



**H Fraser**  
**CONSULTING**  
CONTAMINATED LAND  
AND HYDROGEOLOGY

## **Basement Impact Assessment: Groundwater** **158 Iverson Road, NW6 2HH**

Prepared for: Ground and Water Limited  
15 Bow Street  
Alton  
Hampshire  
GU34 1NY

Date: 26/05/2016

Status: Final

Reference: 30137R1v2

© H Fraser Consulting Ltd 2016

Prepared by: H Fraser Consulting Ltd





**H Fraser**  
**CONSULTING**  
CONTAMINATED LAND  
AND HYDROGEOLOGY

---

Copyright of this Report is vested in H Fraser Consulting Ltd and no part of it may be copied or reproduced by any means without prior written permission from H Fraser Consulting Ltd. If you have received this Report in error, please destroy all copies in your possession and control and notify H Fraser Consulting Ltd.

This report has been prepared by H Fraser Consulting Ltd, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client, and is provided by H Fraser Consulting Ltd solely for the use of its client.

The advice and opinions in this report should be read and relied on only in the context of the report as a whole, taking account of the terms of reference agreed with the client. The findings are based on the information made available to H Fraser Consulting at the date of the report (and will have been assumed to be correct) and on current UK standards, codes, technology and practices as at that time. They do not purport to include any manner of legal advice or opinion. New information or changes in conditions and regulatory requirements may occur in future, which will change the conclusions presented here.

This report is confidential to the client. Unless otherwise agreed in writing by H Fraser Consulting Ltd, no other party may use, make use of or rely on the contents of the report. No liability is accepted by H Fraser Consulting Ltd for any use of this report, other than for the purposes for which it was originally prepared and provided.

---

## NON-TECHNICAL SUMMARY

The proposed development is to deepen an existing basement to create useable living space, and extend the rear of the property, including the basement, further into the back garden.

Site investigation data confirm the presence of up to 1.8 m of clayey Made Ground overlying London Clay. The London Clay is classified as 'unproductive strata', and has low permeability. Groundwater flow within the London Clay is generally negligible, although some groundwater movement occurs on discrete sand partings or other discontinuities. Groundwater flow directions are likely to be in the direction of topography, to the south and west, but may vary due to local subsurface features. Geological mapping indicates that there may be Head Deposits in the vicinity.

Groundwater was observed at 2 m bgl in a monitoring well at the site. The depth of the existing basement is estimated as 1.8 m bgl. The proposed basement depth is approximately 3.2 m bgl. On the basis of the available data, it is considered likely that the new basement will extend below the water table. It is also probable that at times of high groundwater levels, the existing basement extends below the water table.

There is the potential for groundwater ingress to the excavation, although volumes are likely to be minimal due to the low permeability of the London Clay. Higher flows may be encountered in Made Ground or Head deposits. Measures should be taken to protect the excavation against groundwater ingress during construction. The excavation should be kept dry.

There is also the potential for groundwater ingress to the finished basement development. The basement design should include protection against groundwater ingress to the finished development, and also against permeation of soil moisture. Design should include for seasonal fluctuation in groundwater levels, which may rise close to ground surface.

There is the potential for groundwater to back-up around the proposed basement structure. This has the potential to affect the basements of neighbouring properties. Engineering design of the subsurface structure should provide groundwater drainage to reduce backing up of groundwater around the structure, and to minimise the potential for groundwater flooding or impact on neighbouring properties. There are measures widely implemented in such situations and if correctly designed and constructed there should not be any significant groundwater back up around the new basement.

Neighbours' properties should be surveyed to establish whether there are basements or cellars. The condition of the basements or cellars, particularly with regard to damp and water ingress, should be noted. Ongoing groundwater level monitoring should be undertaken to assess the range in groundwater levels and provide a baseline against which to compare future groundwater levels. It is recommended that groundwater levels continue to be monitored before, during and after construction of the basement.

