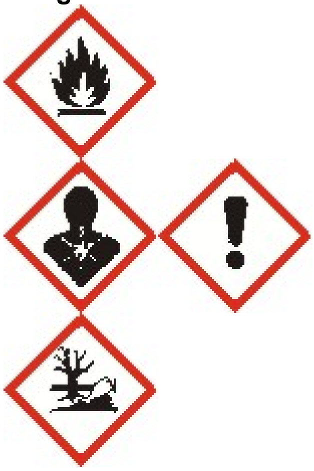
2.1. CLASSIFICATION OF SUBSTANCE OR MIXTURE

Classification according to Regulation (EC) No 1272/2008
Flammable liquid: Category 3.
Acute inhalation toxicant: Category 4. Skin irritation: Category 2. Carcinogen: Category 2. Specific target organ toxicant (repeated exposure): Category 2. Aspiration toxicant: Category 1.
Chronic aquatic toxicant: Category 2.
H226: Flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H332: Harmful if inhaled.
H351: Suspected of causing cancer. H373: May cause damage to organs through prolonged or repeated exposure. Bone marrow, Liver, Thymus
H411: Toxic to aquatic life with long lasting effects.

2.2. LABEL ELEMENTS

Label elements according to Regulation (EC) No 1272/2008

Pictograms:



Signal Word: Danger

Hazard Statements:

H226: Flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H332: Harmful if inhaled.
H351: Suspected of causing cancer. H373: May cause damage to organs through prolonged or repeated exposure. Bone marrow, Liver, Thymus
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233: Keep container tightly closed. P240: Ground and bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating and lighting equipment. P242: Use non-sparking tools. P243: Take action to prevent static discharges. P260: Do not breathe mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308 + P313: IF exposed or concerned: Get medical advice/attention. P314: Get medical advice/attention if you feel unwell. P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect spillage.
P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up.
P501: Dispose of contents and container in accordance with local regulations.

Contains: Fuels, diesel

2.3. OTHER HAZARDS

Physical / Chemical Hazards:

Material can accumulate static charges which may cause an ignition. Material can release vapours that readily form flammable mixtures. Vapour accumulation could flash and/or explode if ignited.

Health Hazards:

May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Under conditions of poor personal hygiene and prolonged repeated contact, some polycyclic aromatic compounds (PACs) have been suspected as a cause of skin cancer in humans. May be irritating to the eyes, nose, throat, and lungs.

Environmental Hazards:

No additional hazards. Material does not meet the criteria for PBT or vPvB in accordance with REACH Annex XIII.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1. SUBSTANCES Not Applicable. This material is regulated as a mixture.

3.2. MIXTURES

This material is defined as a mixture.

Reportable hazardous substance(s) complying with the classification criteria and/or with an exposure limit (OEL)

Name	CAS#	EC#	Registration#	Concentration *	GHS/CLP classification
Fuels, diesel	68334-30-5	269-822-7	01-2119484664-27	> 92 %	[Aquatic Acute 2 H401], Aquatic Chronic 2 H411, Acute Tox. 4 H332, Asp. Tox. 1 H304, Carc. 2 H351, Flam. Liq. 3 H226, Skin Irrit. 2 H315, STOT RE 2 H373, Note N

Note - any classification in brackets is a GHS building block that was not adopted by the EU in the CLP regulation (No 1272/2008) and therefore is not applicable in the EU or in non-EU countries which have implemented the CLP regulation and is shown for informational purposes only.

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

NOTE: Composition may contain up to 0.5% performance additives and / or dyes.

Note: See SDS Section 16 for full text of hazard statements.

SECTION 4 FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

INHALATION

Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

SKIN CONTACT

Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Headache, dizziness, drowsiness, nausea and other CNS effects. Itching, pain, redness, swelling of skin. Local necrosis as evidenced by delayed onset of pain and tissue damage a few hours after injection.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. Contains hydrocarbon solvent/petroleum hydrocarbons; skin contact may aggravate an existing dermatitis.

SECTION 5 FIRE FIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

Suitable Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Unsuitable Extinguishing Media: Straight streams of water

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

5.3. ADVICE FOR FIRE FIGHTERS

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

FLAMMABILITY PROPERTIES

Flash Point [Method]: >56°C (133°F) [ASTM D-93]
Upper/Lower Flammable Limits (Approximate volume % in air): UEL: 7.0 LEL: 0.6 [test method unavailable]
Autoignition Temperature: >250°C (482°F) [test method unavailable]

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

6.2. ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapour-suppressing foam may be used to reduce vapour. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces.

Water Spill: Stop leak if you can do so without risk. Eliminate sources of ignition. Warn other shipping. If the Flash Point exceeds the Ambient Temperature by 10 deg C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

6.4. REFERENCES TO OTHER SECTIONS

See Sections 8 and 13.

SECTION 7 HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Avoid all personal contact. Do not siphon by mouth. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put petrol into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapour and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) during safety critical tasks, such as bulk fuel loading or unloading operations, or in storage areas where vapours may be present, unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

The type of container used to store the material may affect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be earthed and bonded. Fixed storage containers, transfer containers and associated equipment should be earthed and bonded to prevent accumulation of static charge. Keep away from incompatible materials.

7.3. SPECIFIC END USES

Section 1 informs about identified end-uses. No industrial or sector specific guidance available.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source
Fuels, diesel	Stable Aerosol.	TWA	5 mg/m3		Skin	ExxonMobil
Fuels, diesel	Vapour.	TWA	200 mg/m3		Skin	ExxonMobil
Fuels, diesel [total hydrocarb, vapor&aerosol]	Inhalable fraction and vapour	TWA	100 mg/m3		Skin	ACGIH

Note: Information about recommended monitoring procedures can be obtained from the relevant agency(ies)/institute(s):

UK	Health and Safety Executive (HSE)

DERIVED NO EFFECT LEVEL (DNEL)/DERIVED MINIMAL EFFECT LEVEL (DMEL)

Worker

Substance Name	Dermal	Inhalation
Fuels, diesel	2.9 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	68 mg/m3 DNEL, Chronic Exposure, Systemic Effects

Consumer

Substance Name	Dermal	Inhalation	Oral
Fuels, diesel	1.3 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	20 mg/m3 DNEL, Chronic Exposure, Systemic Effects	NA

Note: The Derived No Effect Level (DNEL) is an estimated safe level of exposure that is derived from toxicity data in accord with specific guidance within the European REACH regulation. The DNEL may differ from an Occupational Exposure Limit (OEL) for the same chemical. OELs may be recommended by an individual company, a governmental regulatory body or an expert organization, such as the Scientific Committee for Occupational Exposure Limits (SCOEL) or the American Conference of Governmental Industrial Hygienists (ACGIH). OELs are considered to be safe exposure levels for a typical worker in an occupational setting for an 8-hour work shift, 40 hour work week, as a time weighted average (TWA) or a 15 minute short-term exposure limit (STEL). While also considered to be protective of health, OELs are derived by a process different from that of REACH.

PREDICTED NO EFFECT CONCENTRATION (PNEC)

Substance Name	Aqua (fresh water)	Aqua (marine water)	Aqua (intermittent release)	Sewage treatment plant	Sediment	Soil	Oral (secondary poisoning)
Fuels, diesel	NA	NA	NA	NA	NA	NA	NA

For hydrocarbon UVCBs, no single PNEC value is identified for the overall substance or used in risk assessment calculations. Therefore, no PNEC values are disclosed in the above table. For further information, please contact ExxonMobil.

8.2. EXPOSURE CONTROLS

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator Type AP filter material., European Committee for Standardization (CEN) standards EN 136, 140 and 405 provide respirator masks and EN 149 and 143 provide filter recommendations.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves. Nitrile, minimum 0.38 mm thickness or comparable protective barrier material with a high performance level for continuous contact use conditions, permeation breakthrough minimum 480 minutes in accordance with CEN standards EN 420 and EN 374.

Eye Protection: If contact with material is likely, chemical goggles are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

For Summary of Risk Management Measures across all identified uses, see Annex.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Colour: Light Coloured

Odour: Petroleum/Solvent
Odour Threshold: No data available
pH: Not technically feasible
Melting Point: No data available
Freezing Point: No data available
Initial Boiling Point / and Boiling Range: > 180°C (356°F) [test method unavailable]
Flash Point [Method]: >56°C (133°F) [ASTM D-93]
Evaporation Rate (n-butyl acetate = 1): No data available
Flammability (Solid, Gas): Not technically feasible
Upper/Lower Flammable Limits (Approximate volume % in air): UEL: 7.0 LEL: 0.6 [test method unavailable]
Vapour Pressure: < 0.04 kPa (0.3 mm Hg) at 20 °C [test method unavailable]
Vapour Density (Air = 1): No data available
Relative Density (at 15 °C): 0.82 - 0.845 [EN ISO 3675]
Solubility(ies): water Negligible
Partition coefficient (n-Octanol/Water Partition Coefficient): > 3.5 [test method unavailable]
Autoignition Temperature: >250°C (482°F) [test method unavailable]
Decomposition Temperature: No data available
Viscosity: 2 cSt (2 mm2/sec) at 40ºC - 4 cSt (4 mm2/sec) at 40ºC [test method unavailable]
Explosive Properties: None
Oxidizing Properties: None

9.2. OTHER INFORMATION

Density (at 15 ºC): 820 kg/m3 (6.84 lbs/gal, 0.82 kg/dm3) - 845 kg/m3 (7.05 lbs/gal, 0.85 kg/dm3) [EN ISO 3675]

