

# 43 BURGHLEY ROAD, LONDON NW5 1UH Basement Impact Assessment: Land Stability March 2016



### **Client:**

Ground and Water Ltd 2 The Long Barn Norton Farm, Selborne Road Alton Hampshire, GU34 3NB

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### 1. Introduction

Ground and Project Consultants Ltd have been instructed by Ground and Water Ltd (G&W) to undertake the land stability element of a Basement Impact Assessment, for 43 Burghley Road, London, NW5 1UH. The property is located in the London Borough of Camden, London in the Kentish Town ward, its location is indicated on Figure 1.

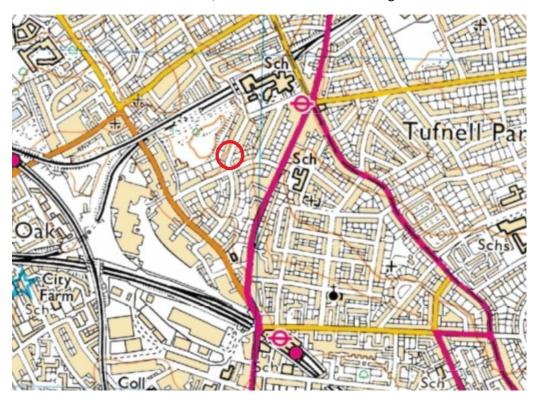


Figure 1: Site Location

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### 2. Scope and Objective

The scope of this report and approach is as follows:

- A review of the existing data supplied by the client has been carried out, including the proposal drawings produced to date, Ground Investigation data, photos of the building and the background data available through London Borough of Camden's website and other freely available data such as BGS geological information and purchased environmental data.
- In line with the London Borough of Camden guidance, CPG4, latest revision:
- In line with the CPG4 guidance:
  - A detailed assessment of the published and encountered geology
  - Development of a ground model including an assessment of geotechnical properties
  - An engineering interpretation including an assessment of slope stability and commentary and assessment regarding ground movements.
- Recommendations for additional work/ monitoring and observation have been provided.

The report has not considered contaminated land aspects of the site.

This report and the work to support it has been carried out by Jon Smithson who is a Director of Ground and Project Consultants Ltd and is a Chartered Geologist (CGeol) with over 30 years' experience.

### 3. BIA Screening for Slope/Land Stability

A screening exercise has been carried out as per the guidance in Camden's Guidance for Basements, CPG4 as follows:

Question	Answer	Action/ Comment
Question 1: Does the existing	No. The property is located at	None
site include slopes, natural or	around 45mAOD. The land	
manmade, greater than 7	rises to the West at a gradient	
degrees? (approximately 1 in 8)	locally of around 1 in 15. There	
	are no local slopes at the	
	property.	
Question 2: Will the proposed	No.	None
re-profiling of landscaping at		
site change slopes at the		
property boundary to more		
than 7deg? (approximately 1 in		
8)		
Question 3: Does the	No. There are no railway	None
development neighbour land,	cuttings in the immediate	
including railway cuttings and	vicinity.	
the like, with a slope greater		
than 7deg? (approximately 1 in		
8)	TI 00	- · · · · · · · · · · · · · · · · · · ·
Question 4: Is the site within a	The OS map indicates that the	Further discussed in the
wider hillside setting in which	land rises to the West at a	Impact Assessment.
the general slope is greater	gradient locally of around 1 in	
than 7degrees? (approximately	8. However it is apparent that	
1 in 8)	the land behind the property	
	has been extensively reprofiled in connection with the	
	development of Ingestre Road	
	Community Centre.	
	The general slope angles	
	indicated on Arup Fig 16 are	
	less than 7 degrees, although	
	there is one area just to the	
	north of the property which	
	shows angles of >7°.	
Question 5: Is the London Clay	Yes, the geological map (sheet	The presence of London
the shallowest strata at the	256) indicates that the site is	Clay close to surface is
site?	underlain London Clay with a	further discussed in the
	potential for Head Deposits at	Impact Assessment.
	the site.	
Question 6: Will any tree/s be	No but there are trees close to	Further discussed in the
felled as part of the proposed	the property and a number of	Impact Assessment.
development and/or are any	bushes in the gardens and	
works proposed within any tree	adjacent gardens.	
protection zones where trees		
are to be retained? (Note that		

consent is required from LB Camden to undertake work to any tree/s protected by a Tree Protection Order or to tree/s in a Conservation Area if the tree is over certain dimensions).  Question 7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?  Question 8: Is the site within 100m of a watercourse or a potential spring line?	None known. However London Clay is indicated as being present at the property. Head deposits can also have high plasticity.  Possibly: Figure 11 of the Arup report indicates that a 'Lost River' is approximately 100m to the west of the property. This is a tributary of the River Fleet.	Further discussed in the Impact Assessment.  This is further discussed in the Impact Assessment.
Question 9: Is the site within an area of previously worked ground?	None known or suspected. There will be some made ground associated with past construction activities. (see ground investigation). There may be made ground associated with the land and former power station to the rear.	This is further discussed in the Impact Assessment.
Question 10: Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?	No. The London Clay is classified by the Environment Agency as unproductive strata (rock layers with low permeability and negligible significance for water supply or river base flow). However the basement may extend into the water table.	This is further discussed in the Impact Assessment.
Question 11: Is the site within 50m of the Hampstead Heath ponds?	No. The ponds are around 1km to the north west.	None
Question 12: Is the site within 5m of a highway or pedestrian right of way?	Yes. The basement will be within 5m of the highway and pavement.	Health Safety and environmental measures will be required to be integrated into the building contractor's methods of working. This is further discussed in the Impact Assessment.

Question 13: Will the proposed	Yes.	This is further discussed
basement significantly increase		in the Impact
the differential depth of		Assessment.
foundations relative to		
neighbouring properties?		
Question 14: Is the site over (or	No. The site is approximately	None.
within the exclusion zone of)	200m of the nearest railway	
any tunnels, e.g. railway lines?	line which is not in tunnel.	

#### 4. Site Information

#### 4.1 Existing Property and Basement Proposals

The property at 43 Burghley Road is located on the west side of the road, about 30m from its junction with Lady Somerset Road. The property is a 3 storey terraced property probably of late Victorian age. Parliament Hill is approximately 0.6km to the west northwest and Regent's Park approximately 3km to the south. The elevation of the site is around 45mAOD. The land rises gradually to the northwest towards Parliament Hill. The main railway line runs around 200m to the north.

The National Grid reference for the property is TQ 28898 85692. The location of the property is provided in Figure 1 above.

There are a number of trees and bushes in the garden and adjacent gardens.

The basement proposals comprise a single storey beneath the full footprint of the property. The basement depth will be around 2.6m at the rear and around 1.6m at the front as the land rises slightly to the south. The basement footprint will be 16m by 6m (96m²). The descriptions and dimensions above have been estimated from drawings obtained on Camden's planning portal.

#### 4.2 **Topography**

The OS map indicates the property is at around 45m AOD. The ground surface rises towards the west at around 1 in 15 ( $^{\sim}5^{\circ}$ ). The latest edition OS shows the college buildings and an embankment feature immediately to the west of the rear garden of the property. The change in elevation at the property is around 1m from front to back, a distance of 16m.

### 4.3 **Geology**

The available geological mapping (Ref 1.) indicates that the site lies on London Clay which typically comprises a stiff grey fissured clay, weathering to brown near surface. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. The geological map (North London 256) indicates that the property is within an area of 'propensity' for Head Deposits, associated with the higher ground of Highgate Hill. Typically these deposits are thin (<2m) and consist of soft, ocherous brown silty clay with blue-grey mottling in places and angular, frost-shattered fragments of flint occur sporadically throughout. The base of the London Clay is likely to occur significant depth below the property. See figure 3 below.



Figure 3: Geology 2015

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### 4.4 Hydrology and Hydrogeology

The OS Map indicates that Hampstead Ponds are located around 1km to the northwest. Figure 11 of the Arup report indicates the 'headwaters' of a 'Lost River' to the west of the property, which is a branch of the River Fleet. There are no springs shown on OS mapping.

The London Clay is classified by the Environment Agency as unproductive strata (rock layers with low permeability and negligible significance for water supply or river base flow).

### 4.5 Other Environmental Data

The Groundsure report gives a wealth of background data on local environmental issues and hazards. (See Appendix A). Some of the key issues relevant to land stability are summarised in the table below:

Drift Deposits	None are indicated on BGS mapping
Diff Deposits	(note comments re Head Deposits above)
Made Ground	None are indicated on BGS mapping
Groundwater & Abstraction	Unproductive Strata (London Clay).
Groundwater & Abstraction	Closest abstraction point 900m+ to S.
Current Uses	Various light industrial and commercial
Current oses	uses between 120 and 200m in a general
	southerly direction. Electricity Sub Station
	162m to SW.
Historical Uses	Electricity generating station immediately
	to the west of the property with
	associated 'unspecified heap'. Railway
	siding 112m to N and associated cuttings
	and tunnels and railway buildings200m +
	to SW and W. Electricity sub-stations are
	recorded between 5m and 156m+ of the
	property.
River Network	A surface water feature is recorded 164m
	North of site but it is unclear what this is.
	A culvert is noted approx. 450m WSW of
	the property trending NNW-SSE. This is
	likely to be the culverted arm of the River Fleet referred to above.
Elooding	
Flooding Shrink/ Swell	Very Low Risk There is a moderate Hazard of shrink and
Sillinky Swell	swell from the London Clay soils. Report
	advises: "Ground conditions
	predominantly high plasticity. Do not
	plant or remove trees or shrubs near to
	buildings without expert advice about
	their effect and management. For new
	build, consideration should be given to
	advice published by the National House
	Building Council (NHBC) and the Building
	Research Establishment (BRE)."
Landslide	Very Low Risk
Soluble Rocks	Negligible Risk
Compressible Ground	Negligible Risk
Collapsible Ground	Very Low Risk
Running Sand	Negligible Risk
Radon	Not in a Radon Affected Area
Mining	None recorded

An historic map has been obtained dated 1912-13. This indicates the former power station to the rear of the site, see Figure 4 below. An earlier map shows the houses on Burghley Road but the land to the rear appears to be fields, indicating the power station post-dates the houses (see Figure 5).

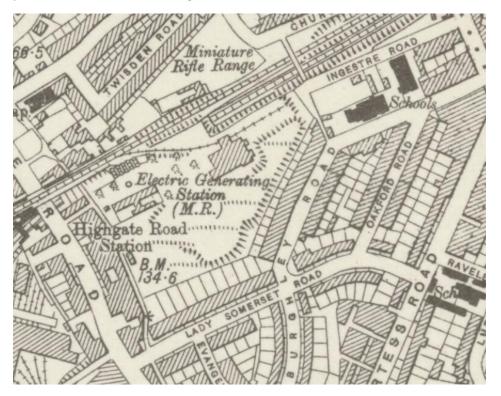


Figure 4: Historic Map 1912-13

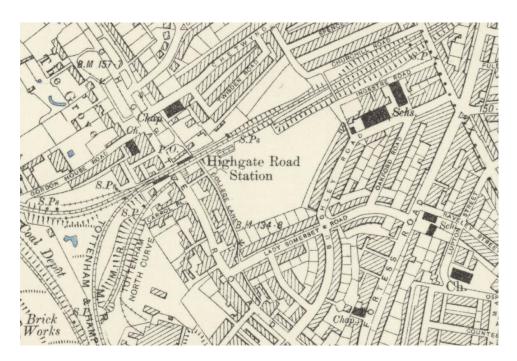


Figure 5: Historic Map 1894

#### 5. Ground Investigation

A ground investigation (GI) has been carried out at the site by Ground and Water Ltd (G&W) and results of these have been made available by G&W. The GI was carried out in August 2014.

The work comprised one window sample borehole (WS1) to 5.00m bgl in the north part of the site. A dynamic probe (DP1) was carried out at the location of WS1 to 10m depth. A trial pit for foundation exposure (TP/FE1) was excavated at the front of the property. Locations and records are provided in G&W's report. No groundwater monitoring was installed.