The proposals include for an increase in soft landscaping across the property, which will increase the area available for recharge to groundwater. However, impacts to groundwater levels are not anticipated to be significant, given the low permeability of the clayey Made Ground materials and underlying London Clay, which will inhibit infiltration of rainfall.

Detailed drainage designs are not known at this stage, however it is not anticipated that significant volumes of water will be discharged to ground due to the low permeability of the London Clay. Changes to surfacing and drainage that might affect recharge to groundwater should be appropriately designed so that groundwater levels are not adversely affected, and to ensure that groundwater flooding is not caused. Design of drainage systems should consider the requirements of sustainable urban drainage.



## CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	Objective.....	1
1.2	Scope of works.....	1
<b>2</b>	<b>BACKGROUND INFORMATION .....</b>	<b>2</b>
<b>3</b>	<b>SCREENING .....</b>	<b>7</b>
<b>4</b>	<b>SCOPING .....</b>	<b>8</b>
4.2	Matters of concern.....	8
<b>5</b>	<b>IMPACT ASSESSMENT.....</b>	<b>9</b>
<b>6</b>	<b>CONCLUSIONS.....</b>	<b>11</b>
<b>7</b>	<b>REFERENCES .....</b>	<b>12</b>

## FIGURES

Figure 2.1	Site location.....	2
------------	--------------------	---

## TABLES

Table 2.1	Background information .....	2
Table 2.2	BGS borehole records .....	5
Table 2.3	Site investigation data .....	6
Table 3.1	Screening assessment.....	7
Table 5.1	Impact assessment.....	9

## APPENDICES

Appendix A	Groundsure report
Appendix B	Site plans



## **1 INTRODUCTION**

Ground and Water Limited has instructed H Fraser Consulting Ltd (HFCL) to provide the hydrogeological aspects of a Basement Impact Assessment at the following property:

158 Iverson Road, NW6 2HH .

The site is in the London Borough of Camden.

### **1.1 Objective**

The objective of this report is to provide the hydrogeological aspects of a Basement Impact Assessment to support a planning application for construction of a basement at 158 Iverson Road, NW6 2HH .

### **1.2 Scope of works**

The following works have been undertaken:

- Desk study
- Screening assessment with regards to groundwater
- Scoping assessment to identify potential impacts
- Impact assessment with regard to groundwater attributes
- Reporting

The work has been undertaken in accordance with the requirements of London Borough of Camden's Planning Guidance CPG4 'Basements and Lightwells' (referred to as CPG4) and Arup's 'Geological Hydrogeological and Hydrological Study, Guidance for Subterranean Development' (Arup, 2012, referred to throughout this report as the GHHS).

This assessment is limited to an assessment of the hydrogeological aspects of the proposed development and does not purport to make any comment on surface water flooding, hydrology, contamination or pollution, engineering, land stability, design or construction issues.

The work has been undertaken by Hannah Fraser, Director of HFCL, who is a Chartered Geologist with 19 years' experience as a hydrogeologist and consultant.