SECTION 10 STABILITY AND REACTIVITY

10.1. REACTIVITY: See sub-sections below.

10.2. CHEMICAL STABILITY: Material is stable under normal conditions.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

10.4. CONDITIONS TO AVOID: Open flames and high energy ignition sources.

10.5. INCOMPATIBLE MATERIALS: Halogens, Strong Acids, Strong Bases, Strong oxidisers

10.6. HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: (Rat) 4 hour(s) LC50 >	Moderately toxic. Based on test data for structurally similar

4000 mg/m3 (Vapor and aerosol)	materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
Ingestion	
Acute Toxicity (Rat): LD50 > 5000 mg/kg Test scores or other study results do not meet criteria for classification.	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
Skin	
Acute Toxicity (Rabbit): LD50 > 5000 mg/kg Test scores or other study results do not meet criteria for classification.	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 434
Skin Corrosion/Irritation (Rabbit): Data available. Test scores or other study results meet criteria for classification.	Irritating to the skin. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation (Rabbit): Data available. Test scores or other study results do not meet criteria for classification.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available. Test scores or other study results do not meet criteria for classification.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: Data available. Test scores or other study results do not meet criteria for classification.	Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475
Carcinogenicity: Data available.	Caused cancer in laboratory animals, but the relevance to humans is uncertain. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: Data available.	Concentrated, prolonged or deliberate exposure may cause organ damage. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 413

OTHER INFORMATION

For the product itself:

Target Organs Repeated Exposure: Bone marrow, Liver, Thymus

Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Diesel fuel: Carcinogenic in animal tests. Caused mutations in-vitro. Repeated dermal exposures to high concentrations in test animals resulted in reduced litter size and litter weight, and increased fetal resorptions at maternally toxic doses. Dermal exposure to high concentrations resulted in severe skin irritation with weight loss and some mortality. Inhalation exposure to high concentrations resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and reduction in lung function. Diesel exhaust fumes: Carcinogenic in animal tests. Inhalation exposures to exhaust for 2 years in test animals resulted in lung tumours and lymphoma. Extract of particulate produced skin tumours in test animals. Caused mutations in-vitro.

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

12.1. TOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

12.2. PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

Atmospheric Oxidation:

Majority of components -- Expected to degrade rapidly in air

12.3. BIOACCUMULATIVE POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

12.4. MOBILITY IN SOIL

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

Majority of components -- Low potential to migrate through soil.

12.5. PERSISTENCE, BIOACCUMULATION AND TOXICITY FOR SUBSTANCE(S)

Material does not meet the Reach Annex XIII criteria for PBT or vPvB.

12.6. OTHER ADVERSE EFFECTS

No adverse effects are expected.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL50 1 - 1000 mg/l: data for similar materials

Aquatic - Acute Toxicity	96 hour(s)	Fish	LL50 1 - 100 mg/l: data for similar materials
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	EL50 1 - 100 mg/l: data for similar materials
Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOELR 1 - 10 mg/l: data for similar materials

Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results: Basis
Water	Ready Biodegradability	28 day(s)	Percent Degraded < 60 : similar material

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

13.1. WASTE TREATMENT METHODS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

European Waste Code: 13 07 01*

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

This material is considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (ADR/RID)

14.1. UN Number: 1202
14.2. UN Proper Shipping Name (Technical Name): DIESEL FUEL, GAS OIL OR HEATING OIL, LIGHT
14.3. Transport Hazard Class(es): 3
14.4. Packing Group: III

14.5. Environmental Hazards: Yes
14.6. Special Precautions for users:
Proper Shipping Name Suffix: Special Provision 640L
Classification Code: F1
Label(s) / Mark(s): 3, EHS
Hazard ID Number: 30
Hazchem EAC: 3Y

INLAND WATERWAYS (ADN)
14.1. UN (or ID) Number: 1202
14.2. UN Proper Shipping Name (Technical Name): DIESEL FUEL, GAS OIL OR HEATING OIL, LIGHT
14.3. Transport Hazard Class(es): 3
14.4. Packing Group: III
14.5. Environmental Hazards: Yes
14.6. Special Precautions for users:
Hazard ID Number: 30
Label(s) / Mark(s): 3 (N2, F), EHS

SEA (IMDG)
14.1. UN Number: 1202
14.2. UN Proper Shipping Name (Technical Name): DIESEL FUEL, GAS OIL OR HEATING OIL, LIGHT
14.3. Transport Hazard Class(es): 3
14.4. Packing Group: III
14.5. Environmental Hazards: Marine Pollutant
14.6. Special Precautions for users:
Label(s): 3
EMS Number: F-E, S-E
Transport Document Name: UN1202, DIESEL FUEL, GAS OIL OR HEATING OIL, LIGHT, 3, PG III, (56°C c.c.), MARINE POLLUTANT

SEA (MARPOL 73/78 Convention - Annex II):
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not classified according to Annex II

AIR (IATA)
14.1. UN Number: 1202
14.2. UN Proper Shipping Name (Technical Name): DIESEL FUEL, GAS OIL OR HEATING OIL, LIGHT
14.3. Transport Hazard Class(es): 3
14.4. Packing Group: III
14.5. Environmental Hazards: Yes
14.6. Special Precautions for users:
Label(s) / Mark(s): 3
Transport Document Name: UN1202, DIESEL FUEL, GAS OIL OR HEATING OIL, LIGHT, 3, PG III

SECTION 15 REGULATORY INFORMATION

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories (May contain substance(s) subject to notification to the EPA Active TSCA inventory prior to import to USA): AICS, DSL, IECSC, KECI, PICCS, TCSI, TSCA

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

Applicable EU Directives and Regulations:

1907/2006 [... on the Registration, Evaluation, Authorisation and Restriction of Chemicals ... and amendments thereto]
92/85/EEC [...pregnant workers...recently given birth or...breastfeeding directive]
94/33/EC [...on the protection of young people at work]
96/82/EC as extended by 2003/105/EC [... on the control of major-accident hazards involving dangerous substances]. Product contains a substance that falls within the criteria defined in Annex I. Refer to Directive for details of requirements taking into account the volume of product stored on site.
98/24/EC [... on the protection of workers from the risk related to chemical agents at work ...]. Refer to Directive for details of requirements.
1272/2008 [on classification, labelling and packaging of substances and mixtures.. and amendments thereto]

15.2. CHEMICAL SAFETY ASSESSMENT

REACH Information: A Chemical Safety Assessment has been carried out for one or more substances present in the material.

SECTION 16 OTHER INFORMATION

IDENTIFIED USES:
Manufacture of substance (PROC1, PROC15, PROC2, PROC3, PROC4, PROC8a, PROC8b, SU10, SU3, SU8, SU9)
Distribution of substance (PROC1, PROC15, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, SU3, SU8, SU9)
Use as an intermediate (PROC1, PROC15, PROC2, PROC3, PROC4, PROC8a, PROC8b, SU3, SU8, SU9)
Formulation and (re)packing of substances and mixtures (PROC1, PROC14, PROC15, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, SU10, SU3)
Lubricants - Industrial (PROC1, PROC10, PROC13, PROC17, PROC18, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, SU3)
Use as a fuel - Industrial (PROC1, PROC16, PROC2, PROC3, PROC8a, PROC8b, SU3)
Functional Fluids - Industrial (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, SU3)
Use as a fuel - Professional (PROC1, PROC16, PROC2, PROC3, PROC8a, PROC8b, SU22)
Use as a fuel - Consumer (PC13, SU21)

REFERENCES: Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, CONCAWE Product Dossiers, publications from other trade associations,

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such as the EU Hydrocarbon Solvents REACH Consortium, U.S. HPV Program Robust Summaries, the EU IUCLID Data Base, U.S. NTP publications, and other sources, as appropriate.

List of abbreviations and acronyms that could be (but not necessarily are) used in this safety data sheet:

Acronym	Full text
N/A	Not applicable
N/D	Not determined
NE	Not established
VOC	Volatile Organic Compound
AICS	Australian Inventory of Chemical Substances
AIHA WEEL	American Industrial Hygiene Association Workplace Environmental Exposure Limits
ASTM	ASTM International, originally known as the American Society for Testing and Materials (ASTM)
DSL	Domestic Substance List (Canada)
EINECS	European Inventory of Existing Commercial Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and new Chemical Substances (Japanese inventory)
IECSC	Inventory of Existing Chemical Substances in China
KECI	Korean Existing Chemicals Inventory
NDSL	Non-Domestic Substances List (Canada)
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
TLV	Threshold Limit Value (American Conference of Governmental Industrial Hygienists)
TSCA	Toxic Substances Control Act (U.S. inventory)
UVCB	Substances of Unknown or Variable composition, Complex reaction products or Biological materials
LC	Lethal Concentration
LD	Lethal Dose
LL	Lethal Loading
EC	Effective Concentration
EL	Effective Loading
NOEC	No Observable Effect Concentration
NOELR	No Observable Effect Loading Rate

Classification according to Regulation (EC) No 1272/2008

Classification according to Regulation (EC) No 1272/2008	Classification procedure
Aquatic Chronic 2; H411	Calculation
Carc. 2; H351	Bridging, structurally similar materials
Flam. Liq. 3; H226	Based on test data
Skin Irrit. 2; H315	Bridging, structurally similar materials
STOT RE 2; H373	Bridging, structurally similar materials

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

Flam. Liq. 3 H226: Flammable liquid and vapor; Flammable Liquid, Cat 3
Asp. Tox. 1 H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
Skin Irrit. 2 H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
Acute Tox. 4 H332: Harmful if inhaled; Acute Tox Inh, Cat 4
Carc. 2 H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2
STOT RE 2 H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
[Aquatic Acute 2 H401]: Toxic to aquatic life; Acute Env Tox, Cat 2
Aquatic Chronic 2 H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Distribution of substance: Annex Information information was modified.
Formulation and (re)packing of substances and mixtures: Annex Information information was modified.
Functional Fluids - Industrial: Annex Information information was modified.
Lubricants - Industrial: Annex Information information was modified.
Manufacture of substance: Annex Information information was modified.
Section 01: Company Contact Methods information was modified.
Section 01: Company Emergency Contact information was modified.
Section 06: Accidental Release - Spill Management - Land information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 12: PBT/vPvB information was modified.
Section 12: information was modified.
Use as a fuel - Industrial: Annex Information information was modified.
Use as a fuel - Professional: Annex Information information was modified.
Use as an intermediate: Annex Information information was modified.