Below is a summary derived from the Ground Investigation report. The borehole encountered a cover of Made Ground 2.30m thick. This was described as an 'orange brown slightly gravelly silty clay, gravel is rare, fine, sub-angular brick and concrete. Below this the borehole encountered London Clay described as an orange brown silty CLAY with blue grey mottling.

The trial pit encountered a similar amount of made ground and the foundation appears to be founded at the interface of the made ground and London Clay.

Groundwater was encountered at 3.30m bgl in the borehole. Roots were noted at 1.00m bgl.

The dynamic probe hole can be summarised as follows:

- N100 values 0 (zero) from ground level to 1.2m
- N100 values of 2 from 1.2 to 3.4m
- N100 values of between 2 and 4 from 3.4m to 5.4m
- N100 values increasing from 4 to 10 or 11 at 10m.

G&W have equated these results to SPT equivalents and correlated these on to undrained shear strength. They summarise that the undrained shear strength range for the London Clay is between 20 and 30 kPa from 2.30 to 5.00m bgl and 30 to 110kPa from 5 to 10m bgl.

Laboratory tests were carried out on the samples collected from the boreholes. Testing consisted of the following:

3 No. Atterberg Limit test including moisture content determination

1 No. Soluble Sulphate, pH and related tests for Concrete Classification on soil samples

All of the Atterberg tests were conducted in the London Clay. These are consistent with similar values both of water content and atterberg limits as follows:

Moisture Content: 32 to 33%
Plastic Limit: 25 to 31%
Liquid Limit: 75 to 83%
Plasticity Index: 50 to 52%

• Liquidity Index 0.16 to 0.02 (decreases with depth)

The minimal variation in liquid, plastic limits and plasticity index is indicative of London Clay, indicating a clay of high plasticity. The water content and liquidity index are reflective of a firm or firm to stiff/stiff clay.

### 6. Conceptual Ground Model

From the above a conceptual Ground model has been developed and is presented in tabular form below:

Strata	Typical Description	Depth at Property encountered in GI	Geotechnical Properties – Tentative Characteristic Values*	Other
Made Ground	Brown silty clayey sand with gravel/ silty sand clay, gravel is brick, concrete, flint.	Ground level to 2.30m	N/A	Made Ground should not be relied upon as a bearing strata.
London Clay	Brown silty clay. Probably firm becoming firm to stiff.	2.30- 10.00m (base not proven). Likely London Clay in DP hole to 10m	C' =0 $\phi' = 20^{\circ}$ Cu = 20 increasing to 30kN/m <sup>2</sup> at formation. **	The undrained shear strength of the London Clay should be confirmed prior to construction
Groundwater		3.3m bgl		May significantly vary seasonally or after prolonged wet or dry periods.

Table 3: Summary of Strata Characteristics

<sup>\*</sup>The determination of parameters is tentative due to the lack of test data.

<sup>\*\*</sup>Strength should be verified by hand held shear vane/ inspection during ground excavation.

### 7. Impact Assessment

There are no apparent major issues which should seriously affect the viability of the construction of the new basement. However the assessment of the geological environment of 8A Belmont Street and the screening exercise indicate some areas for further discussion in this report with suggested mitigation where appropriate.

- 7.1 **Slopes:** In general slopes at and around the site are gentle. The former power station site to the rear indicates a slope. The exact nature of the slope is not known and should be assessed further prior to final design and construction.
- 7.2 **London Clay/Shrink and Swell:** The basement will be founded in London Clay. The soils are of high plasticity and high volume change potential. The basement will be founded at around 1.6m to 2.6m bgl, therefore below any seasonal shrink and swell. The London Clay soils are known for their high levels of soluble sulphate. The concrete mix design should take appropriate account of sulphate levels in accordance with BRE Special Digest 1. The basement structure should be designed to account for swelling pressures.
- 7.3 **Trees:** Semi-mature and bushes are located in the vicinity of the property. Care should be taken to minimise root damage during construction works. Should trees be removed there is potential for the soils to swell as a result which may affect this and neighbouring properties and this should be accounted for in design.
- 7.4 Groundwater/Aguifer: Groundwater was encountered below the proposed basement formation level. This measurement reflects ingress during drilling and will not necessarily be representative of true groundwater levels within the London Clay. It is recommended that a design level of ground surface is used, this accounts for seasonal variations and leaks from water supply, etc. Groundwater may be encountered during the works, particularly as seepages through sandy silty layers within London Clay or at the base of the Made Ground. These should be managed carefully to prevent ground loss particularly through loss of fines. Softening of formation due to water ingress is a risk and softened soils should be excavated and replaced where practicable. Consideration should be given to limiting the size and time of face exposures during construction should significant flows be encountered during construction. Baseline and ongoing regular monitoring of the building and its immediate neighbours for settlement and movement/distress is highly recommended during building works and for a short period after completion. It is recommended that ongoing monitoring of groundwater levels is carried out during and up to the end of construction of the basement structure.
- 7.5 **Lost River:** There is a lost river indicated some distance from site. It is considered that this can have no impact on the proposal.

- 7.6 **Basement Depth**: It is proposed to be construct the basement to a level of approximately 2.6m below the existing ground floor. The property adjoins a neighbouring houses either side. The proposals to construct the basement is likely to be via underpinning at the party wall. Underpinning proposals are understood to involve a 'hit and miss' approach in stages so each 'panel' is separated by 3-5 others from the next open one. It will be important that the building contractor is closely supervised and is experienced in this type of construction. It will be critical to prevent exposed faces from collapse or significant ground loss into the new excavation and temporary face support should be maintained where practicable. The nature and presence of basements/cellars in the adjoining properties is not known at this stage. Most ground movement should occur during wall installation, excavation of the basement and construction so the adequacy of temporary support will be critical in limiting ground movements. A number of factors will assist in limiting ground movements:
  - The speed of propping and support
  - Good workmanship
  - Ensuring that adequate propping is in place at all times during construction
  - Installation of the first (stiff) support quickly and early in the construction sequence.
  - Avoidance of ground loss through the gaps between the piles.
  - Avoid leaving ground unsupported.
  - Minimise deterioration of the central soil mass by the use of blinding/ covering with a waterproof membrane.
  - Avoid overbreak
  - Control dewatering to minimise fines removal and drawdown.
- 7.7 **Previously Worked Ground:** The site is adjacent to a former power station, although it appears that the property pre-dates the construction of the power station. This indicated by comparison of the 1894 and 1913 maps (Figs 4 and 5). The ground investigation encountered made ground to 2.3m. The made ground is likely to be associated with the construction of the houses. The basement will be founded in natural ground (London Clay).
- 7.8 **Construction near footpath and highway:** The proximity of the front of the property to the pavement and highway, means that works will be carried out in close proximity. A thorough assessment of risks to the public and the workforce will need to be developed and mitigation measures put in place where risks cannot be eliminated.

#### 8. Conclusions

The methodology and approach of CPG4 has been followed in developing this BIA with respect to Land stability. It is concluded that with the construction of the new basement at 43 Burghley Road should not have significant impacts on land stability provided that:

- Groundwater inflow, if encountered, is reduced to a minimum and properly controlled such that there is no significant wash out of fine material. Groundwater levels should be monitored before and during construction.
- The retaining wall should be appropriately designed.
- The construction of the basement is carried out by competent and experienced contractors and precautions are taken to maintain the stability of the excavations.
- Care should be taken to minimise the disturbance and damage to trees and their roots. Should tress be removed then an assessment of the potential for swelling of the London Clay soils should be carried out.
- Concrete should be designed in accordance with BRE Special Digest 1 accounting for the sulphate conditions anticipated.
- Monitoring of the structures is carried out before and during construction. The exact nature of this monitoring should be determined by the structural engineer.

### 9. References

- 1. BGS Geological Map Sheet 256.
- 2. Ordnance Survey Map, Explorer 173, London North
- 3. Arup: Camden Geological, Hydrogeological and Hydrological Study.
- 4. Martin Evans Architects drawing
- 5. Ground&Water: Ground Investigation Report: 43 Burghley Road
- 6. Groundsure Envirolnsight report for 43 Burghley Road, GS-2806159

### Appendix A

Groundsure Enviroinsight Report 43 Burghley Road, GS-2806159



#### LOCATION INTELLIGENCE

Ground and Project Consultants Ltd

1, MEOLE HALL GARDENS, SHREWSBURY, SY3 9JS

Groundsure

GS-2806159

Reference:

Your Reference: 20120

Report Date

7 Mar 2016

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If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director **Groundsure Limited** 

Enc.

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# Groundsure Enviroinsight

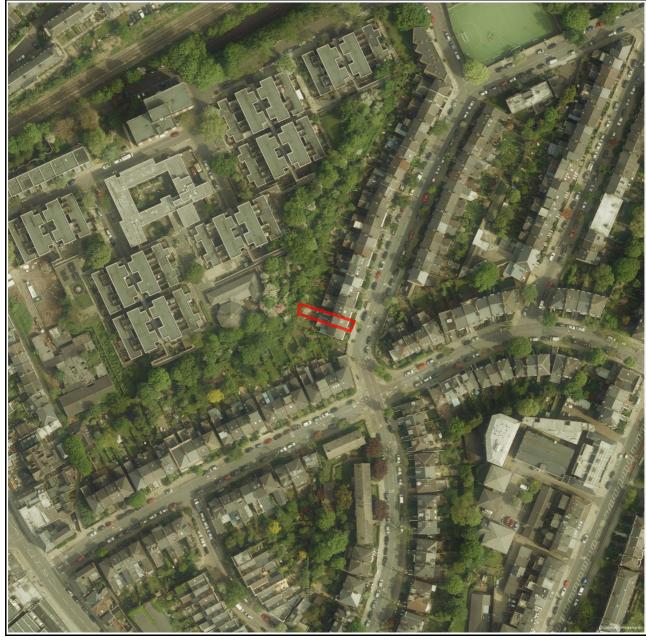
Address: 43, BURGHLEY ROAD, LONDON, NW5 1UH

Date: 7 Mar 2016

Reference: GS-2806159

Client: Ground and Project Consultants Ltd

NW NE



Aerial Photograph Capture date: 04-May-2014

Grid Reference: 528892,185693

Site Size: 0.01ha

Report Reference: GS-2806159 Client Reference: 20120

SW

2

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# **Contents Page**

Contents Page	3
Overview of Findings	6
Using this report	10
1. Historical Land Use	11
1. Historical Industrial Sites	12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping	
1.2 Additional Information – Historical Tank Database	
1.3 Additional Information – Historical Energy Features Database	
1.4 Additional Information – Historical Petrol and Fuel Site Database	
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	
1.6 Potentially Infilled Land	
2. Environmental Permits, Incidents and Registers Map	23
2. Environmental Permits, Incidents and Registers	24
2.1 Industrial Sites Holding Licences and/or Authorisations	24
2.1.1 Records of historic IPC Authorisations within 500m of the study site:	
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:	
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m	
study site:	
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:	
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:	
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:	
2.1.8 Records of Licensed Discharge Consents within 500m of the study site:	
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m	
study site:	
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:	
2.2 Dangerous or Hazardous Sites	
2.3 Environment Agency Recorded Pollution Incidents	
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:	
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	
3. Landfill and Other Waste Sites Map	29
3. Landfill and Other Waste Sites	30
3.1 Landfill Sites	
3.1.1 Records from Environment Agency landfill data within 1000m of the study site:	
3.1.2 Records of Environment Agency landfill sites within 1500m of the study site:	
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:	
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:	
3.2 Other Waste Sites	30
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:	
3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:	31
4. Current Land Use Map	32
4. Current Land Uses	33
4.1 Current Industrial Data	33
4.2 Petrol and Fuel Sites	
4.3 National Grid High Voltage Underground Electricity Transmission Cables	
4.4 National Grid High Pressure Gas Transmission Pipelines	35
5. Geology	36
5.1 Artificial Ground and Made Ground	36