	<p>Ordnance survey topographic data<sup>1</sup> show the site at around 47 m OD, with ground elevations falling from the north and east to the south and west, as shown in Figure 2.1.</p>
<b>Proposed development</b>	<p>The proposed development is to deepen the basement to create useable living space, and extend the rear of the property, including the basement, further into the back garden. The back garden will be re-landscaped to comprise a soft-landscaped area of 40 m<sup>2</sup>. The dormer window at the rear will also be enlarged to increase the space on the third floor. Windows will be installed at basement level at the front. Site plans are shown in Appendix B.</p>
<b>Planning history at neighbouring properties</b>	<p>A search of the on-line planning records on <a href="http://www.camden.gov.uk">www.camden.gov.uk</a> for records held for neighbouring properties revealed the following:</p> <p>At 160 Iverson Road, a planning application was granted in November 2013 for <i>'conversion of existing house into 3 flats (1 x 1-bedroom, 2 x 2-bedroom) including rear extension at ground floor level, partial excavation of basement and formation of new lightwell, alterations to rear dormer and installation of 2 rooflights'</i>.</p> <p>A further planning application, registered in September 2015 shows the existing property to have a basement level at the front of the property. The application includes for extension of the basement level at the rear of the property. An application decision is not shown on the website.</p> <p>No planning records are shown for 156 Iverson Road.</p>
<b>Geology</b>	<p>Geological mapping<sup>2</sup> shows the area to be underlain by London Clay. The London Clay is extensive across the area, with the nearest superficial deposits mapped approximately 3.3 km southeast. The geological boundary with the Claygate Member, which overlies the London Clay, lies approximately 1 km northeast, forming the higher ground of Hampstead and Hampstead Heath.</p> <p>The London Clay mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions ('cementstone nodules') and disseminated pyrite. It also includes a few thin beds of shells and fine sand partings or pockets of sand, which commonly increase towards the base and towards the top of the formation. At the base, and at some other levels, thin beds of black rounded flint gravel occur in places. Glauconite is present in some of the sands and in some clay beds, and white mica occurs at some levels<sup>3</sup></p> <p>BGS 1:50, 000 Sheet No 256 (North London) indicates that the local area is likely to be covered with Quaternary Head deposits. These are poorly sorted and poorly stratified deposits formed mostly by solifluction and/or hillwash and soil creep, and may comprise gravel, sand and clay depending on the upslope source and distance from source.<sup>4</sup></p>

<sup>1</sup> [www.streetmap.co.uk](http://www.streetmap.co.uk)

<sup>2</sup> <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

<sup>3</sup> <http://www.bgs.ac.uk/lexicon/lexicon.cfm?pub=LC>

<sup>4</sup> <http://www.bgs.ac.uk/lexicon/lexicon.cfm?pub=HEAD>

Table 2.2 presents geological data from selected BGS borehole records<sup>5</sup>, and Figure 2.1 shows the location of the boreholes. The local borehole records confirm the presence of Made Ground overlying London Clay, with some possible Head Deposits.

A site investigation was undertaken by Ground and Water Limited on 11 March 2016. Two boreholes were excavated and confirmed up to 1.8 m of clayey Made Ground overlying London Clay at the property. Site investigation data are provided in Table 2.3.

**Aquifer status** 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). The London Clay holds water but does not transmit water readily due to its low permeability. Head Deposits, if present are likely to be fairly clayey but more heterogeneous than the London Clay, with the potential to transmit groundwater on more permeable zones.

The site is not within a source protection zone of a public water supply.

Groundwater was not recorded in any of the BGS borehole logs presented in Table 2.2.

Groundwater was not recorded during drilling at the site. Due to the very low permeability of the London Clay, it can take several days or weeks for a water table elevation to be established within a water monitoring borehole. A groundwater level of 2 m bgl was observed in a borehole on a monitoring visit on 15/04/2016.

**Watercourses** There are no detailed river network entries within 500 m of the site, and no surface water features within 250 m of the site. There are no surface water abstraction licences within 2000 m of the site.<sup>6</sup>

The site lies close to the historic location of a minor headwater of the River Kilburn. The River Kilburn is understood to have been diverted into combined sewers in the late 19<sup>th</sup> century. There are no indications that there is a water feature present on current mapping or aerial photography.

**Spring lines** There are no springs shown on OS mapping, and no known local geological features that might give rise to springs.

**Wells** The nearest groundwater abstraction licence is 1566 m east of the site. There are no potable water abstractions within 2000 m of the site. There are no source protection zones within 500 m of the site.<sup>7</sup> The BGS well records indicate that there is a well approximately 540 m southwest of the site, on Kilburn High Street, abstracting from the Thanet Sands below the London Clay.