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ANNEX

Section 1 Exposure Scenario Title	
Title:	
Manufacture of substance	
Use Descriptor	
Sector(s) of Use	SU10, SU3, SU8, SU9
Process Categories	PROC1, PROC15, PROC2, PROC3, PROC4, PROC8a, PROC8b
Environmental Release Categories	ERC1

Specific Environmental Release Category	ESVOC 1.1.v1

Processes, tasks, activities covered

Manufacture of the substance or use as an intermediate, process chemical or extracting agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (ncluding marine vessel/barge, road/rail car and bulk container).

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product Characteristic

Liquid

Duration, frequency and amount

Covers daily exposures up to 8 hours (unless stated differently)[G2]
Covers percentage substance in the product up to 100 %[G13]

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]
Operation is carried out at elevated temperature (>20 C above ambient temperature)[OC7]

Contributing Scenarios/
Specific Risk Management Measures and Operating Conditions
(only required controls to demonstrate safe use listed)

General measures applicable to all activities
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (Aspiration Hazard)
The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.
Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting.

General measures (Flammable Liquid)
Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the recast ATEX Directive 2014/34/EU. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.
Use in contained systems. Avoid ignition sources – No Smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Comply with relevant EU/national regulations. Review SDS for additional advice.

General measures (skin irritants)
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

General exposures (closed systems) PROC1
No specific measures identified.

General exposures (closed systems) PROC2
Handle substance within a closed system.

General exposures (closed systems) PROC3
Handle substance within a closed system.
General exposures (open systems) PROC4
Wear suitable gloves tested to EN374.
Process sampling PROC3
No other specific measures identified.
Laboratory activities PROC15
No other specific measures identified.
Bulk transfers (closed systems) PROC8b
Handle substance within a closed system.
Wear suitable gloves tested to EN374.
Bulk transfers (open systems) PROC8b
Wear suitable gloves tested to EN374.
Equipment cleaning and maintenance PROC8a
Drain down system prior to equipment break-in or maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Bulk product storage PROC1
Store substance within a closed system.
Bulk product storage PROC2
Store substance within a closed system.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.
Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 600000 tons/yr
Continuous release.
Emission Days (days/year): 300 days/yr
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used Locally: 0.022
Maximum daily site tonnage (kg/d): 2000000 kg / day
Regional use tonnage (tonnes/year): 27000000 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10
Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.01
Release fraction to soil from process (initial release prior to RMM): 0.0001
Release fraction to wastewater from process (initial release prior to RMM): 0.0000025

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of =: >= 0 %
Risk from environmental exposure is driven by freshwater sediment.
Treat air emissions to provide a typical removal (or abatement?) efficiency of: 90 %
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal (or abatement) efficiency of =: >= 90.3 %

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.

Prevent discharge of undissolved substance to or recover from wastewater.
Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 10000 m3/day
Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %
The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 3600000 kg / day
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is: 94.5 %

Conditions and measures related to external treatment of waste for disposal

During manufacturing no waste of the substance is generated [ETW4]

Conditions and measures related to external recovery of waste

During manufacturing no waste of the substance is generated [ERW2]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. [G32]
Available hazard data do not support the need for a DNEL to be established for other health effects.[G36]
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]
Risk Management Measures are based on qualitative risk characterisation. [G37]
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]

4.2. Environment

Further details on scaling and control technologies are provided in factsheet
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
If scaling reveals a condition of unsafe use (i.e. RCRs >1), additional RMMs or a site-specific chemical safety assessment is required.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file - 'Site-Specific Production' worksheet. [DSU6]

Section 1 Exposure Scenario Title

Title:

Distribution of substance

Use Descriptor

Sector(s) of Use	SU3, SU8, SU9
Process Categories	PROC1, PROC15, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9
Environmental Release Categories	ERC4, ERC5, ERC6A, ERC6B, ERC6C, ERC6D, ERC7
Specific Environmental Release Category	ESVOC 1.1b.v1

Processes, tasks, activities covered

Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, distribution and associated laboratory activities.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product Characteristic

Liquid

Duration, frequency and amount

Covers daily exposures up to 8 hours (unless stated differently)[G2]
Covers percentage substance in the product up to 100 %[G13]

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]
Assumes use at not more than 20°C above ambient temperature[G15]

Contributing Scenarios/
Specific Risk Management Measures and Operating Conditions
(only required controls to demonstrate safe use listed)

General measures (Aspiration Hazard)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.
Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting.

General measures (Flammable Liquid)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the recast ATEX Directive 2014/34/EU. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.
Use in contained systems. Avoid ignition sources – No Smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Comply with relevant EU/national regulations. Review SDS for additional advice.

General measures applicable to all activities

Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

General exposures (closed systems) PROC1
No specific measures identified.

General exposures (closed systems) PROC2
Handle substance within a closed system.

General exposures (closed systems) PROC3
Handle substance within a closed system.

General exposures (open systems) PROC4
Wear suitable gloves tested to EN374.

Process sampling PROC3
No specific measures identified.

Laboratory activities PROC15
No specific measures identified.

Bulk transfers (closed systems) PROC8b
Handle substance within a closed system.
Wear suitable gloves tested to EN374.

Bulk transfers (open systems) PROC8b
Wear suitable gloves tested to EN374.

Drum and small package filling PROC9
Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance PROC8a
Drain down system prior to equipment break-in or maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Storage PROC1
Handle substance within a closed system.

Storage PROC2
Handle substance within a closed system.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.
Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 67000 tons/yr
Continuous release.
Emission Days (days/year): 300 days/yr
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used Locally: 0.002
Maximum daily site tonnage (kg/d): 220000 kg / day
Regional use tonnage (tonnes/year): 34000000 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10
Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.001
Release fraction to soil from process (initial release prior to RMM): 0.00001
Release fraction to wastewater from process (initial release prior to RMM): 0.000001

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of =:
0 %
No secondary wastewater treatment required.
Risk from environmental exposure is driven by freshwater sediment.
Treat air emissions to provide a typical removal (or abatement?) efficiency of: 90 %
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal (or abatement) efficiency of =: 75.3 %

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.
Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day
Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %
The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 1000000 kg / day
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is: 94.5 %

Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. [G32]
Available hazard data do not support the need for a DNEL to be established for other health effects.[G36]
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]
Risk Management Measures are based on qualitative risk characterisation. [G37]
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]

4.2. Environment

Further details on scaling and control technologies are provided in factsheet
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Section 1 Exposure Scenario Title	
Title:	
Use as an intermediate	
Use Descriptor	
Sector(s) of Use	SU3, SU8, SU9
Process Categories	PROC1, PROC15, PROC2, PROC3, PROC4, PROC8a, PROC8b
Environmental Release Categories	ERC6A
Specific Environmental Release Category	ESVOC 6.1a.v1
Processes, tasks, activities covered	
Use as an intermediate (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (ncluding marine vessel/barge, road/rail car and bulk container).	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
Product Characteristic	
Liquid	
Duration, frequency and amount	
Covers daily exposures up to 8 hours (unless stated differently)[G2] Covers percentage substance in the product up to 100 %[G13]	
Other given operational conditions affecting workers exposure	
Assumes a good basic standard of occupational hygiene is implemented [G1] Operation is carried out at elevated temperature (>20 C above ambient temperature)[OC7]	
Contributing Scenarios/ Specific Risk Management Measures and Operating Conditions (only required controls to demonstrate safe use listed)	
General measures (Aspiration Hazard) The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting. **General measures applicable to all activities** Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. **General measures (Flammable Liquid)** Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the recast ATEX Directive 2014/34/EU. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level. Use in contained systems. Avoid ignition sources – No Smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Comply with relevant EU/national regulations. Review SDS for additional advice.	

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

General exposures (closed systems) PROC1

No specific measures identified.

General exposures (closed systems) PROC2

Handle substance within a closed system.

General exposures (closed systems) PROC3

Handle substance within a closed system.

General exposures (open systems) PROC4

Wear suitable gloves tested to EN374.

Process sampling PROC3

No specific measures identified.

Laboratory activities PROC15

No specific measures identified.

Bulk transfers (open systems) PROC8b

Wear suitable gloves tested to EN374.

Bulk transfers (closed systems) PROC8b

Handle substance within a closed system.
Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance PROC8a

Drain down system prior to equipment break-in or maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Bulk product storage PROC1

Store substance within a closed system.