	ON INTELLIGENCE
5.2 Superficial Ground and Drift Geology5.3 Bedrock and Solid Geology	
6 Hydrogeology and Hydrology	37
6a. Aquifer Within Superficial Geology	37
6b. Aquifer Within Bedrock Geology and Abstraction Licenses	38
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses	39
6d. Hydrogeology – Source Protection Zones within confined aquifer	40
6e. Hydrology – Detailed River Network and River Quality	41
6.Hydrogeology and Hydrology	42
6.1 Aquifer within Superficial Deposits	42
6.2 Aquifer within Bedrock Deposits	
6.3 Groundwater Abstraction Licences	
6.4 Surface Water Abstraction Licences	
6.5 Potable Water Abstraction Licences	
6.6 Source Protection Zones	
6.7 Source Protection Zones within Confined Aquifer	
6.9 River Quality	
6.9.1 Biological Quality:	
6.9.2 Chemical Quality:	
6.10 Detailed River Network	
6.11 Surface Water Features	46
7a. Environment Agency Flood Map for Planning (from rivers and the sea)	47
7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map	48
7 Flooding	49
7.1 River and Coastal Zone 2 Flooding	49
7.2 River and Coastal Zone 3 Flooding	
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating	49
7.4 Flood Defences	
7.5 Areas benefiting from Flood Defences	
7.6 Areas benefiting from Flood Storage	
7.7 Groundwater Flooding Susceptibility Areas	
7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of t the study site? No	50
7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the under	
conditions?7.8 Groundwater Flooding Confidence Areas	
8. Designated Environmentally Sensitive Sites Map	51
<ol> <li>Designated Environmentally Sensitive Sites</li> <li>Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:</li> </ol>	52 52
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:	
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:	
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:	
8.5 Records of Ramsar sites within 2000m of the study site:	
8.6 Records of Ancient Woodland within 2000m of the study site:	
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:	53
8.8 Records of World Heritage Sites within 2000m of the study site:	
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:	
8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: .	
8.11 Records of National Parks (NP) within 2000m of the study site:	
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:	
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:	54



61

	LOCATION INTELLIGENCE
8.14 Records of Green Belt land within 2000m of the study site:	54
9. Natural Hazards Findings	55
9.1 Detailed BGS GeoSure Data	55
9.1.1 Shrink Swell	55
9.1.2 Landslides	55
9.1.3 Soluble Rocks	55
9.1.4 Compressible Ground	56
9.1.5 Collapsible Rocks	56
9.1.6 Running Sand	56
9.2 Radon	56
9.2.1 Radon Affected Areas	56
9.2.2 Radon Protection	57
10. Mining	58
10.1 Coal Mining	58
10.2 Non-Coal Mining	58
10.3 Brine Affected Areas	58
Contact Details	59

Report Reference: GS-2806159 Client Reference: 20120

Standard Terms and Conditions



# **Overview of Findings**

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	1	4	52	129
1.2 Additional Information – Historical Tank Database	0	0	0	33
1.3 Additional Information – Historical Energy Features Database	0	1	25	47
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	4	30
1.6 Potentially Infilled Land	0	3	23	35
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	3	14
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	2
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	1



					LOCATION INTE	ELLIGENCE
Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000- 1500
3.1 Landfill Sites						
3.1.1 Environment Agency Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency Historic Landfill Sites	0	0	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency Licensed Waste Sites	0	0	0	0	3	0
Section 4: Current Land Use	On-site	9	0-50m	51-25	0 2	51-500
4.1 Current Industrial Sites Data	0		0	27	No	t searched
4.2 Records of Petrol and Fuel Sites	0		0	0		1
4.3 National Grid Underground Electricity Cables	0		0	0		3
4.4 National Grid Gas Transmission Pipelines	0		0	0		0
<ul><li>5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?</li><li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li></ul>			No	one		
Section 6: Hydrogeology and Hydrology			0-5	00m		
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?			١	No		
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?			Y	es		
	On-site	0-50m	51-250	251-500	501-1000	1000- 2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	5	2
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	2	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	0	0	Not searched	Not searched
	On-site	0-50m	51-250	251-500	501-1000	1000- 1500



Section 6: Hydrogeology and Hydrology	0-500m					
6.9 Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	No	No
6.10 Detailed River Network entries within 500m of the site	0	0	0	1	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched
Section 7: Flooding						
7.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?			Ν	10		
7.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site			٨	10		
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?			Very	/ Low		
7.4 Are there any Flood Defences within 250m of the study site?			٨	lo		
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?			٨	lo		
7.6 Are there any areas used for Flood Storage within 250m of the study site?			٨	10		
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?			Not I	Prone		
7.8 What is the BGS confidence rating for the Groundwater	Not Applicable					
Flooding susceptibility areas?				pticable		
				plicable		
	On-site	0-50m	51-250	251-500	501-1000	1000- 2000
Flooding susceptibility areas?  Section 8: Designated Environmentally Sensitive	On-site	0-50m 0			501-1000	
Section 8: Designated Environmentally Sensitive Sites			51-250	251-500		2000
Section 8: Designated Environmentally Sensitive Sites  8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	51-250	251-500	0	1
Section 8: Designated Environmentally Sensitive Sites  8.1 Records of Sites of Special Scientific Interest (SSSI)  8.2 Records of National Nature Reserves (NNR)	0	0	51-250 0	251-500 0 0	0	1 0
Section 8: Designated Environmentally Sensitive Sites  8.1 Records of Sites of Special Scientific Interest (SSSI)  8.2 Records of National Nature Reserves (NNR)  8.3 Records of Special Areas of Conservation (SAC)	0 0	0 0	51-250 0 0	251-500 0 0	0 0	2000 1 0
Section 8: Designated Environmentally Sensitive Sites  8.1 Records of Sites of Special Scientific Interest (SSSI)  8.2 Records of National Nature Reserves (NNR)  8.3 Records of Special Areas of Conservation (SAC)  8.4 Records of Special Protection Areas (SPA)	0 0 0	0 0 0	51-250 0 0 0	251-500 0 0 0	0 0 0	2000 1 0 0
Section 8: Designated Environmentally Sensitive Sites  8.1 Records of Sites of Special Scientific Interest (SSSI)  8.2 Records of National Nature Reserves (NNR)  8.3 Records of Special Areas of Conservation (SAC)  8.4 Records of Special Protection Areas (SPA)  8.5 Records of Ramsar sites	0 0 0 0	0 0 0 0	51-250 0 0 0	251-500 0 0 0 0	0 0 0 0	2000 1 0 0 0
Section 8: Designated Environmentally Sensitive Sites  8.1 Records of Sites of Special Scientific Interest (SSSI)  8.2 Records of National Nature Reserves (NNR)  8.3 Records of Special Areas of Conservation (SAC)  8.4 Records of Special Protection Areas (SPA)  8.5 Records of Ramsar sites  8.6 Records of Ancient Woodlands	0 0 0 0 0	0 0 0 0 0	51-250 0 0 0 0	251-500 0 0 0 0	0 0 0 0 0	2000 1 0 0 0 1
Section 8: Designated Environmentally Sensitive Sites  8.1 Records of Sites of Special Scientific Interest (SSSI)  8.2 Records of National Nature Reserves (NNR)  8.3 Records of Special Areas of Conservation (SAC)  8.4 Records of Special Protection Areas (SPA)  8.5 Records of Ramsar sites  8.6 Records of Ancient Woodlands  8.7 Records of Local Nature Reserves (LNR)	0 0 0 0 0 0	0 0 0 0 0	51-250 0 0 0 0 0	251-500 0 0 0 0 0 0	0 0 0 0 0 0	2000 1 0 0 0 1 1



Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000- 2000
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards	
9.1 What is the maximum risk of natural ground subsidence?	Moderate
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Moderate
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining	
10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No



### Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

#### 1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

#### 2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

### 3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

#### 4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

#### 5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

### 6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

### 7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

#### 8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

#### 9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

#### 10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

#### 11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

#### **Note: Maps**

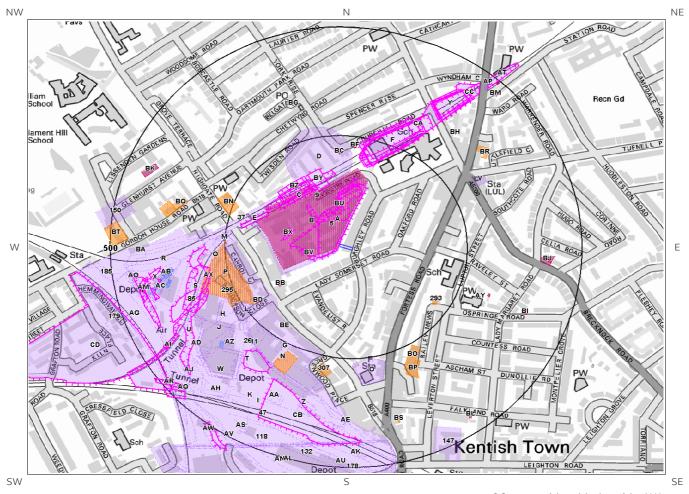
Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

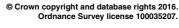
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.



# 1. Historical Land Use









# 1. Historical Industrial Sites

### 1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 186

ID	Distance [m]	Direction	Use	Date
1B	0	On Site	Electric Generating Station	1938
2A	1	W	Unspecified Heap	1958
3A	1	W	Unspecified Heap	1965
4B	2	W	Electric Generating Station	1920
5	7	W	Unspecified Heap	1938
6BU	54	N	Unspecified Heap	1949
7BV	60	SW	Unspecified Ground Workings	1920
8BW	66	N	Unspecified Ground Workings	1920
9	103	NW	Railway Sidings	1920
10BX	107	W	Unspecified Ground Workings	1920
11	112	N	Railway Sidings	1938
12D	130	N	Miniature Rifle Range	1938
13BY	131	N	Cuttings	1949
14C	135	NW	Tunnel	1958
15C	135	NW	Tunnel	1974
16C	135	NW	Tunnel	1965
17C	139	NW	Cuttings	1869
18C	139	NW	Cuttings	1879
19C	139	NW	Cuttings	1894
20C	143	NW	Cuttings	1920
21D	143	N	Miniature Rifle Range	1920
22BZ	150	NW	Cuttings	1949
23E	169	NW	Tunnel	1958
24E	169	NW	Tunnel	1974
25E	169	NW	Tunnel	1965
26	183	SW	Unspecified Depot	1974
27F	186	N	Cuttings	1894
28F	187	N	Cuttings	1938
29CA	193	N	Cuttings	1920
30F	196	N	Cuttings	1958
31F	201	N	Cuttings	1869
			<del>-</del>	



			LOC	ATION INTELLIGENCE
32F	201	N	Cuttings	1879
33G	201	SW	Bottling Stores	1949
34G	201	SW	Unspecified Commercial/Industrial	1965
35G	201	SW	Unspecified Commercial/Industrial	1958
36F	209	N	Cuttings	1949
37	211	W	Railway Station	1894
38H	220	SW	Unspecified Commercial/Industrial	1965
39H	220	SW	Locomotive Sheds	1949
401	220	SW	Railway Sidings	1965
41H	220	SW	Unspecified Commercial/Industrial	1958
421	220	SW	Railway Sidings	1958
43J	224	SW	Locomotive Sheds	1938
44P	228	SW	Railway Sidings	1920
45J	233	SW	Locomotive Sheds	1920
46M	234	W	Railway Station	1938
47	234	SW	Railway Sidings	1949
48K	234	SW	Railway Sidings	1879
49K	234	SW	Railway Sidings	1869
50L	241	SW	Railway Building	1869
51L	241	SW	Railway Building	1879
52M	242	W	Railway Station	1894
53M	242	W	Railway Station	1920
54M	246	W	Railway Station	1869
55M	246	W	Railway Station	1879
56N	248	SW	Bottling Stores	1920
57N	250	SW	Unspecified Stores	1938
580	252	S	Fire Station	1996
590	252	S	Fire Station	1974
60P	253	W	Railway Building	1920
610	254	S	Fire Station	1965
62K	256	SW	Railway Sidings	1920
63Q	265	W	Railway Building	1938
64T	269	SW	Unspecified Depot	1996
65R	271	W	Railway Sidings	1949
66Q	272	W	Railway Building	1920
67Q	280	W	Railway Building	1938
68R	283	W	Railway Sidings	1920
695	286	W	Cuttings	1894
70K	287	SW	Railway Sidings	1894
71K	287	SW	Unspecified Commercial/Industrial	1894
72R	290	W	Railway Sidings	1894
73AX	291	W	Chimney	1965