**Groundwater flooding** There are no British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site. The area is not considered prone to groundwater flooding, based on rock type.<sup>8</sup>

<sup>5</sup> <http://mapapps2.bgs.ac.uk/geoindex/home.html>

<sup>6</sup> Groundsure report GS-2887114

<sup>7</sup> Groundsure report GS-2887114

<sup>8</sup> Groundsure report GS-2887114



**Table 2.2 BGS borehole records**

Ref	Name	Eastings	Northings	Description
TQ28SW85	Mapesbury Rd Willesden	524790	184960	Concrete to 0.23 m, stiff brown clay to 6.71 m, hard blue clay to 15.24 m. No movement of groundwater discovered during drilling operations.
TQ28SW573	320 Kilburn High Road 1	524825	184420	Made Ground (brick rubble and concrete) to 0.92 m, stiff brown mottled clay to 8.54 m, hard blue clay to 18.29 m. Water struck: none.
TQ28SE635/A	Netherwood St. Camden 1	525100	184560	Ground level at 44.97 m a OD. Made ground consisting of brick fragments, pieces of concrete, gravel and sandy silt to 5.3 m, stiff brown mottled blue in places fissured silty CLAY with some traces of crystals to 11.9 m, stiff blue/grey fissured silty CLAY to 12.2 m. No groundwater encountered.
TQ28NE32	Fire Station West End Lane W.Hampstead	525390	185190	Ground level at 60.15 m a OD. Vegetable mould to 0.33 m, vegetable mould mixed with stone gravel to 0.66 m, hard yellow clay to 1.27 m. No groundwater data.
TQ28SE514	Broadhurst Gardens BH1	525790	184620	Made Ground to 0.61 m; London Clay soft to firm red brown mottled clay changing to brown and grey mottled clay to 3.9 m. A few gypsum crystals at 3.9 m. Borehole dry
TQ28SE2472	Kilburn Grange Park	525021	184280	Ground level at 60.64 m a OD. Topsoil and grass to 0.1 m, possible Made Ground (firm brown silty clay with 1 mm pockets of yellow brown clay, occasional 5 - 6 mm brick fragments and some fine to medium flint gravel) to 0.9 m, possible made ground (stiff yellow brown silty clay with rare root traces infilled with topsoil and rare 1 mm - 2 mm pockets of topsoil) to 1 m, stiff yellow brown mottled greyish brown clay to 6 m, stiff fissured brown clay with some pockets and lenses of yellow brown silt to 9.8 m, stiff to very stiff fissured grey brown clay to 26 m. Further detailed records of clay to 80.45 m, sand to 96 m, chalk to 143.6 m. No groundwater data.

Geological data from site investigations undertaken by Ground and Water Limited in March 2016 are presented in Table 2.3.

**Table 2.3 Site investigation data**

<b>Strata</b>	<b>Depth encountered (m bgl)</b>	<b>Thickness (m)</b>
MADE GROUND (WS1 and WS2): Concrete and sub-base (WS2)	GL	0.08 – 0.30
MADE GROUND (WS1 and WS2): Dark brown/black/brown/orange brown sandy gravelly silty clay. Sand is fine to coarse grained. Gravel is rare to occasional, fine to coarse, sub-angular to sub-rounded flint, brick, cement and carbonaceous material.	0.08 – 0.30	0.92 – 1.50
LONDON CLAY FORMATION: Brown/orange brown/ grey silty clay with occasional orange silty pockets. Selenite crystals noted.	1.00 – 1.80	>3.20 - >4.00

No groundwater was observed during drilling. A groundwater level of 2 m bgl was measured on a groundwater monitoring visit on 15 April 2016.

### 3 SCREENING

A screening assessment has been undertaken in accordance with the methodology set out in Section 6.2 and Appendix E2 of the GHHS (Arup, 2012). The results are presented in Table 3.1.