Bulk product storage PROC2

Store substance within a closed system.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.
Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 15000 tons/yr
Continuous release.
Emission Days (days/year): 300 days/yr
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used Locally: 0.0091
Maximum daily site tonnage (kg/d): 50000 kg / day
Regional use tonnage (tonnes/year): 1700000 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10
Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.001
Release fraction to soil from process (initial release prior to RMM): 0.001
Release fraction to wastewater from process (initial release prior to RMM): 0.00003

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of =: 0 %
Risk from environmental exposure is driven by freshwater sediment.
Treat air emissions to provide a typical removal (or abatement?) efficiency of: 80 %
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal (or abatement) efficiency of =: 93 %

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.
Prevent discharge of undissolved substance to or recover from wastewater.
Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day
Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %
Not applicable as there is no release to wastewater.
The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 64000 kg / day
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is: 94.5 %

Conditions and measures related to external treatment of waste for disposal

This substance is consumed during use and no waste of the substance is generated [ETW5]

Conditions and measures related to external recovery of waste

This substance is consumed during use and no waste of the substance is generated [ERW3]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. [G32]
Available hazard data do not support the need for a DNEL to be established for other health effects.[G36]
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]
Risk Management Measures are based on qualitative risk characterisation. [G37]
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]

4.2. Environment

Further details on scaling and control technologies are provided in factsheet
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Section 1 Exposure Scenario Title

Title:

Formulation and (re)packing of substances and mixtures

Use Descriptor

Sector(s) of Use	SU10, SU3
Process Categories	PROC1, PROC14, PROC15, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9
Environmental Release Categories	ERC2
Specific Environmental Release Category	ESVOC 2.2.v1

Processes, tasks, activities covered

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product Characteristic

Liquid

Duration, frequency and amount

Covers daily exposures up to 8 hours (unless stated differently)[G2]
Covers percentage substance in the product up to 100 %[G13]

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]
Assumes use at not more than 20°C above ambient temperature[G15]

Contributing Scenarios/
Specific Risk Management Measures and Operating Conditions
(only required controls to demonstrate safe use listed)

General measures (Aspiration Hazard)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.
Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting.

General measures (Flammable Liquid)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the recast ATEX Directive 2014/34/EU. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.
Use in contained systems. Avoid ignition sources – No Smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Comply with relevant EU/national regulations. Review SDS for additional advice.

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

General measures applicable to all activities

Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General exposures (closed systems) PROC1
No specific measures identified.
General exposures (closed systems) PROC2
Handle substance within a closed system.
General exposures (closed systems) PROC3
Handle substance within a closed system.
General exposures (open systems) PROC4
Wear suitable gloves tested to EN374.
Process sampling PROC3
No specific measures identified.
Laboratory activities PROC15
No specific measures identified.
Bulk transfers PROC8b
Use drum pumps or carefully pour from container.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Mixing operations (open systems) PROC5
Provide extract ventilation to points where emissions occur.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Drum/batch transfers PROC8b
Wear suitable gloves tested to EN374.
Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC14
Wear suitable gloves tested to EN374.
Drum and small package filling PROC9
Wear suitable gloves tested to EN374.
Equipment cleaning and maintenance PROC8a
Drain down system prior to equipment break-in or maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Storage PROC1
Store substance within a closed system.
Storage PROC2
Store substance within a closed system.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.
Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 30000 tons/yr
Continuous release.
Emission Days (days/year): 300 days/yr
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used Locally: 0.00094
Maximum daily site tonnage (kg/d): 100000 kg / day
Regional use tonnage (tonnes/year): 32000000 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10
Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): [OOC11] 0.01
Release fraction to soil from process (initial release prior to RMM): 0.0001
Release fraction to wastewater from process (initial release prior to RMM): 0.000018

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of =: >= 0 %
Risk from environmental exposure is driven by freshwater sediment.
Treat air emissions to provide a typical removal (or abatement?) efficiency of: 0 %
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal (or abatement) efficiency of =: >= 94 %

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.
Prevent discharge of undissolved substance to or recover from wastewater.
Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day
Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %
Not applicable as there is no release to wastewater.
The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 110000 kg / day
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is: 94.5 %

Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. [G32]
Available hazard data do not support the need for a DNEL to be established for other health effects.[G36]
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]
Risk Management Measures are based on qualitative risk characterisation. [G37]
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]

4.2. Environment

Further details on scaling and control technologies are provided in factsheet
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Section 1 Exposure Scenario Title

Title:

Lubricants - Industrial

Use Descriptor

Sector(s) of Use	SU3
Process Categories	PROC1, PROC10, PROC13, PROC17, PROC18, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9
Environmental Release Categories	ERC4, ERC7
Specific Environmental Release Category	ESVOC 4.6a.v1

Processes, tasks, activities covered

Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product Characteristic

Liquid

Duration, frequency and amount

Covers daily exposures up to 8 hours (unless stated differently)[G2]
Covers percentage substance in the product up to 100 %[G13]

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]
Assumes use at not more than 20°C above ambient temperature[G15]

Contributing Scenarios/
Specific Risk Management Measures and Operating Conditions
(only required controls to demonstrate safe use listed)

General measures applicable to all activities

Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (Aspiration Hazard)

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.
Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting.

General measures (Flammable Liquid)

Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the recast ATEX Directive 2014/34/EU. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.
Use in contained systems. Avoid ignition sources – No Smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Comply with relevant EU/national regulations. Review SDS for additional advice.

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

General exposures (closed systems) PROC1
Handle substance within a closed system.

General exposures (closed systems) PROC2
Handle substance within a closed system.

General exposures (closed systems) PROC3
Handle substance within a closed system.

General exposures (open systems) PROC4
Provide extract ventilation to points where emissions occur.

Bulk transfers PROC8b
Handle substance within a closed system.
Wear suitable gloves tested to EN374.

Filling / preparation of equipment from drums or containers PROC8a
Wear suitable gloves tested to EN374.

Filling / preparation of equipment from drums or containers PROC8b
Wear suitable gloves tested to EN374.

Initial factory fill of equipment PROC9
Wear suitable gloves tested to EN374.

Operation and lubrication of high energy open equipment PROC17
Provide extract ventilation to points where emissions occur.
Restrict area of openings to equipment.

Operation and lubrication of high energy open equipment PROC18
Provide extract ventilation to points where emissions occur.
Restrict area of openings to equipment.

Roller application or brushing PROC10
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

Treatment by dipping and pouring PROC13
Wear suitable gloves tested to EN374.

Spraying PROC7
Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
Wear suitable gloves (tested to EN374), coverall and eye protection.

Maintenance (of larger plant items) and machine set up PROC8b
Wear suitable gloves tested to EN374.

Maintenance (of larger plant items) and machine set up Operation is carried out at elevated temperature (> 20°C above ambient temperature). PROC8b
Ensure material transfers are under containment or extract ventilation.
Provide extract ventilation to emission points when contact with warm (> 50°C) lubricant is likely.
Wear suitable gloves tested to EN374.

Maintenance of small items PROC8a
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Remanufacture of reject articles PROC9
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Storage PROC1
Store substance within a closed system.

Storage PROC2
Store substance within a closed system.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.
Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 100 tons/yr
Continuous release.
Emission Days (days/year): 20 days/yr
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used Locally: 0.028
Maximum daily site tonnage (kg/d): 5000 kg / day
Regional use tonnage (tonnes/year): 3500 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10
Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.005
Release fraction to soil from process (initial release prior to RMM): 0.001
Release fraction to wastewater from process (initial release prior to RMM): 0.000003

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of =: >= 0 %
Risk from environmental exposure is driven by freshwater sediment.
Treat air emissions to provide a typical removal (or abatement?) efficiency of: 70 %
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal (or abatement) efficiency of =: >= 57.9 %

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.
Prevent discharge of undissolved substance to or recover from wastewater.
Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day
Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %
Not applicable as there is no release to wastewater.
The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 39000 kg / day
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is: 94.5 %

Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. [G32]

Available hazard data do not support the need for a DNEL to be established for other health effects.[G36]
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]
Risk Management Measures are based on qualitative risk characterisation. [G37]
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]

4.2. Environment

Further details on scaling and control technologies are provided in factsheet
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Section 1 Exposure Scenario Title

Title:

Use as a fuel - Industrial

Use Descriptor

Sector(s) of Use	SU3
Process Categories	PROC1, PROC16, PROC2, PROC3, PROC8a, PROC8b
Environmental Release Categories	ERC7
Specific Environmental Release Category	ESVOC 7.12a.v1

Processes, tasks, activities covered

Covers the use as a fuel (or fuel additive), and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product Characteristic

Liquid

Duration, frequency and amount

Covers daily exposures up to 8 hours (unless stated differently)[G2]
Covers percentage substance in the product up to 100 %[G13]

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]
Assumes use at not more than 20°C above ambient temperature[G15]

Contributing Scenarios/
Specific Risk Management Measures and Operating Conditions
(only required controls to demonstrate safe use listed)

General measures applicable to all activities
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (Aspiration Hazard)
The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.
Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting.

General measures (Flammable Liquid)
Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the recast ATEX Directive 2014/34/EU. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.
Use in contained systems. Avoid ignition sources – No Smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Comply with relevant EU/national regulations. Review SDS for additional advice.

General measures (skin irritants)
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if

hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Bulk transfers PROC8b

Wear suitable gloves tested to EN374.

Drum/batch transfers PROC8b

Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance PROC8a

Drain down system prior to equipment break-in or maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Vessel and container cleaning PROC8a

Apply vessel entry procedures including use of supplied compressed air.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Storage PROC1

Store substance within a closed system.

Storage PROC2

Store substance within a closed system.

Use as a fuel PROC1

No specific measures identified.

Use as a fuel PROC2

No specific measures identified.

Use as a fuel (closed systems) PROC16

No specific measures identified.

Use as a fuel (closed systems) PROC3

No specific measures identified.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.
Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 1500000 tons/yr
Continuous release.
Emission Days (days/year): 300 days/yr
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used Locally: 0.35
Maximum daily site tonnage (kg/d): 5000000 kg / day
Regional use tonnage (tonnes/year): 4300000 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10
Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.005
Release fraction to soil from process (initial release prior to RMM): 0
Release fraction to wastewater from process (initial release prior to RMM): 0.00001

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of =: >= 0 %
Risk from environmental exposure is driven by freshwater sediment.