			LOCA	TION INTELLIGENCE
74AB	292	W	Railway Sidings	1958
75S	293	W	Unspecified Pit	1869
76S	293	W	Unspecified Pit	1879
77T	301	SW	Unspecified Heap	1894
78U	304	W	Unspecified Ground Workings	1869
79U	304	W	Unspecified Ground Workings	1879
80V	305	NE	Unspecified Station	1958
81V	305	NE	London Transport Station	1965
82V	305	NE	London Transport Station	1996
83V	305	NE	London Transport Station	1974
84W	315	SW	Railway Building	1894
85	323	W	Railway Sidings	1920
86W	325	SW	Unspecified Sheds	1869
87W	325	SW	Unspecified Sheds	1879
88CB	336	SW	Cuttings	1869
89X	346	W	Unspecified Depot	1965
90X	346	W	Unspecified Depot	1974
91Y	348	NE	Cuttings	1938
92Y	349	NE	Cuttings	1949
93Y	353	NE	Cuttings	1869
94Y	353	NE	Cuttings	1879
95Y	355	NE	Cuttings	1894
96Z	358	S	Railway Building	1965
97Z	358	S	Railway Building	1958
98Z	358	S	Railway Building	1949
99Z	362	S	Railway Building	1938
100AA	364	SW	Railway Building	1869
101AA	364	SW	Railway Building	1879
102AB	365	W	Unspecified Tanks	1938
103AA	366	SW	Railway Building	1894
104AB	369	W	Unspecified Tanks	1949
105Z	370	S	Railway Building	1920
106AB	375	W	Unspecified Tank	1920
107AC	377	W	Railway Building	1958
108AC	377	W	Unspecified Depot	1996
109AD	381	SW	Railway Building	1869
110AD	381	SW	Railway Building	1879
111AC	382	W	Railway Building	1938
112AC	387	W	Railway Building	1949
113AE	390	S	Railway Building	1949
114AB	393	W	Unspecified Ground Workings	1920
115AE	394	S	Railway Building	1938
116AE	398	S	Railway Building	1949
117AE	400	S	Railway Building	1920



			LOC	ATION INTELLIGENCE
118	402	SW	Railway Sidings	1974
119AE	404	S	Railway Building	1938
120AF	406	SW	Tunnel	1996
121AF	406	SW	Tunnel	1958
122AF	406	SW	Tunnel	1965
123AF	406	SW	Tunnel	1974
124AE	409	S	Railway Building	1920
125AH	423	SW	Railway Building	1949
126AM	425	W	Unspecified Ground Workings	1920
127AG	429	SW	Railway Sidings	1949
128AG	429	SW	Railway Sidings	1958
129AH	429	SW	Railway Building	1920
130CC	432	NE	Railway Building	1949
131AJ	433	SW	Railway Building	1949
132	434	S	Unspecified Depot	1974
133AG	436	SW	Railway Sidings	1920
134AI	436	SW	Unspecified Shaft	1996
135AI	436	SW	Unspecified Shaft	1974
136AI	437	SW	Unspecified Shaft	1965
137AJ	440	SW	Railway Building	1920
138AK	440	S	Railway Sidings	1920
139AK	440	S	Railway Sidings	1938
140AL	441	S	Railway Sidings	1882
141AL	442	S	Unspecified Works	1894
142AG	442	SW	Railway Sidings	1894
143AN	443	S	Railway Sidings	1894
144AM	443	W	Railway Buildings	1938
145AN	444	S	Railway Land	1911
146AK	444	S	Railway Sidings	1911
147	444	SE	Hospital	1949
148AO	448	W	Railway Building	1938
149AM	449	W	Railway Buildings	1949
150	451	W	Nursery	1894
151AM	453	W	Railway Buildings	1920
152AO	454	W	Railway Building	1958
153AO	458	W	Railway Building	1920
154AP	463	NE	Railway Building	1949
155AS	465	SW	Railway Building	1949
156AP	466	NE	Railway Building	1920
157AQ	467	SW	Railway Building	1938
158AK	467	S	Railway Building	1949
159AQ	468	SW	Tunnel	1965
160AR	468	SW	Tunnel	1996
161AR	468	SW	Tunnel	1958
162AR	468	SW	Tunnel	1974



			LO	CATION INTELLIGENCE
163AS	468	SW	Railway Building	1938
164AK	470	S	Railway Building	1920
165AT	471	NE	Cuttings	1869
166AT	471	NE	Cuttings	1879
167CD	474	SW	Brick Works	1894
168AQ	475	SW	Tunnel	1965
169AQ	475	SW	Tunnel	1974
170AQ	475	SW	Tunnel	1996
171AQ	475	SW	Tunnel	1958
172AN	475	S	Railway Sidings	1920
173AN	475	S	Railway Sidings	1938
174AS	476	SW	Railway Building	1920
175AL	477	S	Railway Sidings	1911
176AU	481	S	Railway Building	1965
177AU	481	S	Railway Building	1958
178	482	S	Railway Buildings	1949
179	484	SW	Unspecified Depot	1965
180AW	487	SW	Railway Sidings	1879
181AV	490	SW	Railway Buildings	1949
182AV	491	SW	Railway Building	1938
183AW	493	SW	Railway Sidings	1869
184AV	497	SW	Unspecified Ground Workings	1920
185	498	W	Coal Depot	1894
186AV	499	SW	Railway Building	1920

### 1.2 Additional Information - Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

ID	Distance (m)	Direction	Use	Date
187AX	295	W	Unspecified Tank	1915
188AY	299	E	Unspecified Tank	1981
189AY	299	E	Unspecified Tank	1982
190AY	299	E	Unspecified Tank	1991
191AY	299	E	Unspecified Tank	1975
192AZ	326	SW	Unspecified Tank	1952
193AZ	326	SW	Unspecified Tank	1952
194AZ	327	SW	Unspecified Tank	1936
195AZ	335	SW	Tanks	1896
196AB	366	W	Unspecified Tank	1952



				CATTOIT ITTELLIGETTOL
197AB	367	W	Unspecified Tank	1952
198AB	370	W	Tanks	1936
199AB	372	W	Unspecified Tank	1952
200AB	372	W	Unspecified Tank	1952
201AC	374	W	Tanks	1952
202AC	375	W	Tanks	1952
203AC	379	W	Unspecified Tank	1936
204X	382	W	Unspecified Tank	1936
205X	386	W	Tanks	1952
206X	387	W	Tanks	1952
207X	391	W	Unspecified Tank	1952
208X	392	W	Unspecified Tank	1952
209AM	408	W	Tanks	1952
210AM	409	W	Tanks	1952
211AM	412	W	Unspecified Tank	1936
212BA	432	W	Unspecified Tank	1952
213BA	433	W	Unspecified Tank	1952
214AS	456	SW	Unspecified Tank	1995
215AS	456	SW	Unspecified Tank	1992
216AS	456	SW	Unspecified Tank	1990
217AS	456	SW	Unspecified Tank	1990
218AS	456	SW	Unspecified Tank	1985
219AS	456	SW	Unspecified Tank	1991

### 1.3 Additional Information - Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

ID	Distance (m)	Direction	Use	Date
220B	5	W	Electric Generating Station	1915
221BB	156	SW	Electricity Substation	1995
222BB	156	SW	Electricity Substation	1973
223BB	157	SW	Electricity Substation	1981
224BB	157	SW	Electricity Substation	1981
225BB	157	SW	Electricity Substation	1991
226BC	207	N	Electricity Substation	1973
227BC	208	N	Electricity Substation	1981
228BC	208	N	Electricity Substation	1981
229BC	208	N	Electricity Substation	1991
230BC	209	N	Electricity Substation	1995
231BD	217	SW	Electricity Substation	1995

Report Reference: GS-2806159 Client Reference: 20120

17

73



				LOCATION INTELLIGENCE
232BD	218	SW	Electricity Substation	1973
233BD	219	SW	Electricity Substation	1981
234BD	219	SW	Electricity Substation	1981
235BD	219	SW	Electricity Substation	1991
236BE	219	SW	Electricity Substation	1995
237BE	219	SW	Electricity Substation	1981
238BE	219	SW	Electricity Substation	1981
239BE	219	SW	Electricity Substation	1991
240BE	220	SW	Electricity Substation	1973
241BF	223	N	Electricity Substation	1973
242BF	223	N	Electricity Substation	1981
243BF	223	N	Electricity Substation	1981
244BF	223	N	Electricity Substation	1991
245BF	225	N	Electricity Substation	1995
246AY	300	Е	Electricity Substation	1992
247AY	314	Е	Electricity Substation	1981
248AY	314	Е	Electricity Substation	1991
249AY	314	Е	Electricity Substation	1982
250AY	314	E	Electricity Substation	1975
251AY	315	E	Electricity Substation	1992
252BG	334	N	Electricity Substation	1975
253BG	335	N	Electricity Substation	1991
254BH	342	NE	Electricity Substation	1992
255BH	342	NE	Electricity Substation	1975
256BH	343	NE	Electricity Substation	1991
257BH	343	NE	Electricity Substation	1982
258BI	400	Е	Electricity Substation	1975
259BI	402	Е	Electricity Substation	1981
260BI	402	Е	Electricity Substation	1991
261BI	402	Е	Electricity Substation	1982
262BI	403	E	Electricity Substation	1992
263BJ	410	Е	Electricity Substation	1975
264BJ	410	Е	Electricity Substation	1952
265BJ	410	Е	Electricity Substation	1967
266BJ	410	Е	Electricity Substation	1992
267BJ	411	E	Electricity Substation	1952
268BJ	411	Е	Electricity Substation	1967
269BJ	419	Е	Electricity Substation	1970
270BJ	420	Е	Electricity Substation	1991
271BJ	420	Е	Electricity Substation	1982
272BK	433	NW	Electricity Substation	1952
273BK	433	NW	Electricity Substation	1952
274BL	455	SE	Electricity Substation	1977
275BL	456	SE	Electricity Substation	1995
276BL	456	SE	Electricity Substation	1991
277BM	469	NE	Electricity Substation	1984



278BM	469	NE	Electricity Substation	1988
279BM	469	NE	Electricity Substation	1991
280BM	469	NE	Electricity Substation	1999
281BM	471	NE	Electricity Substation	1968
282BM	471	NE	Electricity Substation	1977
283BM	471	NE	Electricity Substation	1968
284BM	473	NE	Electricity Substation	1970
285AP	490	NE	Electricity Substation	1991
286AP	490	NE	Electricity Substation	1988
287AP	490	NE	Electricity Substation	1984
288AP	490	NE	Electricity Substation	1999
289AP	490	NE	Electricity Substation	1968
290AP	490	NE	Electricity Substation	1977
291AP	491	NE	Electricity Substation	1968
292AP	492	NE	Electricity Substation	1970
·			·	

### 1.4 Additional Information - Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

Database searched and no data found.