**Table 3.1 Screening assessment**

Ref	Question	Answer (yes/no/unknown)	Action
Q1a	Is the site located directly above an aquifer?	No	No further action
Q1b	Will the proposed basement extend beneath the water table surface?	Yes	Take forward to scoping stage
Q2	Is the site within 100m of a watercourse, well (used/disused) or potential spring line?	No	No further action
Q3	Is the site within the catchment of the pond chains on Hampstead Heath?	No	No further action
Q4	Will the proposed basement development result in a change in the proportion of hard surface/paved areas?	Yes	Take forward to scoping stage
Q5	As part of the drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SUDs)?	Unknown	Take forward to scoping stage
Q6	Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to or lower than the mean water level in any local pond or spring line?	No	No further action

## **4 SCOPING**

This section of the report summarises the pertinent information as a Conceptual Model, and then describes the matters of concern that need to be considered in the Impact Assessment.

### **4.1 Conceptual model**

The proposed development is to deepen an existing basement to create useable living space, and extend the rear of the property, including the basement, further into the back garden.

Local topography falls to the south and southwest, and the site lies at an elevation of approximately 47 m OD. The basement excavation is likely to be c. 3.5 m bgl.

The underlying geology comprises the London Clay. Site investigation data from the rear of the property confirm the presence of up to 1.8 m of clayey Made Ground overlying London Clay. The London Clay is classified as 'unproductive strata', and has low permeability. Groundwater flow within the London Clay is generally negligible, although some groundwater movement occurs on discrete sand partings or other discontinuities. Groundwater flow directions are likely to be in the direction of topography, to the south and west, but may vary due to local subsurface features. Geological mapping indicates that there may be Head Deposits in the vicinity.

Groundwater was observed at 2 m bgl in a monitoring well at the site. The depth of the existing basement is estimated as 1.8 m bgl. The proposed basement depth is approximately 3.2 m bgl. On the basis of the available data, it is considered likely that the new basement will extend below the water table. It is also probable that at times of high groundwater levels, the existing basement extends below the water table.

It is certain that there is a basement at the neighbouring property to the east, 160 Iverson Road. It is not known whether there is a basement at 156 Iverson Road, although it seems likely that the shallow basement at No. 158 is an original feature, given the bay structure at the front, and that No 156 also has a shallow basement.

The drainage arrangements for the site are not known. Under the proposals, the development will increase the amount of softscaping in the rear garden from 25 m<sup>2</sup> to 40 m<sup>2</sup>. This provides greater opportunity for recharge to groundwater, although this will be limited due to the low permeability of the Made Ground materials and the underlying London Clay.

### **4.2 Matters of concern**

Five attributes are considered as potential matters of concern, as discussed below.

1. Groundwater level – groundwater was observed at 2 m bgl at the site. This is taken forward for further assessment.
2. Range of seasonal fluctuation in groundwater levels – the range of fluctuation in groundwater levels is not known. This is taken forward for further assessment.
3. Spring/stream hydrographs – there is no evidence that local streams or springs are likely to be affected. This is not considered further.
4. Soil moisture – there is the potential for soil moisture content to affect the development, and this is carried forward for further assessment.
5. Water quality – there is no evidence that the development will affect water quality, provided good practice is followed with regard to pollution management. This is not considered further.

## 5 IMPACT ASSESSMENT

The impact assessment has been undertaken by considering groundwater attributes, how these are likely to change under the proposed development and the consequence of any predicted changes. The assessment is qualitative at this stage. The results are presented in Table 5.1.