Treat air emissions to provide a typical removal (or abatement?) efficiency of: 95 %
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal (or abatement) efficiency of =: >= 62.4 %

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.
Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day
Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %
Not applicable as there is no release to wastewater.
The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 34000000 kg / day
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is: 94.5 %

Conditions and measures related to external treatment of waste for disposal

Combustion emissions considered in regional exposure assessment [ETW2]
Combustion emissions limited by required exhaust emission controls [ETW1]
External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

Conditions and measures related to external recovery of waste

This substance is consumed during use and no waste of the substance is generated [ERW3]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. [G32]
Available hazard data do not support the need for a DNEL to be established for other health effects.[G36]
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]
Risk Management Measures are based on qualitative risk characterisation. [G37]
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]

4.2. Environment

Further details on scaling and control technologies are provided in factsheet
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Section 1 Exposure Scenario Title

Title:

Functional Fluids - Industrial

Use Descriptor

Sector(s) of Use	SU3
Process Categories	PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9
Environmental Release Categories	ERC7
Specific Environmental Release Category	ESVOC 7.13a.v1

Processes, tasks, activities covered

Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product Characteristic

Liquid

Duration, frequency and amount

Covers daily exposures up to 8 hours (unless stated differently)[G2]
Covers percentage substance in the product up to 100 %[G13]

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]
Assumes use at not more than 20°C above ambient temperature[G15]

**Contributing Scenarios/
Specific Risk Management Measures and Operating Conditions**
(only required controls to demonstrate safe use listed)

General measures applicable to all activities
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (Aspiration Hazard)
The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.
Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting.

General measures (Flammable Liquid)
Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the recast ATEX Directive 2014/34/EU. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.
Use in contained systems. Avoid ignition sources – No Smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Comply with relevant EU/national regulations. Review SDS for additional advice.

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Bulk transfers (closed systems) PROC1

No specific measures identified.

Bulk transfers (closed systems) PROC2

No specific measures identified.

Drum/batch transfers PROC8b

Wear suitable gloves tested to EN374.

Filling of articles/equipment (closed systems) PROC9

Transfer via enclosed lines

Filling / preparation of equipment from drums or containers PROC8a

Wear suitable gloves tested to EN374.

General exposures (closed systems) PROC2

Ensure operatives are trained to minimise exposures.

General exposures (open systems) PROC4

Wear suitable gloves tested to EN374.

General exposures (open systems) Operation is carried out at elevated temperature (> 20°C above ambient temperature). PROC4

Use dry break couplings for material transfer.

Remanufacture of reject articles PROC9

Wear suitable gloves tested to EN374.

Equipment maintenance PROC8a

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Storage PROC1

Store substance within a closed system.

Storage PROC2

Store substance within a closed system.

Bulk transfers (closed systems) PROC3

No specific measures identified.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.
Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 10 tons/yr
Continuous release.
Emission Days (days/year): 20 days/yr
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used Locally: 0.76
Maximum daily site tonnage (kg/d): 500 kg / day
Regional use tonnage (tonnes/year): 13 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10
Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.005
Release fraction to soil from process (initial release prior to RMM): 0.001
Release fraction to wastewater from process (initial release prior to RMM): 0.000003

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of =: >= 0 %
Risk from environmental exposure is driven by freshwater sediment.
Treat air emissions to provide a typical removal (or abatement?) efficiency of: 0 %
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal (or abatement) efficiency of =: >= 55.9 %

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.
Prevent discharge of undissolved substance to or recover from wastewater.
Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day
Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %
The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 4000 kg / day
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is: 94.5 %

Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. [G32]
Available hazard data do not support the need for a DNEL to be established for other health effects.[G36]
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]
Risk Management Measures are based on qualitative risk characterisation. [G37]
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]

4.2. Environment

Further details on scaling and control technologies are provided in factsheet
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Section 1 Exposure Scenario Title

Title:

Use as a fuel - Professional

Use Descriptor

Sector(s) of Use	SU22
Process Categories	PROC1, PROC16, PROC2, PROC3, PROC8a, PROC8b
Environmental Release Categories	ERC9A, ERC9B
Specific Environmental Release Category	ESVOC 9.12b.v1

Processes, tasks, activities covered

Covers the use as a fuel (or fuel additive), and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product Characteristic

Liquid

Duration, frequency and amount

Covers daily exposures up to 8 hours (unless stated differently)[G2]
Covers percentage substance in the product up to 100 %[G13]

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]
Assumes use at not more than 20°C above ambient temperature[G15]

**Contributing Scenarios/
Specific Risk Management Measures and Operating Conditions**
(only required controls to demonstrate safe use listed)

General measures applicable to all activities
Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (Aspiration Hazard)
The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard.
Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting.

General measures (Flammable Liquid)
Risks from the physicochemical hazards of substances, such as flammability or explosiveness can be controlled by implementing risk management measures at the workplace. It is recommended to follow the recast ATEX Directive 2014/34/EU. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, the risk can be regarded as controlled to an acceptable level.
Use in contained systems. Avoid ignition sources – No Smoking. Handle in well ventilated area to prevent formation of explosive atmosphere. Use equipment and protective systems approved for flammable substances. Restrict line velocity during pumping to avoid generation of electrostatic discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Comply with relevant EU/national regulations. Review SDS for additional advice.

General measures (skin irritants)
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if

hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Bulk transfers PROC8b
Wear suitable gloves tested to EN374.

Drum/batch transfers PROC8b
Use drum pumps or carefully pour from container.
Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance PROC8a
Drain down and flush system prior to equipment break-in or maintenance.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Vessel and container cleaning PROC8a
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Storage PROC1
Store substance within a closed system.

Use as a fuel (closed systems) PROC3
No specific measures identified.

Use as a fuel (closed systems) PROC16
provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
or
Ensure operation is undertaken outdoors.

refuelling PROC8b
Wear suitable gloves tested to EN374.

Use as a fuel PROC1
No specific measures identified.

Use as a fuel PROC2
No specific measures identified.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.
Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 3600 tons/yr
Continuous release.
Emission Days (days/year): 365 days/yr
Fraction of EU tonnage used in region: 0.1
Fraction of Regional tonnage used Locally: 0.0005
Maximum daily site tonnage (kg/d): 9900 kg / day
Regional use tonnage (tonnes/year): 7200000 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10
Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from wide dispersive use (regional only): 0.0001
Release fraction to soil from wide dispersive use (regional only): 0.00001
Release fraction to wastewater from wide dispersive use: 0.00001

Technical conditions and measures at process level (source) to prevent release

Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of =: >=

0 %
Risk from environmental exposure is driven by freshwater sediment.
Treat air emissions to provide a typical removal (or abatement?) efficiency of: Not Applicable
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal (or abatement) efficiency of =: >= 67.2 %

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.
Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day
Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %
The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 59000 kg / day
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is: 94.5 %

Conditions and measures related to external treatment of waste for disposal

Combustion emissions considered in regional exposure assessment [ETW2]
Combustion emissions limited by required exhaust emission controls [ETW1]
External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

Conditions and measures related to external recovery of waste

This substance is consumed during use and no waste of the substance is generated [ERW3]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. [G32]
Available hazard data do not support the need for a DNEL to be established for other health effects.[G36]
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]
Risk Management Measures are based on qualitative risk characterisation. [G37]
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]

4.2. Environment

Further details on scaling and control technologies are provided in factsheet
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Section 1 Exposure Scenario Title

Title:

Use as a fuel - Consumer

Use Descriptor

Sector(s) of Use	SU21
Product Categories	PC13
Environmental Release Categories	ERC9A, ERC9B
Specific Environmental Release Category	ESVOC 9.12c.v1

Processes, tasks, activities covered

Covers consumer uses in liquid fuels.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of consumer exposure

Product Characteristic

Liquid

Duration, frequency and amount

Not applicable

Other given operational conditions affecting consumer exposure

Not applicable

Contributing Scenarios/
Specific Risk Management Measures and Operating Conditions
(only required controls to demonstrate safe use listed)

General measures (Aspiration Hazard)
The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed then seek immediate medical attention. Do NOT induce vomiting. Just a sip of lamp oil - or even sucking the wick of lamps may lead to life threatening lung damage. Keep lamps filled with this liquid out of the reach of children.

General measures (Flammable Liquid)
Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For flammable substances a selection of the following measures need to be implemented to control unintended ignition of flammable substances. These measures are expected to be suitable to prevent minor accidents which might occur during consumer use. Based on the implementation of a selection of handling and storage risk management measures for the identified uses, it is anticipated that there is no immediate concern as the risk should be controlled to an acceptable level. Use only with adequate ventilation. Avoid ignition sources – No Smoking. Review SDS for additional advice.

Liquid: Automotive Refuelling PC13
Covers concentrations up to 100 %
Covers use up to 1 times per day
Covers use up to 52 days/yr
Covers skin contact area up to 210 cm2
For each use event, covers use amounts up to 37500 grams
Covers outdoor use. 0.6 Air changes per hour
Covers use in room size of 100 m^3
Covers exposure up to 0.05 hour(s)
Liquid, vapour pressure < 0,5 kPa at STP.

Liquid, Garden Equipment - Use PC13
Covers concentrations up to 100 %

Covers use up to 1 times per day

Covers use up to 26 days/yr

For each use event, covers use amounts up to 750 grams

Covers outdoor use. 0.6 Air changes per hour

Covers use in room size of 100 m³

Covers exposure up to 2 hour(s)

Liquid, vapour pressure < 0,5 kPa at STP.