### 1.5 Additional Information - Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary:

ID	Distance (m)	Direction	Use	Date
293	210	SE	Garage	1975
294P	216	SW	Transport Maintenance Sheds	1952
295	220	SW	Transport Maintenance Sheds	1952
296BN	237	W	Garage	1995
297BN	251	NW	Garage	1952
298BN	251	NW	Garage	1952
299BN	251	NW	Garage	1981
300BN	251	NW	Garage	1981
301BN	251	NW	Garage	1991

Report Reference: GS-2806159 Client Reference: 20120 0

34



			EOCA	THOM INTELLIGENCE
302BN	252	NW	Garage	1973
303BO	254	SE	Motor Body Factory	1952
304BO	254	SE	Motor Body Factory	1952
305N	266	SW	Garage	1952
306N	266	SW	Garage	1952
307	267	S	Coach Building Works	1952
308BP	287	SE	Garage	1952
309BP	287	SE	Garage	1967
310BP	288	SE	Garage	1952
311BP	288	SE	Garage	1963
312BP	289	SE	Garage	1970
313BQ	345	W	Garages	1952
314BQ	345	W	Garages	1952
315BR	350	NE	Engineering Workshops	1952
316BR	350	NE	Engineering Workshops	1952
317BR	356	NE	Garage	1952
318BQ	364	W	Garages	1952
319BQ	364	W	Garages	1952
320BR	365	NE	Garage	1952
321BS	396	S	Garage	1952
322BS	396	S	Garage	1952
323BT	459	W	Garage	1967
324BT	464	W	Garage	1952
325BT	464	W	Garage	1966
326BT	465	W	Garage	1952

#### 1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site:

ormation is

61

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
327A	1	W	Unspecified Heap	1958
328A	1	W	Unspecified Heap	1965
329A	7	W	Unspecified Heap	1938
330BU	54	N	Unspecified Heap	1949
331BV	60	SW Unspecified Ground Workings		1920
332BW	66	N Unspecified Ground Workings		1920
333BX	107	W Unspecified Ground Workings		1920
334BY	334BY 131		Cuttings	1949
335C	135	NW	Tunnel	1958
336C	336C 135		Tunnel	1974
337C	135	NW	Tunnel	1965



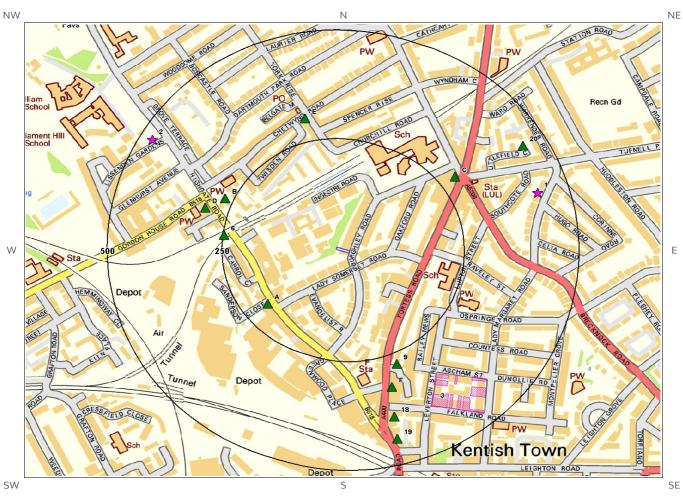
			LO	CATION INTELLIGENCE
338BZ	139	NW	Cuttings	1869
339BZ	139	NW	Cuttings	1879
340BZ	139	NW	Cuttings	1894
341BZ	143	NW	Cuttings	1920
342BZ	150	NW	Cuttings	1949
343E	169	NW	Tunnel	1974
344E	169	NW	Tunnel	1965
345E	169	NW	Tunnel	1958
346F	186	N	Cuttings	1894
347F	187	N	Cuttings	1938
348CA	193	N	Cuttings	1920
349F	196	N	Cuttings	1958
350F	201	N	Cuttings	1869
351F	201	N	Cuttings	1879
352F	209	N	Cuttings	1949
353S	286	W	Cuttings	1894
354S	293	W	Unspecified Pit	1869
355S	293	W	Unspecified Pit	1879
356T	301	SW	Unspecified Heap	1894
357U	304	W	Unspecified Ground Workings	1879
358U	304	W	Unspecified Ground Workings	1869
359CB	336	SW	Cuttings	1869
360Y	348	NE	Cuttings	1938
361Y	349	NE	Cuttings	1949
362CC	353	NE	Cuttings	1879
363Y	353	NE	Cuttings	1869
364Y	355	NE	Cuttings	1894
365X	393	W	Unspecified Ground Workings	1920
366AM	396	W	Water Body	1869
367AM	396	W	Water Body	1879
368AF	406	SW	Tunnel	1958
369AF	406	SW	Tunnel	1996
370AF	406	SW	Tunnel	1974
371AF	406	SW	Tunnel	1965
372AM	425	W	Unspecified Ground Workings	1920
373AI	436	SW	Unspecified Shaft	1974
374AI	436	SW	Unspecified Shaft	1996
375AI	437	SW	Unspecified Shaft	1965
376AR	468	SW	Tunnel	1958
377AR	468	SW	Tunnel	1965
378AR	468	SW	Tunnel	1996
379AR	468	SW	Tunnel	1974
380AT	471	NE	Cuttings	1879
	·		·	



381AT	471	NE	Cuttings	1869
382CD	474	SW	Brick Works	1894
383AQ	475	SW	Tunnel	1958
384AQ	475	SW	Tunnel	1996
385AQ	475	SW	Tunnel	1974
386AQ	475	SW	Tunnel	1965
387AV	497	SW	Unspecified Ground Workings	1920



# 2. Environmental Permits, Incidents and Registers Map



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RAS 3 & 4 Authorisations

Dangerous Substances (List 1)

Dangerous Substances (List 1)

Dangerous Substances (List 2)

Dangerous Substances (List 2)

Part A(1) Authorised Processes and Historic IPC Authorisations

Part A(2) and Part B Authorised Processes

COMAH / NIHHS Sites

Licenced Discharge Consents

Red List Discharge Consents

Red List Discharge Consents

Recorded Pollution Incident



## 2. Environmental Permits, **Incidents and Registers**

#### 2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the for information:	ollowing
2.1.1 Records of historic IPC Authorisations within 500m of the study site:	
	0
Database searched and no data found.	
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:	
	0
Database searched and no data found.	
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters 500m of the study site:	) within
	0
Database searched and no data found.	
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:	
	0
Database searched and no data found.	
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:	
2.1.3 Records of List 2 bungerous substance inventory sites within soom of the study site.	0
Database searched and no data found.	



#### 2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

17

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Def	tails
4A	197	SW	528726 185567	Address: J Murphy & Sons Ltd, 81 Highgate Road, NW5 1TS Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
5A	197	SW	528726 185567	Address: J Murphy & Sons Ltd, 81 Highgate Road, NW5 1TS Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
6	247	W	528631 185726	Address: M & A Coachworks, 135 Highgate Road, Kentish Town, London, NW5 1LE Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
7В	268	NW	528633 185810	Address: ASF Garage Ltd, 138 Highgate Road, London, NW5 1PB Process: Unloading of Petrol into Storage at Service Stations Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
8B	268	NW	528633 185810	Address: ASF Garage Ltd, 138-140 Highgate Road, London, NW5 1PB Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
9	277	S	529007 185429	Address: M & A Coachworks II, 1-36 Fortess Grove, Kentish Town, London, NW5 1LE Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
10C	285	NE	529134 185860	Address: Sun Dry Cleaners, 167 Fortess Road, NW5 2HR Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
11C	285	NE	529134 185860	Address: Sun Dry Cleaners, 167 Fortess Road, NW5 2HR Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
12D	300	W	528590 185788	Address: Perfect Dry Cleaners, 151 Highgate Road, NW5 1JL Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
13D	300	W	528590 185788	Address: Perfect Dry Cleaners, 151 Highgate Road, NW5 1JL Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

Report Reference: GS-2806159

Client Reference: 20120



					LOCATION INTELLIGENCE			
ID	Distance (m)	Direction	NGR	Details				
14E	302	N	528807 185994	Address: The Choice Dry Cleaners, 62a Chetwynd Road, London, NW5 1DJ Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified			
15E	302	N	528807 185994	Address: The Choice Dry Cleaners , 62 Chetwynd Road, NW5 1DJ Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified			
16F	324	S	528997 185376	Address: Perk Clean, 20 Fortess Road, Kentish Town, NW5 2HB Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified			
17F	324	S	528997 185376	Address: Perk Clean, 20 Fortess Road, Kentish Town, NW5 2HB Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified			
18	391	S	529002 185308	Address: Zappeo Dry Cleaners, 310 Kentish Town Road, NW5 2TH Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified			
19	442	S	529008 185257	Address: Zappeo, 310 Kentish Town Road, NW5 1TH Process: Dry Cleaning Status: Revoked Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified			
20	447	NE	529282 185931	Address: Esso Whittingdon, Junction Rd, London, N19 5RE Process: Petrol Vapour Recovery Process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified			

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.



#### 2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

0

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

#### 2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

0

Database searched and no data found.

#### 2.3 Environment Agency Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

2

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Det	tails
1	430	E	529314 185825	Incident Date: 09-Jul-2002 Incident Identification: 90410 Pollutant: Contaminated Water Pollutant Description: Firefighting Run- Off	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
2	473	NW	528474 185947	Incident Date: 22-Aug-2001 Incident Identification: 25942 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)



#### 2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

#### 2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

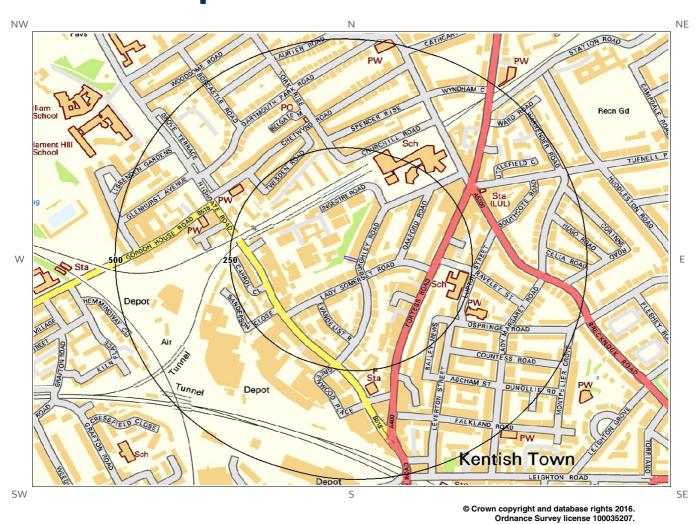
1

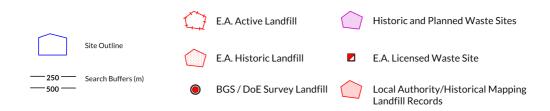
The following records are represented as polygons on the Environmental Permits, Incidents and Registers Map:

ID	Distanc e (m)	Direction	NGR	Description	Location	Category	Year Identified
3	335	SE	529101 185346	Former metal plating works. Lead and Cadmium potential contaminants. Remediated.	8 Ascham Street, 15- 23, 27, 33, 37-41 Falkland Road, 15a, 25-29, 35 Lady Margeret Road, 42, 44, 48 Leverton Street, NW5 2PU.	Contaminated Land	2011



# 3. Landfill and Other Waste Sites Map







## 3. Landfill and Other Waste Sites

3.1 Landfill Sites	
3.1.1 Records from Environment Agency landfill data within 1000m of the study site:	
	0
Database searched and no data found.	
3.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:	
	0
Database searched and no data found.	
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:	
	0
Database searched and no data found.	
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the site:	he study
	0
Database searched and no data found.	
3.2 Other Waste Sites	
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:	
	0
Database searched and no data found.	