**Table 5.1 Impact assessment**

Groundwater Attribute	Predicted Change	Consequence of change and mitigation
<b>Groundwater levels</b>	<p>Groundwater has been observed on site at 2 m bgl, indicating that the development may extend below the water table.</p> <p>There is the potential for groundwater ingress to the excavation, although volumes are likely to be minimal due to the low permeability of the London Clay. Higher flows may be encountered in Made Ground or Head deposits.</p> <p>There is also the potential for groundwater ingress to the finished basement development.</p> <p>There is the potential for groundwater to back-up around the proposed basement structure. This has the potential to affect neighbouring properties if they have basements.</p> <p>The proposals include for an increase in soft landscaping across the property, which will increase the area available for recharge to groundwater. However, impacts to groundwater levels are not anticipated to be significant, given the low permeability of the clayey Made Ground materials and underlying London Clay, which will inhibit infiltration of rainfall.</p> <p>Detailed drainage designs are not known at this stage, however it is not anticipated that significant volumes of water will be discharged to ground due to the low permeability of the Made Ground materials and London Clay.</p>	<p>Measures should be taken to protect the excavation against groundwater ingress during construction. The excavation should be kept dry.</p> <p>The basement design should include protection against groundwater ingress to the finished development.</p> <p>Engineering design of the subsurface structure should provide groundwater drainage to reduce backing up of groundwater around the structure, and to minimise the potential for groundwater flooding or impact on neighbouring properties. There are measures widely implemented in such situations and if correctly designed and constructed there should not be any significant groundwater back up around the new basement.</p> <p>Neighbours' properties should be surveyed to establish whether there are basements or cellars. The condition of the basements or cellars, particularly with regard to damp and water ingress, should be noted. Ongoing groundwater level monitoring should be undertaken to assess the range in groundwater levels and provide a baseline against which to compare future groundwater levels.</p> <p>Changes to surfacing and drainage that might affect recharge to groundwater should be appropriately designed so that groundwater levels are not adversely affected, and to ensure that groundwater flooding is not caused. Design of drainage systems should consider the requirements of sustainable urban drainage.</p>

Groundwater Attribute	Predicted Change	Consequence of change and mitigation
<b>Range of seasonal fluctuation in groundwater levels</b>	The range of seasonal groundwater fluctuation is not known. The groundwater table has been measured at a relatively shallow depth, and seasonal fluctuations in groundwater combined with backing up of groundwater levels around the basement structure have the potential to cause daylighting of groundwater at the surface. The likelihood of this occurring is considered to be relatively low, but in the absence of site specific groundwater data, mitigation measures should be incorporated to address this risk.	<p>Structural design should allow for seasonal fluctuations in groundwater elevations, which may rise close to ground level.</p> <p>The basement design should include groundwater drainage systems to prevent groundwater backing up around the development, and thereby protect neighbouring properties from impact. There are measures widely implemented in such situations and if correctly designed and constructed there should not be any significant groundwater back up around the new basement.</p> <p>It is recommended that groundwater levels continue to be monitored before, during and after construction of the basement.</p>
<b>Soil moisture</b>	Soil moisture has the potential to permeate the basement structure.	The proposed basement structure should be adequately protected against permeation of soil moisture.

## 6 CONCLUSIONS

The proposed development is to deepen an existing basement to create useable living space, and extend the rear of the property, including the basement, further into the back garden.

Site investigation data confirm the presence of up to 1.8 m of clayey Made Ground overlying London Clay. The London Clay is classified as 'unproductive strata', and has low permeability. Groundwater flow within the London Clay is generally negligible, although some groundwater movement occurs on discrete sand partings or other discontinuities. Groundwater flow directions are likely to be in the direction of topography, to the south and west, but may vary due to local subsurface features. Geological mapping indicates that there may be Head Deposits in the vicinity.

Groundwater was observed at 2 m bgl in a monitoring well at the site. The depth of the existing basement is estimated as 1.8 m bgl. The proposed basement depth is approximately 3.2 m bgl. On the basis of the available data, it is considered likely that the new basement will extend below the water table. It is also probable that at times of high groundwater levels, the existing basement extends below the water table.

There is the potential for groundwater ingress to the excavation, although volumes are likely to be minimal due to the low permeability of the London Clay. Higher flows may be encountered in Made Ground or Head deposits. Measures should be taken to protect the excavation against groundwater ingress during construction. The excavation should be kept dry.

There is also the potential for groundwater ingress to the finished basement development. The basement design should include protection against groundwater ingress to the finished development, and also against permeation of soil moisture. Design should include for seasonal fluctuation in groundwater levels, which may rise close to ground surface.