Covers skin contact area up to 420 cm2

Liquid: Garden Equipment - Refueling PC13

Covers concentrations up to 100 %

Covers use up to 26 days/yr

Covers use up to 1 times per day

Covers skin contact area up to 420 cm2

For each use event, covers use amounts up to 750 grams

Covers use in a one car garage (34 m3) under typical ventilation. 1.5 Air changes per hour

Covers use in room size of 34 m³

Covers exposure up to 0.03 hour(s)

Liquid, vapour pressure < 0,5 kPa at STP.

Section 2.2 Control of environmental exposure

Product characteristics

Predominantly hydrophobic.

Substance is complex UVCB.

Duration, frequency and amount

Annual site tonnage (tonnes/year): 9700 tons/yr

Continuous release.

Emission Days (days/year): 365 days/yr

Fraction of EU tonnage used in region: 0.1

Fraction of Regional tonnage used Locally: 0.0005

Maximum daily site tonnage (kg/d): 27000 kg / day

Regional use tonnage (tonnes/year): 19000000 tons/yr

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10

Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Release fraction to air from wide dispersive use (regional only): 0.0001

Release fraction to soil from wide dispersive use (regional only): 0.00001

Release fraction to wastewater from wide dispersive use: 0.00001

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day

Estimated substance removal from wastewater via domestic sewage treatment is: 94.5 %

Not applicable as there is no release to wastewater.

The maximum allowable site tonnage (MSafe) based on domestic sewage plant effluent release is: 110000 kg / day

Conditions and measures related to external treatment of waste for disposal

Combustion emissions considered in regional exposure assessment [ETW2]

Combustion emissions limited by required exhaust emission controls [ETW1]

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

Conditions and measures related to external recovery of waste

This substance is consumed during use and no waste of the substance is generated [ERW3]

Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.[G30]

3.2. Environment
The Hydrocarbon Block Method has been used to calculate environmental exposrue with the Petrorisk model.[EE2]
Section 4 Guidance to check compliance with the Exposure Scenario
4.1. Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22] Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]
4.2. Environment
Further details on scaling and control technologies are provided in factsheet

SAFETY DATA SHEET

Hydrotreated Vegetable Oil

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name:	Hydrotreated Vegetable Oil
UK REACH registration number:	UK-01-9638319484-0-XXXX
Other means of identification:	EC No.: 618-882-6 CAS No.: 928771-01-1

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture:	None known. Restricted to professional users.
Uses advised against :	None known.

1.3. Details of the supplier of the safety data sheet

Company and address:	**Crown Oil Ltd** The Oil Centre Bury New Rd Bury BL9 7HY United Kingdom 03301231444 www.crownoil.co.uk
Contact person:	Crown Oil Ltd
E-mail:	technical@crownoil.co.uk
Revision:	15/11/2024
SDS Version:	1.0

1.4. Emergency telephone number

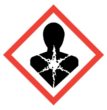
Healthcare professionals: Dial 0344 892 0111 to reach The National Poisons Information Service (NPIS) (24 hour service)
General public:
England - Dial 111 to reach NHS 111 (24 hour service)
Scotland - Dial 112 to reach NHS 24 (24 hour service)
Wales - Dial 111 or 0845 4647 to reach NHS Direct (24 hour service)
See section 4 “First aid measures”.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Asp. Tox. 1; H304, May be fatal if swallowed and enters airways.

2.2. Label elements

Hazard pictogram(s):	
Signal word:	Danger
Hazard statement(s):	May be fatal if swallowed and enters airways. (H304)
Precautionary statement(s):	
General:	-
Prevention:	-
Response:	IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310) Do NOT induce vomiting. (P331)
Storage:	-
Disposal:	Dispose of contents/container in accordance with local regulation (P501)
Hazardous substances:	Hydrotreated Vegetable Oil
Additional labelling:	EUH066, Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

Additional warnings:	This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification. This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2023/707.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Product/substance	**Identifiers**	**% w/w**	**Classification**	**Note**
Hydrotreated Vegetable Oil	CAS No.: 928771-01-1 EC No.: 618-882-6 UK-REACH: UK-01-9638319484-0-XXXX Index No.:	95-100%	Asp. Tox. 1, H304	

3.2. Mixtures

Not applicable. This product is a substance.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

-

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information:	In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.
Inhalation:	Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.
Skin contact:	Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners. If skin irritation occurs: Get medical advice/attention.
Eye contact:	If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.
Ingestion:	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do not induce vomiting! If vomiting occurs, keep head facing down so that vomit does not get into the lungs. Call a doctor or ambulance. Symptoms of chemical pneumonia can appear after several hours. People who have swallowed the product should therefore be kept under medical attention for at least 48 hours.
Burns:	Not applicable.

4.2. Most important symptoms and effects, both acute and delayed

This product contains substances that can cause chemical pneumonia if swallowed. Symptoms of chemical pneumonia may appear after several hours.

4.3. Indication of any immediate medical attention and special treatment needed

IF exposed or concerned:
Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances.
Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 “Disposal considerations” on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid direct contact with the product.
Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage material:	Always store in containers of the same material as the original container.
Storage conditions:	Dry, cool and well ventilated Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Protect from sunlight.
Incompatible materials:	Strong oxidizing agents

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No substances are listed in the national list of substances with an occupational exposure limit.

DNEL

No data available.

PNEC

No data available.

8.2. Exposure controls

Apply general control to prevent unnecessary exposure

General recommendations:	Smoking, drinking and consumption of food is not allowed in the work area.
Exposure scenarios:	There are no exposure scenarios implemented for this product.
Exposure limits:	Occupational exposure limits have not been defined for the substances in this product.
Appropriate technical measures:	Apply standard precautions during use of the product. Avoid inhalation of vapours.
Hygiene measures:	In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.
Measures to avoid environmental exposure:	Keep damming materials near the workplace. If possible, collect spillage during work.

Individual protection measures, such as personal protective equipment

Generally:	Use only UKCA marked protective equipment.

Respiratory Equipment:

Type	Class	Colour	Standards	
S/SL	P2	White	EN149	

Skin protection:

Recommended	Type/Category	Standards	
Wear appropriate protection clothing, e.g. coveralls in polypropylene or working clothes in cotton or polyester.	-	-	

Hand protection:

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Protection Gloves				

Eye protection:

Type	Standards	
Safety glasses with side shields.	EN166	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Colourless
Odour / Odour threshold:	Odourless to mild paraffin (Odour treshold: Not available ppm)
pH:	7.3
Density (g/cm^3):	0.77 - 0.79 (15 °C)
Kinematic viscosity:	2.0 - 4.0 centistokes (40 °C)
Particle characteristics:	Does not apply to liquids.

Phase changes

Melting point/Freezing point (°C):	No data available
Softening point/range (°C):	Does not apply to liquids.
Boiling point (°C):	150 - 370
Vapour pressure:	1 kPa (40 °C)
Relative vapour density:	No data available
Decomposition temperature (°C):	No data available

Data on fire and explosion hazards

Flash point (°C):	>60 Test method: EN ISO 2719
Flammability (°C):	No data available
Auto-ignition temperature (°C):	215
Lower and upper explosion limit (% v/v):	Not applicable

Solubility

Solubility in water:	Insoluble (<0.1mg/l)
n-octanol/water coefficient (LogKow):	>6.5
Solubility in fat (g/L):	No relevant or available data due to the nature of the product.

9.2. Other information

Evaporation rate (n-butylacetate = 100):	No data available
Oxidizing properties:	Not applicable
Other physical and chemical parameters:	No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

The product is stable under the conditions, noted in section 7 “Handling and storage”.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
Sunlight

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008 as retained and amended in UK law

Acute toxicity

Product/substance	Hydrotreated Vegetable Oil
Species:	Rat
Route of exposure:	Dermal
Test:	LD50
Result:	>2000 mg/kg

Product/substance	Hydrotreated Vegetable Oil
Species:	Rat
Route of exposure:	Oral
Test:	LC50
Result:	>2000 mg/kg

Skin corrosion/irritation

Product/substance	Hydrotreated Vegetable Oil
Other information:	Repeated exposure may cause skin dryness or cracking.

Serious eye damage/irritation

Product/substance	Hydrotreated Vegetable Oil
Other information:	Direct contact with eyes may cause temporary irritation

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Product/substance Hydrotreated Vegetable Oil
Other information: May be fatal if swallowed and enters airways.

May be fatal if swallowed and enters airways.

11.2. Information on other hazards

Long term effects

None known.

Endocrine disrupting properties

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

Other information

None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Product/substance Hydrotreated Vegetable Oil

Product/substance Hydrotreated Vegetable Oil
Other information: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product/substance Hydrotreated Vegetable Oil
Test method: OECD 203
Species: Fish
Duration: 96 hours
Test: LL50
Result: >1000 mg/L

Product/substance Hydrotreated Vegetable Oil
Test method: OECD 202
Species: Daphnia
Duration: 48 hours
Test: EL50
Result: >100 mg/L

Product/substance Hydrotreated Vegetable Oil

Product/substance Hydrotreated Vegetable Oil
Test method: OECD 201
Species: Algae
Duration: 72 hours
Test: EL50
Result: >100 mg/L

Product/substance Hydrotreated Vegetable Oil
Species: Bacteria
Duration: 3 hours

Test:	EC50
Result:	>1000 mg/L

12.2. Persistence and degradability

Product/substance	Hydrotreated Vegetable Oil
Conclusion:	-
Other information:	Readily biodegradeable

Product/substance	Hydrotreated Vegetable Oil
Compartment:	Water
Conclusion:	Readily biodegradable
Test:	OECD 301 B

12.3. Bioaccumulative potential

Product/substance	Hydrotreated Vegetable Oil
Conclusion:	Potential for bioaccumulation is low

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Endocrine disrupting properties

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product is not covered by regulations on dangerous waste.
Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

EWC code

Not applicable.