#### 3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

3

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

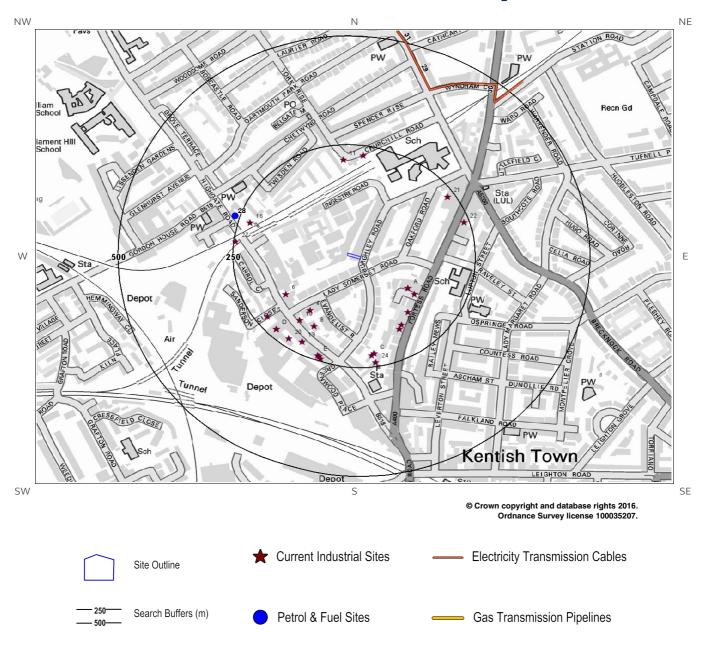
ID	Distance (m)	Direction	NGR	Details			
Not shown	572	S	528740 185138	Site Address: Camden London Borough Council, Recycling Centre, Regis Road, Kentish Town, London, NW5 3EP Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LWL001 EPR reference: EA/EPR/GB3230DW/T001 Operator: LondonWaste Ltd Waste Management licence No: 80349 Annual Tonnage: 7793.0	Issue Date: 10/12/1996 Effective Date: 11/05/2012 Modified: 25/01/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Regis Road Recycling Centre Correspondence Address: -, -		
Not shown	572	S	528740 185138	Site Address: Camden London Borough Council, Recycling Centre, Regis Road, Kentish Town, London, NW5 3EP Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LWL001 EPR reference: EA/EPR/GB3230DW/T001 Operator: Londonwaste Limited Waste Management licence No: 80349 Annual Tonnage: 7793.0	Issue Date: 10/12/1996 Effective Date: 11/05/2012 Modified: 25/01/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Regis Road Recycling Centre Correspondence Address: -, -		
Not shown	572	S	528740 185138	Site Address: Camden London Borough Council, Recycling Centre, Regis Road, Kentish Town, London, NW5 3EP Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAM001 EPR reference: EA/EPR/DP3091NK/V003 Operator: Camden London Borough Council Waste Management licence No: 80349 Annual Tonnage: 7793.0	Issue Date: 10/12/1996 Effective Date: - Modified: 25/01/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Regis Road Recycling Centre Correspondence Address: -, -		

Report Reference: GS-2806159 Client Reference: 20120

31



## 4. Current Land Use Map





## 4. Current Land Uses

#### **4.1 Current Industrial Data**

Records of potentially contaminative industrial sites within 250m of the study site:

27

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Directio n	Company	NGR	Address	Activity	Category
1A	124	SE	Skelly & Couch	529007 185619	79, Fortess Road, London, NW5 1AG	Civil Engineers	Engineering Services
2A	124	SE	T S E Ltd	529007 185619	79, Fortess Road, London, NW5 1AG	Textiles, Fabrics, Silk and Machinery	Industrial Products
3	144	SE	Kudos Records Ltd	529021 185605	77, Fortess Road, London, NW5 1AG	Distribution and Haulage	Transport, Storage and Delivery
4	150	SW	Don Hobson Electrical	528794 185569	49, Lady Somerset Road, London, NW5 1TY	Electrical and Electronic Engineers	Engineering Services
5	160	SE	Lakis Meat Products	529007 185564	61, Fortess Road, London, NW5 1AD	Fish, Meat and Poultry Products	Foodstuffs
6	162	SW	Electricity Sub Station	528741 185606	NW5	Electrical Features	Infrastructure and Facilities
7B	176	SE	Cash 4 Clothes	528993 185535	49-51, Fortess Road, London, NW5 1AD	Rag Merchants	Recycling Services
8	179	SW	Works	528803 185532	NW5	Unspecified Works Or Factories	Industrial Features
9B	181	SE	Northern Lights	528988 185526	43-45, Fortess Road, London, NW5 1AD	Electrical Equipment Repair and Servicing	Repair and Servicing
10	182	SW	Storage Kentish Town	528771 185545	70a, Highgate Road, London, NW5 1PA	Container and Storage	Transport, Storage and Delivery
11	215	N	Electricity Sub Station	528867 185915	NW5	Electrical Features	Infrastructure and Facilities
12C	219	S	Works	528934 185469	NW5	Unspecified Works Or Factories	Industrial Features
13	221	SW	Works	528777 185497	NW5	Unspecified Works Or Factories	Industrial Features
14C	222	S	Court Davis Joinery Ltd	528928 185465	30a, Highgate Road, London, NW5 1NS	General Construction Supplies	Industrial Products
15	224	SW	Electricity Sub Station	528701 185555	NW5	Electrical Features	Infrastructure and Facilities
16	225	W	Darcars Ltd	528663 185769	132-134, Highgate Road, London, NW5 1PB	Vehicle Repair, Testing and Servicing	Repair and Servicing
17	227	N	Electricity Sub Station	528910 185925	NW5	Electrical Features	Infrastructure and Facilities
18D	229	SW	Sound Network	528721 185526	430 Highgate Studios, 53- 79 Highgate Road, London, NW5 1TL	Electronic Equipment	Industrial Products
19D	230	SW	Reproductive Health Matters	528721 185525	Highgate Studios 53-79, Highgate Road, London, NW5 1TL	Published Goods	Industrial Products



ID	Distance (m)	Directio n	Company	NGR	Address	Activity	Category
20	230	SW	Electricity Sub Station	528748 185504	NW5	Electrical Features	Infrastructure and Facilities
21	235	NE	Warehouse	529094 185830	NW5	Container and Storage	Transport, Storage and Delivery
22	238	Е	Harrington & Squires Ltd	529129 185771	136, Fortess Road, London, NW5 2HP	Published Goods	Industrial Products
23E	239	S	Lewis Scaffolding	528810 185465	Limton House, London, NW5 1AD	Construction and Tool Hire	Hire Services
24	239	S	Works	528937 185449	NW5	Unspecified Works Or Factories	Industrial Features
25E	240	S	Damson Media Ltd	528813 185462	Linton House 39-51, Highgate Road, London, NW5 1RT	Published Goods	Industrial Products
26E	244	S	Works	528817 185457	NW5	Unspecified Works Or Factories	Industrial Features
27	247	W	M & A Coachworks	528631 185726	135, Highgate Road, London, NW5 1LE	Vehicle Repair, Testing and Servicing	Repair and Servicing

#### 4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

1

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Directio n	NGR	Company	Address	LPG	Status
28	261	W	528631 185786	Pace	Parliament Hill Service Station, 138-140, Highgate Road, Highgate Road, Kentish Town, London, Greater London, NW5 1PB	No	Open

Report Reference: GS-2806159 Client Reference: 20120

34



3

#### 4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

The following Underground Electricity Transmission Cable records are represented as linear features on the Current Land Use map:

ID	Distanc e (m)	Direction		Details
29	414	N	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): 275 Year of installation: - Cable in tunnel: -
30	461	NE	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): 275 Year of installation: - Cable in tunnel: -
31	494	N	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): 275 Year of installation: - Cable in tunnel: -

#### 4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site:

Database searched and no data found.

Report Reference: GS-2806159 Client Reference: 20120

35

0



## 5. Geology

#### 5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

#### 5.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

#### 5.3 Bedrock and Solid Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LC-CLSISA	LONDON CLAY FORMATION	CLAY, SILT AND SAND

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)



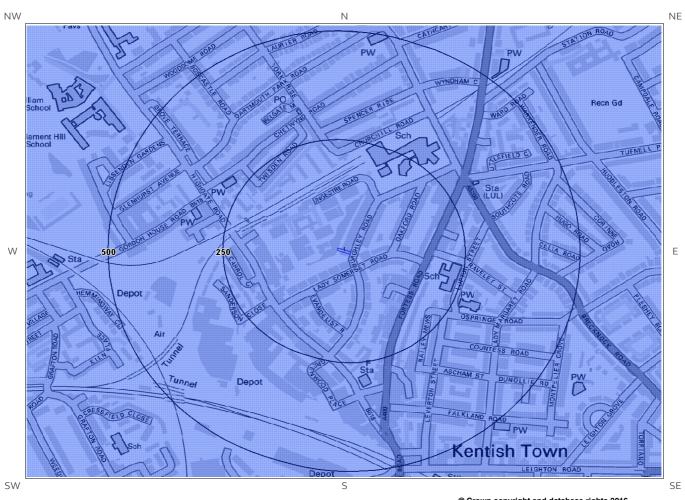
## 6 Hydrogeology and Hydrology 6a. Aquifer Within Superficial Geology

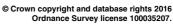






# 6b. Aquifer Within Bedrock Geology and Abstraction Licenses

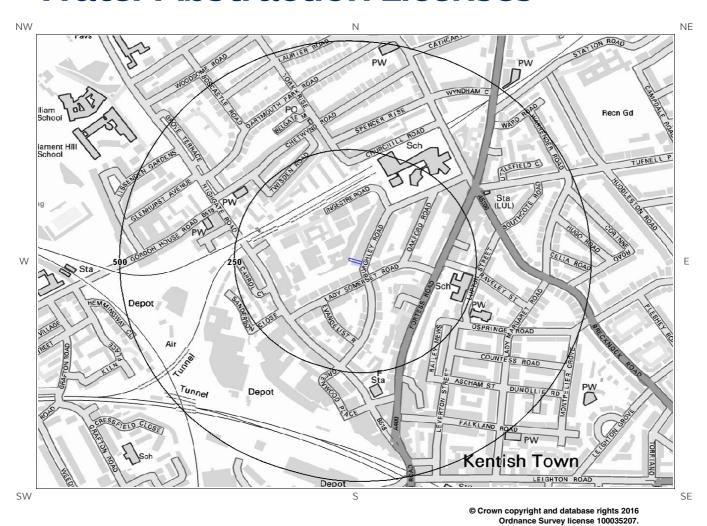


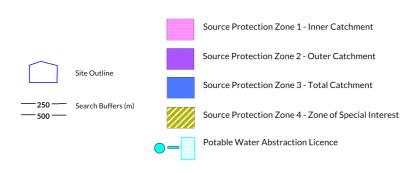






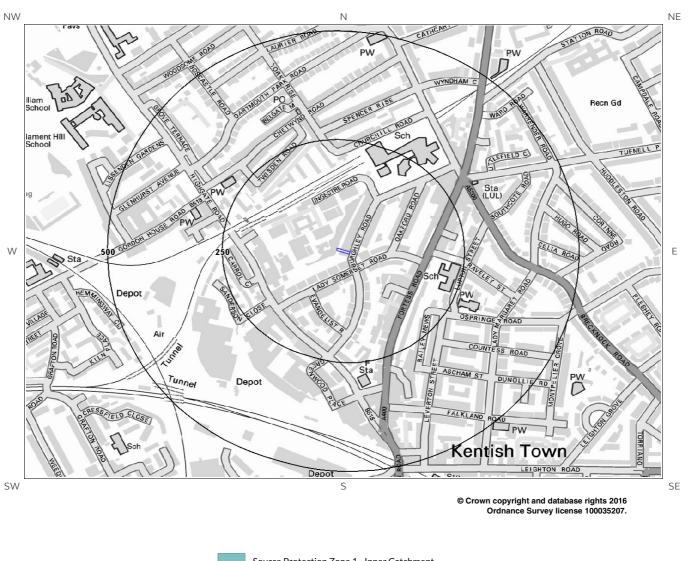
## 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses







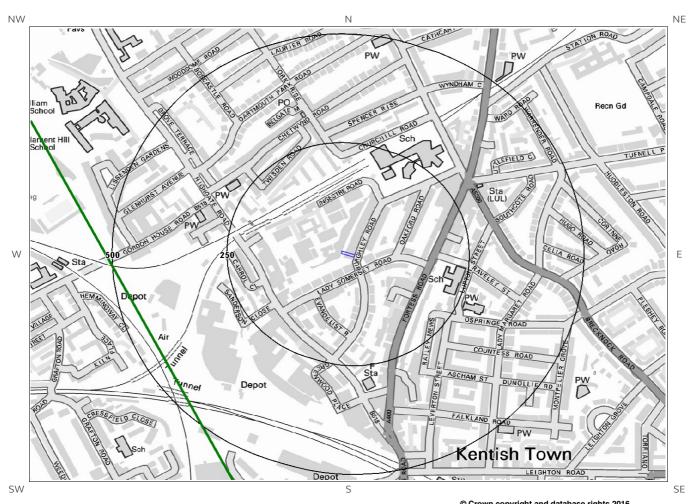
# 6d. Hydrogeology – Source Protection Zones within confined aquifer

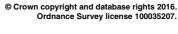


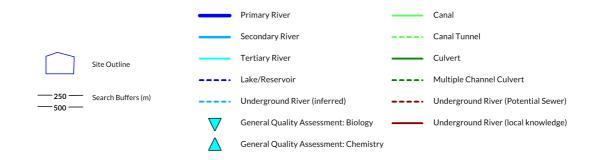




## 6e. Hydrology – Detailed River Network and River Quality









## 6. Hydrogeology and Hydrology

#### **6.1 Aquifer within Superficial Deposits**

Are there records of strata classification within the superficial geology at or in proximity to the property?