There is the potential for groundwater to back-up around the proposed basement structure. This has the potential to affect the basements of neighbouring properties. Engineering design of the subsurface structure should provide groundwater drainage to reduce backing up of groundwater around the structure, and to minimise the potential for groundwater flooding or impact on neighbouring properties. There are measures widely implemented in such situations and if correctly designed and constructed there should not be any significant groundwater back up around the new basement.

Neighbours' properties should be surveyed to establish whether there are basements or cellars. The condition of the basements or cellars, particularly with regard to damp and water ingress, should be noted. Ongoing groundwater level monitoring should be undertaken to assess the range in groundwater levels and provide a baseline against which to compare future groundwater levels. It is recommended that groundwater levels continue to be monitored before, during and after construction of the basement.

The proposals include for an increase in soft landscaping across the property, which will increase the area available for recharge to groundwater. However, impacts to groundwater levels are not anticipated to be significant, given the low permeability of the clayey Made Ground materials and underlying London Clay, which will inhibit infiltration of rainfall.

Detailed drainage designs are not known at this stage, however it is not anticipated that significant volumes of water will be discharged to ground due to the low permeability of the London Clay. Changes to surfacing and drainage that might affect recharge to groundwater should be appropriately designed so that groundwater levels are not adversely affected, and to ensure that groundwater flooding is not caused. Design of drainage systems should consider the requirements of sustainable urban drainage.



## **7 REFERENCES**

**British Geological Survey, 2006.** North London, England and Wales Sheet 256. Bedrock and superficial deposits. 1:50,000.

**Arup, 2012.** Geological Hydrogeological and Hydrological Study, Guidance for subterranean development

**Ground and Water, 2016.** Ground investigation report for the site at 158 Iverson Road, West Hampstead, London NW6 2HH. Ref GWPR1605.