Specific labelling

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: TRANSPORT INFORMATION

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR	-	-	-	-	-	-
IMDG	-	-	-	-	-	-

	14.1 UN / ID	**14.2 UN proper shipping name**	**14.3 Hazard class(es)**	**14.4 PG***	**14.5 Env****	**Other information:**
IATA	UN1202	DIESEL FUEL	Transport hazard class: 3 Label: 3 Classification code: F1 	III	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with transport.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application:	Restricted to professional users.
Demands for specific education:	No specific requirements.
Control of Major Accident Hazards (COMAH) - Categories / dangerous substances:	Not applicable.
Additional information:	Not applicable.
Sources:	Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law. Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) as retained and amended in UK law. Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as retained and amended in UK law.

15.2. Chemical safety assessment

No

SECTION 16: OTHER INFORMATION

Full text of H-phrases as mentioned in section 3

H304, May be fatal if swallowed and enters airways.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
GWP = Global warming potential
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the substance/mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

The safety data sheet is validated by

Richard Hutchinson

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.
Information in this safety data sheet cannot be used as a product specification.
Country-language: GB-en

SAFETY DATA SHEET

according to the Regulation (EU) No 830/2015

AdBlue®

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product identifier : Water solution of urea, AUS 32

Registration number REACH : 01-2119463277-33-0018

Trade name : AdBlue®

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses : The product is a NO_x-gases reduction agent used in the selective catalytic reduction (SCR) in motor vehicles with a diesel engine.

Unadvisable uses : Not recommended for other uses than is mentioned.

1.3. Details of the supplier of the safety data sheet

Supplier :
GreenChem Holding B.V.
Gravinnen van Nassauboulevard 95
4811 BN BREDA – Netherlands
Tel. +31 (0)76 – 581 27 27
Email: msds@greenchem-adblue.com

Representative Office UK :
GreenChem Solutions Ltd
Suite 3 Midshires House, Midshires
Business Park, Smeaton Close
Aylesbury, HP19 8HL; United Kingdom
Tel. +44 (0)1296 678548
Email: msds@greenchem-adblue.com

1.4. Emergency telephone number

24 hours service – applicable to UK only. : 111 or 999

National Poisons Information Service : NPIS do not receive calls from the general public

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance is not classified as dangerous according to the Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

2.2. Label elements	:	None.
2.3. Other hazards	:	The substance does not meet the criteria for PBT and vPvB.

SECTION 3: Composition/information on ingredients

3.1. Substances

Aqueous solution (32.5%) of urea

CAS	*EC*	*Registration Number*	*Classification*	*Content (%)*
Urea				
57-13-6	200-315-5	01-2119463277-33-0018	XXX	32.5
Impurities:				
Biuret				
108-19-0	203-559-0	XXX	XXX	≤ 0.3

Remark: Complete wording of H-phrases is stated in Section 16.

3.2. Mixtures

The product is a substance.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	:	Take out the exposed person to the fresh air.
Skin contact	:	Wash skin with warm water and soap.
Eye contact	:	Wash out the eye with plenty of clean water 15 min., seek for medical care.
Ingestion	:	Drink ca. 2 dcl lukewarm water, do not induce vomiting and seek for medical care.
Clothing exposure	:	Remove the exposed clothing and shoes.

4.2. Most important symptoms and effects, both acute and delayed

No information available.

4.3. Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Aqueous solution of urea has no flammable properties.

Suitable extinguishing media : Extinguishing media to be selected upon surrounding fire.

Unsuitable extinguishing media : Flammable materials and extinguishing media which cannot be used for surrounding fire.

5.2. Special hazards arising from the substance or mixture : When AdBlue is stored in the GreenChem system tank and the system is in danger of fire or extreme heat, pressure will rise and the vessel may burst. In case of fire, immediately isolate the area by evacuating all personnel from the incident vicinity. Do not take any actions that could pose personal risk or for which you are not trained. Always proceed in accordance with directions given in valid emergency plans.

Hazardous combustion products : Combustion product may contain: Carbon dioxide, nitrogen oxides, ammonia.

5.3. Advice for firefighters : Irritating substances may be released in thermal combustion, thus a self-contained breathing apparatus is necessary.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures : Use personal protective equipment during handling with the product (see Section 8). Avoid contact with eyes, skin and clothing.

6.2. Environmental precautions	:	Prevent release to water resources, sewerage and soil. The product is not classified as hazardous for environment.
6.3. Methods and material for containment and cleaning up	:	In case of spilling, rinse the area with plenty of water. Dispose of the remains in a controlled way by flushing them into wastewaters brought to a sewage treatment plant. Depending on the scale and nature of the product contamination, the product may be used for agricultural purposes or disposed of in another controlled way (sewage treatment plant). Dispose of the waste as specified in Section 13.
6.4. Reference to other sections	:	For more information about protective equipment see Section 8. For more information about the disposal of substance, see Section 13.

SECTION 7: Handling and storage

Handling and storage is performed only with respect to the requirements of ISO 22241-3.

7.1. Precautions for safe handling	:	Provide adequate ventilation during manipulation with product and avoid contact with skin and eyes using personal protective equipment. Follow the rules of safe handling of chemicals and basic hygiene habits. Avoid contamination of the product.
7.2. Conditions for safe storage, including any incompatibilities	:	In order to avoid crystallization or hydrolysis in the urea solution, store under common conditions (optimally up to 25 °C).
Suitable material for storage	:	Alloy steels, various plastics, as well as metal tanks with plastic coating.
Unsuitable material for storage	:	Plain steels, copper, aluminium, alloys containing copper and aluminium, galvanized steels.
7.3. Specific end use(s)	:	Specific end use is given in the directions for use on the sticker on the product packaging or in the product documentation – see Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values according to Directive 2000/39/EC, as amended:
No exposure limits have been determined for this product.

Exposure limit for hazardous decomposition products:

CAS	Substance name	8 hours		Short time		Note
		mg/m^3	ppm	mg/m^3	ppm	
7664-41-7	Ammonia, anhydrous	14	20	36	50	-

Limit values of biological exposure tests indicators are not specified in Directive no. 98/24/EC, as amended.

DNEL value (urea EC 200-315-5) for workers		
Exposure, effects	Route	DNEL
Acute/short term, systematic effects	Dermal	580 mg/kg bw/d
Acute/short term, systematic effects	Inhalation	292 mg/m^3
Long-term-systematic effects	Dermal	580 mg/kg bw/d
Long-term-systematic effects	Inhalation	292 mg/m^3
DNEL value (urea EC 200-315-5) for general population		
Acute/short term, systematic effects	Dermal	580 mg/kg bw/d
Acute/short term, systematic effects	Inhalation	125 mg/m^3
Acute/short term, systematic effects	Oral	42 mg/kg bw/d
Long-term-systematic effects	Dermal	580 mg/kg bw/d
Long-term-systematic effects	Inhalation	125 mg/m^3
Long-term-systematic effects	Oral	42 mg/kg bw/d
PNEC value (urea EC 200-315-5)		
PNEC	Value	Assessment factor
Aqua (fresh water)	0.047 mg/l	1 000
Aqua (marine water)	0.047 mg/l	-

8.2. Exposure controls

8.2.1 Appropriate engineering controls

Ensure sufficient local ventilation.

8.2.2 Individual protection measures, such as personal protective equipment

Regulation (EU) No 2016/425 introduce all personal protective equipment used.

Eye/face protection	:	Use protective goggles with side shields when handling the product (e.g. transferring).
Skin protection	:	Wear suitable protective gloves and shoes.
Hand protection	:	Hand protection: Protective gloves. The breakthrough time: > 8 hours Suitable glove material: PVC, natural rubber (latex), butyl rubber, nitrile rubber. Material to be avoided: leather.
Respiratory protection	:	In case of insufficient ventilation system, use effective respirator, mask with ammonia-proof filter.
Thermal hazards	:	Information is not available.

8.2.3 Environmental exposure controls

Prevent uncontrolled release to environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	:	Liquid
Color	:	Clear
Odor	:	Slight ammonia-like
Odor threshold	:	Information is not available
pH	:	Max. 10 (10% aqueous liquid)
Melting point/freezing point	:	Information is not available
Initial boiling point and boiling range	:	Information is not available
Flash point	:	Information is not available
Evaporation rate	:	Information is not available
Flammability (solid, gas)	:	Information is not available
Upper/lower flammability or explosive limits	:	Information is not available
Vapour pressure	:	Information is not available
Vapour density	:	Information is not available
Relative density	:	1,087 – 1,093 kg/m^3
Solubility (ies)	:	Information is not available
Partition coefficient: n-octanol/water	:	Information is not available
Auto-ignition temperature	:	Information is not available
Decomposition temperature	:	Information is not available
Viscosity	:	Approx. 1.4 mPa.s at 25 °C
Explosive properties	:	Information is not available
Oxidizing properties	:	Information is not available

9.2. Other information

Molecular weight : 60.06 kg/kmol
Thermal conductivity (at 25 °C) : Approx. 0.57 W/m.K
Specific heat (at 25 °C) : Approx. 3.4 kJ/kg.K
Surface tension : min 65 mN/m
Refractive index at 20 °C : 1.3814 – 1.3843
Crystallization point : -11.5 °C

SECTION 10: Stability and reactivity

10.1. Reactivity : Stable under recommended storage and handling conditions (see Section 7, handling and storage).
10.2. Chemical stability : Stable under recommended storage and handling conditions (see Section 7, handling and storage).
10.3. Possibility of hazardous reactions : When heated, decomposition of products.
10.4. Conditions to avoid : Heating causes thermal decomposition and the gases formation.
10.5. Incompatible materials : Not know.
10.6. Hazardous decomposition products : NO_x, NH_3, CO_2

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : No information about acute toxicity for product available.
For urea (EC 200-315-5):
Oral (rat) LD_{50} 14,300 mg/kg bw (male), OECD Guideline 401
Skin corrosion/irritation : Based on available data, the classification criteria are not met.
Serious eye damage/irritation : Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : Based on available data, the classification criteria are not met.
Reproductive toxicity : Based on available data, the classification criteria are not met.
STOT-single exposure : Information is not available.