Database searched and no data found.

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviroinsight User Guide.

#### **6.2 Aquifer within Bedrock Deposits**

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviroinsight User Guide.

The following aguifer records are shown on the Aguifer within Bedrock Geology Map (6b):

ID	Distanc e (m)	Direction	Designation	Description
1	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

#### **6.3 Groundwater Abstraction Licences**

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distanc e (m)	Direction	NGR	Det	ails
Not shown	991	S	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Process Water Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m³): 94506 Max Daily Volume (m³): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:



					LOCATION INTELLIGENCE
ID	Distanc e (m)	Direction	NGR	Deta	ils
Not shown	991	S	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m³): 94506 Max Daily Volume (m³): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:
Not shown	991	S	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Laundry Use Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m³): 94506 Max Daily Volume (m³): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:
Not shown	991	S	528800 184700	Status: Active Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED	Annual Volume (m³): 17997 Max Daily Volume (m³): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/5/2012 Version End Date:
Not shown	991	S	528800 184700	Status: Active Licence No: 28/39/39/0091 Details: Process Water Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED	Annual Volume (m³): 17997 Max Daily Volume (m³): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/5/2012 Version End Date:
Not shown	1935	SE	529920 184040	Status: Historical Licence No: 28/39/39/0222 Details: General Use Relating To Secondary Category (High Loss) Direct Source: Thames Groundwater Point: Kings Cross Concrete Plant-borehole Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD	Annual Volume (m³): 55200 Max Daily Volume (m³): 200 Original Application No: GEN/39/ Original Start Date: 31/8/2006 Expiry Date: 31/3/2010 Issue No: 1 Version Start Date: 31/8/2006 Version End Date:
Not shown	1935	SE	529920 184040	Status: Active Licence No: TH/039/0039/027 Details: General Use Relating To Secondary Category (High Loss) Direct Source: Thames Groundwater Point: Kings Cross Concrete Plant-borehole Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD	Annual Volume (m³): 33400 Max Daily Volume (m³): 200 Original Application No: NPS/WR/011609 Original Start Date: 21/4/2010 Expiry Date: 31/3/2019 Issue No: 2 Version Start Date: 13/8/2012 Version End Date:



#### **6.4 Surface Water Abstraction Licences**

Are there any Surface Water Abstraction Licences within 2000m of the study site?

Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1714	S	528500 184020	Status: Active Licence No: 28/39/39/0164 Details: Non-Evaporative Cooling Direct Source: Thames Surface Water - Non Tidal Point: Southampton Bridge, London, Nw8 - Regents Canal Data Type: Point Name: Canal and River Trust	Annual Volume (m³): 7010000  Max Daily Volume (m³): 19520  Application No: - Original Start Date: 18/7/1980  Expiry Date: - Issue No: 101  Version Start Date: 17/12/2007  Version End Date:
Not shown	1716	S	528490 184020	Status: Historical Licence No: 28/39/39/0173 Details: Non-Evaporative Cooling Direct Source: Thames Surface Water - Non Tidal Point: Oval Road, Camden - Grand Union Regents Canal Data Type: Point Name: BRITISH WATERWAYS BOARD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 8/12/1994 Expiry Date: - Issue No: 100 Version Start Date: 8/12/1994 Version End Date:

#### **6.5 Potable Water Abstraction Licences**

Are there any Potable Water Abstraction Licences within 2000m of the study site?

Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distanc e (m)	Direction	NGR	Deta	ails
Not shown	991	S	528800 184700	Status: Active Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED	Annual Volume (m³): 17997 Max Daily Volume (m³): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:
Not shown	991	S	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m³): 94506 Max Daily Volume (m³): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:

Report Reference: GS-2806159 Client Reference: 20120

44



#### **6.6 Source Protection Zones**

Are there any Source Protection Zones within 500m of the study site?	No
Database searched and no data found.	
6.7 Source Protection Zones within Confined Aquifer	
Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? Historically, Source Protection Zone maps have been focused on regulation of activities which occur near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increas interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.	ed
Database searched and no data found.	
6.8 Groundwater Vulnerability and Soil Leaching Potential	
Is there any Environment Agency information on groundwater vulnerability and soil leaching potenti within 500m of the study site?	al No
Database searched and no data found.	
6.9 River Quality	
Is there any Environment Agency information on river quality within 1500m of the study site?	No
6.9.1 Biological Quality:	
Database searched and no data found.	
6.9.2 Chemical Quality:	
Database searched and no data found	



#### **6.10 Detailed River Network**

Are there any Detailed River Network entries within 500m of the study site?

Yes

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distanc e (m)	Direction		Details
1	455	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined

#### **6.11 Surface Water Features**

Are there any surface water features within 250m of the study site?

Yes

The following surface water records are not represented on mapping:

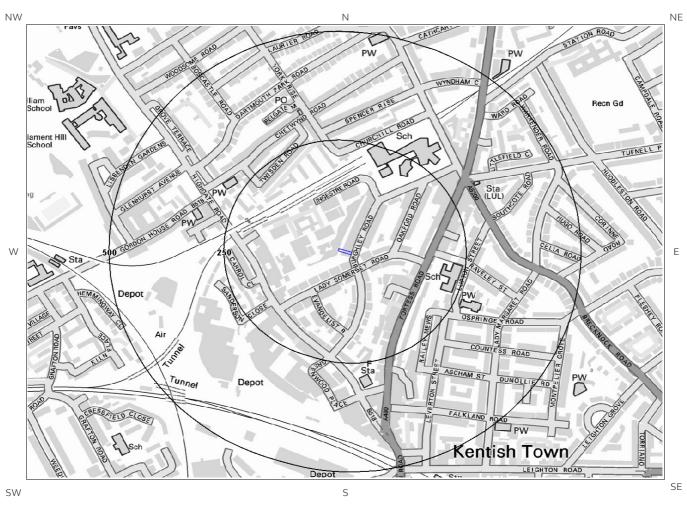
N
N

Report Reference: GS-2806159 Client Reference: 20120

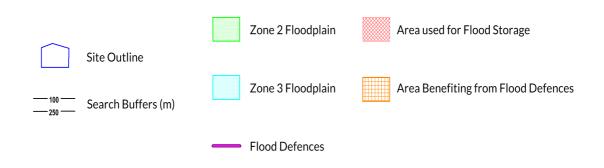
46



## 7a. Environment Agency Flood Map for Planning (from rivers and the sea)

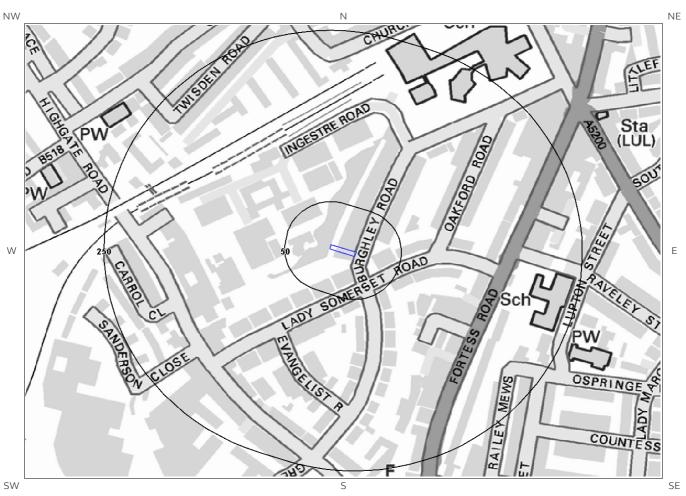


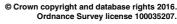
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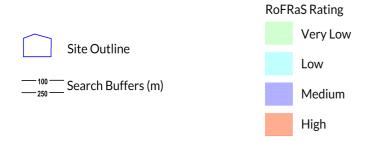




# 7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map









## 7 Flooding

#### 7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency Zone 2 floodplain?

No

Environment Agency Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

#### 7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency Zone 3 floodplain?

No

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a - Flood Map for Planning.

Database searched and no data found.

#### 7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite?

Very Low

The Environment Agency RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

#### 7.4 Flood Defences

Are there any Flood Defences within 250m of the study site?

Database searched and no data found.

No

#### 7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site?

No



#### 7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

#### 7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site?

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

#### 7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result?

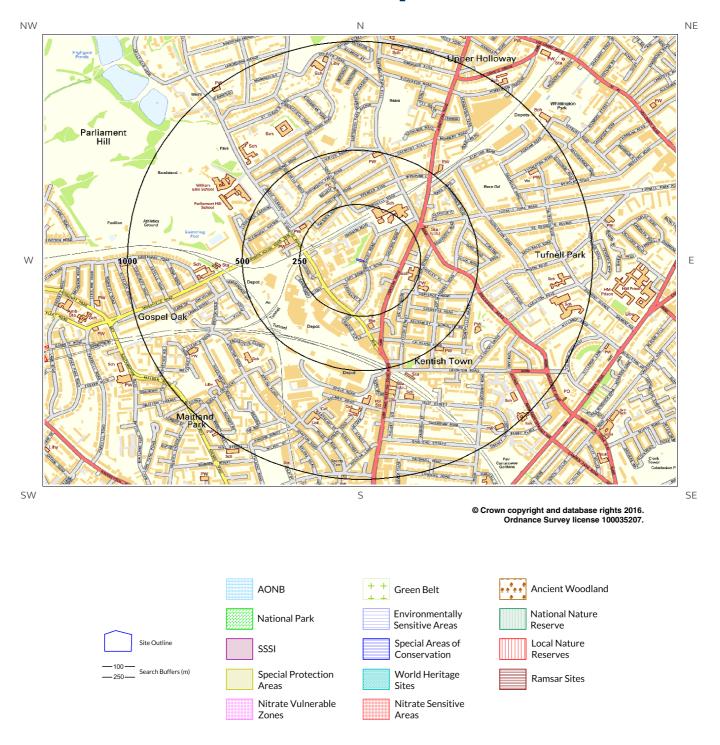
Not Applicable

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.



# 8. Designated Environmentally Sensitive Sites Map





## 8. Designated Environmentally Sensitive Sites

Presen	nce of I	Designated	Environmentally Sensitive Sites within 2000m of the study site?	Yes
8.1 Resite:	ecord	ls of Sites	s of Special Scientific Interest (SSSI) within 2000m of the stud	ly
				1
			Special Scientific Interest (SSSI) records provided by Natural England/I presented as polygons on the Designated Environmentally Sensitive Sites M	
113	stance (m)	Direction	SSSI Name Data Sour	ce
Not ,	1962	NW	Hampstead Heath Woods Natural Eng	land
0.2.0		<b>f</b> NI-4:	in a li Nichara December (NINID) anithin 2000 and the abanda cite	
8.2 R	ecoro	is of inati	ional Nature Reserves (NNR) within 2000m of the study site:	
			Database searched and no data found.	0
			Database searched and no data found.	
8.3 Re	ecord	ls of Spec	cial Areas of Conservation (SAC) within 2000m of the study si	te:
				0
			Database searched and no data found.	
8.4 Re	ecord	ls of Spec	cial Protection Areas (SPA) within 2000m of the study site:	
				0
			Database searched and no data found.	
8.5 Re	ecord	ls of Ram	nsar sites within 2000m of the study site:	
				0

Database searched and no data found.



#### 8.6 Records of Ancient Woodland within 2000m of the study site:

1

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1967	NW	UNKNOWN	Ancient and Semi-Natural Woodland

#### 8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

1

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
2	1401	W	Belsize Wood	Natural England

#### 8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

#### 8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

## 8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.



#### 8.11 Records of National Parks (NP) within 2000m of the study site:

	Database searched and no data found.
3.12 Records of Niti	rate Sensitive Areas within 2000m of the study site:
	Database searched and no data found.
8.13 Records of Niti	rate Vulnerable Zones within 2000m of the study site:
	Database searched and no data found.
8.14 Records of Gre	en Belt land within 2000m of the study site:



## 9. Natural Hazards Findings

#### 9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure GeoInsight**, available from **our website**. The following information has been found:

#### 9.1.1 Shrink Swell

What is the maximum Shrink-Swell\*\* hazard rating identified on the study site?

Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

#### Hazard

Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

#### 9.1.2 Landslides

What is the maximum Landslide\* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

#### Hazard

Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

#### 9.1.3 Soluble Rocks

What is the maximum Soluble Rocks\* hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

#### Hazard

Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

<sup>\*</sup> This indicates an automatically generated 50m buffer and site.



#### 9.1.4 Compressible Ground

What is the maximum Compressible Ground\* hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

#### Hazard

No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

#### 9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks\* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

#### Hazard

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

#### 9.1.6 Running Sand

What is the maximum Running Sand\*  $^*$  hazard rating identified on the study site?

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

#### Hazard

No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

#### 9.2 Radon

#### 9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

Report Reference: GS-2806159 Client Reference: 20120

56

<sup>\*</sup> This indicates an automatically generated 50m buffer and site.



#### 9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing

ones as described in publication BR211 by the Building Research Establishment?

No radon protective measures are necessary.



## 10. Mining

#### 10.1 Coal Mining

Are there any coal mining areas within 75m of the study site?

No

Database searched and no data found.

#### 10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary?

No

Database searched and no data found.

#### **10.3 Brine Affected Areas**

Are there any brine affected areas within 75m of the study site? Guidance: No Guidance Required.

No



### **Contact Details**

#### Groundsure Helpline

Telephone: 08444 159 000 info@groundsure.com



LOCATION INTELLIGENCE

**Geological Survey** 

NATURAL ENVIRONMENT RESEARCH COUNCIL

#### **British Geological Survey Enquiries**

Kingsley Dunham Centre Keyworth, Nottingham NG12 5GG Tel: 0115 936 3143. Fax: 0115 936 3276. Email:

#### Web:www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries:

#### enquiries@bgs.ac.uk

#### **Environment Agency**

National Customer Contact Centre, PO Box 544 Rotherham, S60 1BY Tel: 08708 506 506

Web:www.environment-agency.gov.uk
Email:enquiries@environment-agency.gov.uk

#### **Public Health England**

Public information access office Public Health England, Wellington House 133-155 Waterloo Road, London, SE1 8UG www.gov.uk/phe

Email:enquiries@phe.gov.uk Main switchboard: 020 7654 8000



**British** 

### Public Health England

#### The Coal Authority

200 Lichfield Lane Mansfield Notts NG18 4RG Tel: 0345 7626 848 DX 716176 Mansfield 5

www.coal.gov.uk



#### Ordnance Survey

Adanac Drive, Southampton SO16 0AS Tel: 08456 050505



#### **Local Authority**

Authority: London Borough of Camden Phone: 020 7974 4444 Web: http://www.camden.gov.uk/ Address: Camden Town Hall, Judd Street, London, WC1H 9JE

#### **Gemapping PLC**

Virginia Villas, High Street, Hartley Witney, Hampshire RG27 8NW Tel: 01252 845444





Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data

PointX © Database Right/Copyright, Thomson Directories Limited © Copyright Link Interchange Network Limited © Database Right/Copyright and Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028]. This report has been prepared in accordance with the Groundsure Ltd standard Terms and Conditions of business for work of this nature.

#### **Standard Terms and Conditions**

#### 1 Definitions

In these terms and conditions unless the context otherwise requires:

"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.

"Client" means the party or parties entering into a Contract with Groundsure.

"Commercial" means any building or property which is not Residential.

"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by Groundsure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

**"Support Services"** means Support Services provided by Groundsure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

**"Contract"** means the contract between Groundsure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

"Third Party Data Provider" means any third party providing Third Party Content to Groundsure.

"Data Reports" means reports comprising factual data with no accompanying interpretation.

"Fees" has the meaning set out in clause 5.1.

"Groundsure" means Groundsure Limited, a company registered in England and Wales under number 03421028.

**"Groundsure Materials"** means all materials prepared by Groundsure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.

"Order" means an electronic, written or other order form submitted by the Client requesting Services from Groundsure in respect of a specified Site.

"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 OAS, UK.

**"Order Website"** means the online platform through which Orders may be placed by the Client and accepted by Groundsure.

**"Report"** means a Risk Screening Report or Data Report for Commercial or Residential property.

 $\mbox{\bf ``Residential''}$  means any building or property used as or intended to be used as a single dwelling.

"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by Groundsure.

**"Services"** means any Report, Mapping and/or Support Services which Groundsure has agreed to provide by accepting an Order pursuant to clause 2.6.

"Site" means the area of land in respect of which the Client has requested Groundsure to provide the Services.

**"Third Party Content"** means data, database information or other information which is provided to Groundsure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from Groundsure and on the website (www.Groundsure.com) and forming part of this Contract.

#### 2 Scope of Services, terms and conditions, requests for insurance and quotations

- 2.1 Groundsure agrees to provide the Services in accordance with the Contract.
- $2.2\ \mbox{Groundsure}$  shall exercise reasonable skill and care in the provision of the Services.
- 2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of Groundsure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, Groundsure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and Groundsure will have no liability therefor. In addition you acknowledge and agree that Groundsure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 Groundsure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by Groundsure. Groundsure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by Groundsure. Groundsure's acceptance of an Order shall be binding only when made in writing and signed by Groundsure's authorised representative or when accepted through the Order Website.

#### 3 The Client's obligations

3.1The Client shall comply with the terms of this Contract and

- (i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and
- (ii) be liable to Groundsure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to Groundsure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as Groundsure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable Groundsure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the Groundsure Materials, or use the Groundsure Materials in a manner for which they were not intended. The Client may make the Groundsure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that Groundsure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

#### 4 Reliance

4.1The Client acknowledges that the Services provided by Groundsure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by Groundsure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(i) the Beneficiary,

(ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),

(iv) the first purchaser or first tenant of the Site, and

(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by Groundsure. Any party considering such Reports and Services does so at their own risk.

#### 5 Fees and Disbursements

5.1Groundsure shall charge and the Client shall pay fees at the rate and

frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by Groundsure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

- 5.2 The Client shall pay all outstanding Fees to Groundsure in full without deduction, counterclaim or set off within 30 days of the date of Groundsure's invoice or such other period as may be agreed in writing between Groundsure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.
- 5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of Groundsure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

#### 6 Intellectual Property and Confidentiality

#### 6.1 Subject to

- (i) full payment of all relevant Fees and
- (ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the Groundsure Materials.
- 6.2 All Intellectual Property in the Groundsure Materials are and shall remain owned by Groundsure or Groundsure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.
- 6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.
- 6.4 The Client shall, and shall procure that any recipients of the Groundsure Materials shall:
- (i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to Groundsure or any third party from the Services;
- (ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;
- (iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);
- (iv) not combine the Services with or incorporate such Services into any other information data or service;
- (v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);
- (vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and
- (vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,
- 6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the Groundsure Materials in order to advise the Beneficiary in a professional capacity. However, Groundsure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.
- 6.6 The Client shall procure that any person to whom the Services are made available shall notify Groundsure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

#### 7.Liability: Particular Attention Should Be Paid To This

- 7.1 This Clause 7 sets out the entire liability of Groundsure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:
  - (i) any breach of contract, including any deliberate breach of the Contract by Groundsure or its employees, agents or

subcontractors;

- (ii) any use made of the Reports, Services, Materials or any part of them; and
- (iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.
- 7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.
- 7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.
- 7.4 Groundsure shall not be liable for
  - (i) loss of profits;
  - (ii) loss of business;
  - (iii) depletion of goodwill and/or similar losses;
  - (iv) loss of anticipated savings;
  - (v) loss of goods;
  - (vi) loss of contract;
  - (vii) loss of use;
  - (viii) loss or corruption of data or information;
  - (ix) business interruption;
- (x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;
- (xi) loss or damage that arise as a result of the use of all or part of the Groundsure Materials in breach of the Contract;
- (xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the Groundsure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;
- $\mbox{(\sc xiii)}$  loss or damage to a computer, software, modem, telephone or other property; and
- (xiv) loss or damage caused by a delay or loss of use of Groundsure's internet ordering service.
- 7.5 Groundsure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.
- 7.6 Groundsure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of Groundsure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against Groundsure in relation to the Services or other matters arising pursuant to the Contract.

#### 8 Groundsure's right to suspend or terminate

- 8.1 If Groundsure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, Groundsure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.
- 8.2 Groundsure shall be entitled to terminate the Contract immediately on written notice in the event that:
- (i) the Client fails to pay any sum due to Groundsure within 30 days of the Payment Date; or
- (ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or
- (iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or
- (iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

#### 9. Client's Right to Terminate and Suspend

- 9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.
- 9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

- (i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon Groundsure's acceptance of the Order; and
- (ii) the Reports and/or Mapping provided under this Contract are
  - (a) supplied to the Client's specification(s) and in any event  $% \left( x\right) =\left( x\right) +\left( x\right) +\left($
  - (b) by their nature cannot be returned.

#### 10 Consequences of Withdrawal, Termination or Suspension

- 10.1 Upon termination of the Contract:
- (i) Groundsure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in Groundsure's possession or control; and
- (ii) the Client shall pay to Groundsure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay Groundsure any additional costs incurred in relation to the termination or suspension of the Contract.

#### 11 Anti-Bribery

- 11.1 The Client warrants that it shall:
- (i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;
- (ii) comply with such of Groundsure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and
- (iii) promptly report to Groundsure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.
- 11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

#### 12 General

- 12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.
- 12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through Groundsure.
- 12.3 Groundsure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of Groundsure.
- 12.4 No failure on the part of Groundsure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.
- 12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.
- 12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.
- 12.7 Groundsure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:
- (i) the Client or Beneficiary's failure to provide facilities, access or information:
  - (ii) fire, storm, flood, tempest or epidemic;
  - (iii) Acts of God or the public enemy;
  - (iv) riot, civil commotion or war;
  - (v) strikes, labour disputes or industrial action;
  - (vi) acts or regulations of any governmental or other agency;
- (vii) suspension or delay of services at public registries by Third Party Data Providers;
  - (viii) changes in law; or
  - (ix) any other reason beyond Groundsure's reasonable control.

In the event that Groundsure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then Groundsure shall be entitled to terminate this Contract immediately on written notice to the Client.

- 12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.
- 12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.
- 12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.
- 12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.
- 12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.
- 12.13 Groundsure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.
- 12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at Groundsure who will respond in a timely manner. In the event you are not satisfied with Groundsure's complaints handling process or you are unable to resolve the complaint, at your discretion you may refer the complaint to The Property Ombudsman Scheme at the following URL/email: website www.tpos.co.uk or email: admin@tpos.co.uk
- 12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law. © Groundsure Limited June 2013