STOT-repeated exposure : Information is not available.

Aspiration hazard : Information is not available.

SECTION 12: Ecological information

12.1. Toxicity : The product is not classified as hazardous for environment.

For urea (EC 200-315-5)

Fish:

Short-term: LD_{50}: 6,810 mg/l

Aquatic invertebrates:

EC_{50}/LC_{50}: 10,000 mg/l

Algae and aquatic plants:

EC_{10}/LC_{10} (NOEC): 47 mg/l

12.2. Persistence and degradability : It is considered readily biodegradable material.

12.3. Bioaccumulative potential : Biodegradation, in view of the main component (urea) is not assumed.

12.4. Mobility in soil : The product is soluble in water.

12.5. Results of PBT and vPvB assessment : The substance does not meet the criteria for PBT and vPvB.

12.6. Other adverse effects : It is possible to contaminate the surface and ground waters due to improper manipulation.

SECTION 13: Disposal considerations

13.1. Waste treatment methods : Depending on the degree and character of contamination, the product is suitable to use for agricultural purposes or for disposal under control by authorized waste contractors (sewage treatment plant).
Empty container damaged during the usage has to be stored at the designated place and disposed by combustion in a solid waste incineration plant.

Legal regulations relating to waste : Directive on waste 2006/12/EC and 2008/98/EC.
Disposal must be made according to official regulations.

SECTION 14: Transport information

Product is not classified as dangerous good for transport according to ADR/RID/IMDG Code.

14.1. UN number : Unassigned
14.2. UN proper shipping name : Unassigned
14.3. Transport hazard class(es) : Unassigned
14.4. Packing group : Unassigned
14.5. Environmental hazards : AdBlue® is not classified as environmentally hazardous substance according to the ADR/RID/IMDG Code.
14.6. Special precautions for user : Transported in insulated tank trucks or palletized plastic tanks (IBC). Materials suitable for these tanks are alloy steels, various plastics, as well as metal tanks with plastic coating.
Plain steels, copper, aluminium, alloys containing copper and aluminium, galvanized steels must not be used.
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code : Unassigned

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions on the substances or mixtures according to Annex XVII of the REACH : None
Candidate list (SVHC list of substances) – REACH article 59 : None
Substances subject to authorization (Annex XIV of the REACH Regulation) : None
SEVESO (prevention of major accidents) : None

Regulation (EC) of the European Parliament and of the Council No 1907/2006 on Registration, evaluation, authorisation and restriction of chemicals (REACH)
Regulation (EC) of the European Parliament and of the Council No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP)
Directives 80/68/EEC, 90/656/EEC, 91/692/EEC, on waters
Directive 96/62/EEC, on air
Directive 2000/39/EC, Directive no. 98/24/EC – exposure limit
Directive 91/383/EEC - occupational safety at the workplace
EN ISO 22241 parts 1 to 5.

The recipient of the substance or mixture must take measures following the legal status of the substance or mixture (including substances contained in the mixture) in compliance with domestic legislation of the particular member state, and to list those legal regulations here.

15.2. Chemical safety assessment : Urea does not meet the criteria for classification of a dangerous substance within the meaning of Regulation No 1272/2008 and is not considered a PBT or vPvB and therefore an exposure assessment is not required.

SECTION 16: Other information

16.1. Used information sources : Available information from DUSLO.

16.2. Instructions for the training : Instructions for the manipulation with product shall be included into the educational system on the work safety (initial training, training at the workplace, repeated trainings) according to the specific conditions at the workplace.

16.3. List of relevant hazard statements and precautionary statements used in the SDS : None.

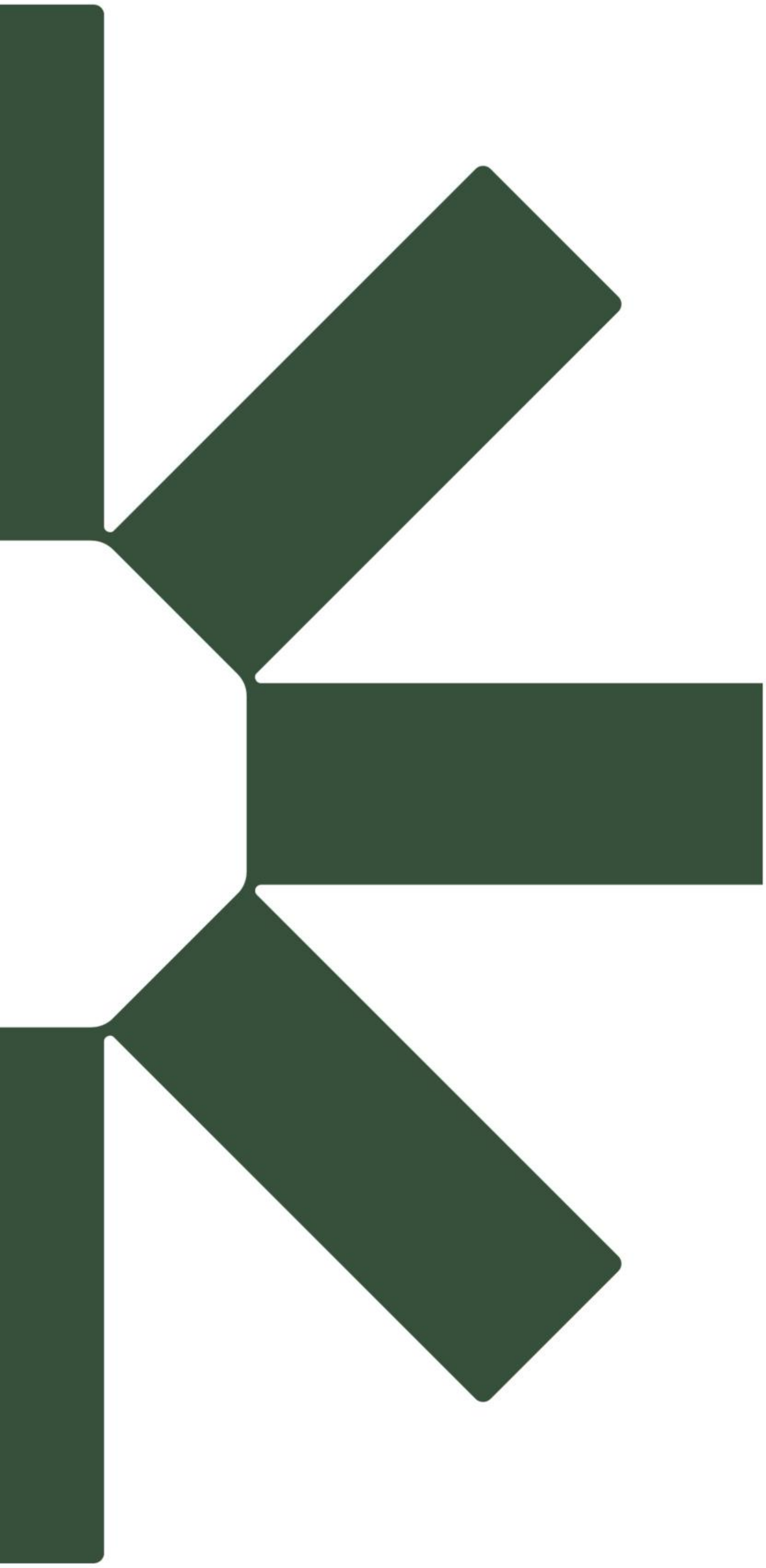
16.4. Changes executed within the revision : Revision: 22 Dec 2020 / version 12.3
Correction of subsection 15.2.; 16.1.

16.5. Legend to abbreviations and acronyms :

CAS – Chemical Abstract Service
ES – European Community number of a chemical for EINECS, ELINCS and NLP inventories
PBT – Persistent, Bioaccumulative and Toxic substance
vPvB – Very Persistent and Very Bioaccumulative
LD_{50} – Lethal Dose to 50% of a test population (Median Lethal Dose)
LC_{50} – Lethal Concentration to 50% of a test population
EC_{50} – Half maximal effective concentration
SVHC – Substances of Very High Concern
DNEL – Derived No Effect Level
PNEC – Predicted No Effect Concentration(s)

16.6. Other information

All information given in this Safety Data Sheet correspond to our knowledge at the time of the revision performed. The information only describes the product with respect to safe handling; it is not quality specification and do not establish the law.
The information given in this Safety Data Sheet is valid only for this material and under no circumstances it will be valid if this SDS is used in combination with another material or process not given in the text of this SDS. Information contained herein is based on our best knowledge and belief at the time of its issuing.
The information given herein is intended only as direction for safe handling with the product, its use(s), storage, processing, transport, and disposal, and does not provide any warranty or quality guarantee. This Safety Data Sheet contains only information relating to the safety and does not substitute information on the product or its specification.



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