**London Borough of Camden CPG4 'Basements and Lightwells'**

# APPENDIX A

## Groundsure Report

# Groundsure Enviroinsight

Address: 158, IVERSON ROAD, LONDON, NW6 2HH

Date: 7 Apr 2016

Reference: GS-2887114

Client: H Fraser Consulting Ltd

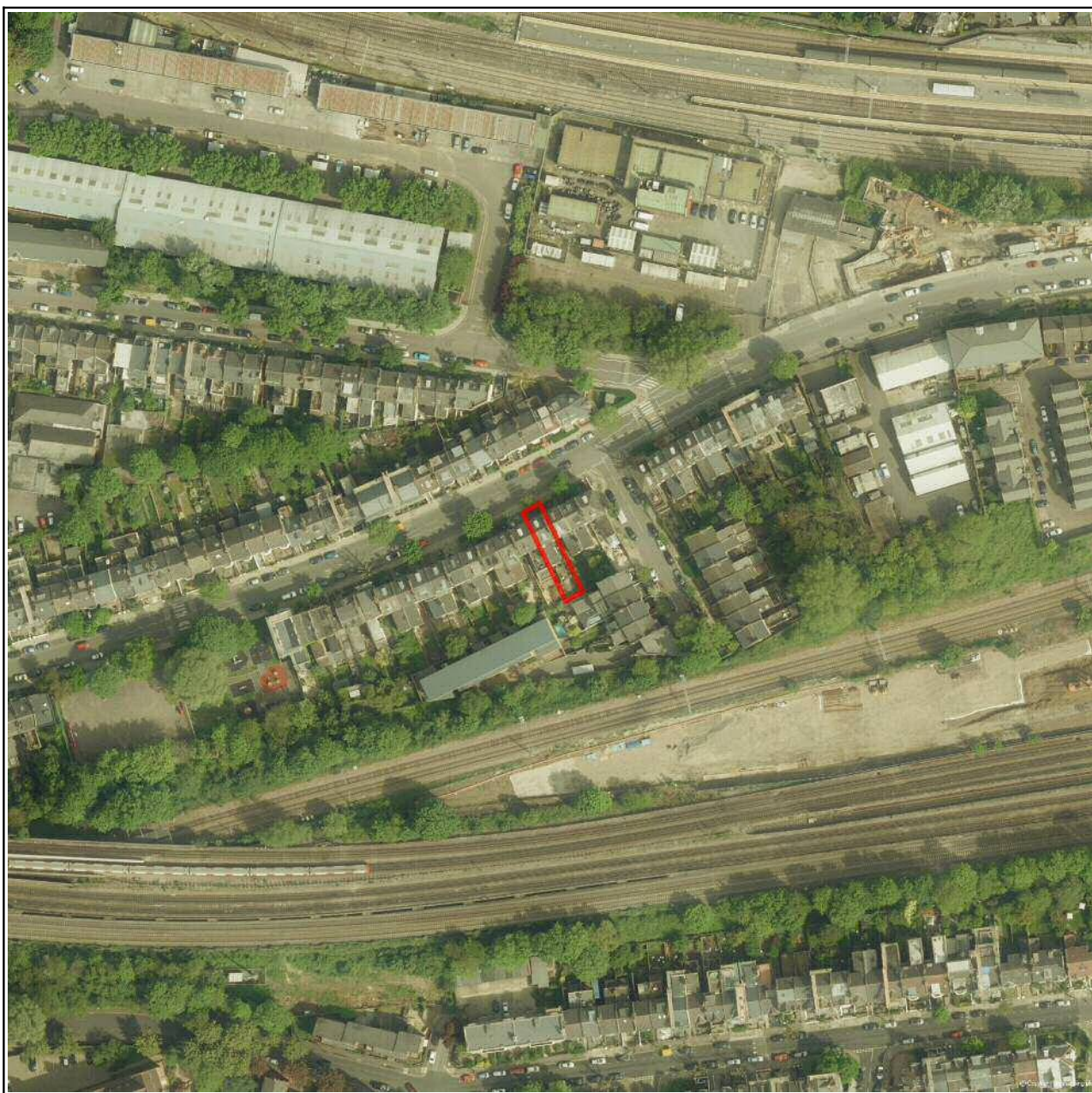
NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 04-May-2014

Grid Reference: 525231,184698

Site Size: 0.02ha

Report Reference: GS-2887114

Client Reference: 30137\_158\_Iverson\_Road

# 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	12
1.2 Additional Information – Historical Tank Database	14
1.3 Additional Information – Historical Energy Features Database	15
1.4 Additional Information – Historical Petrol and Fuel Site Database	17
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	17
1.6 Potentially Infilled Land	19
2. Environmental Permits, Incidents and Registers Map	21
2. Environmental Permits, Incidents and Registers	22
2.1 Industrial Sites Holding Licences and/or Authorisations	22
2.1.1 Records of historic IPC Authorisations within 500m of the study site	22
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site	22
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site	22
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site	22
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site	22
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site	23
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	23
2.1.8 Records of Licensed Discharge Consents within 500m of the study site	24
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site	24
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	24
2.2 Dangerous or Hazardous Sites	24
2.3 Environment Agency Recorded Pollution Incidents	24
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site	24
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site	25
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	25
3. Landfill and Other Waste Sites Map	26
3. Landfill and Other Waste Sites	27
3.1 Landfill Sites	27
3.1.1 Records from Environment Agency landfill data within 1000m of the study site	27
3.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site	27
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site	27
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site	27
3.2 Other Waste Sites	28
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site	28
3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site	28
4. Current Land Use Map	29
4. Current Land Uses	30
4.1 Current Industrial Data	30
4.2 Petrol and Fuel Sites	31
4.3 National Grid High Voltage Underground Electricity Transmission Cables	31
4.4 National Grid High Pressure Gas Transmission Pipelines	32
5. Geology	33
5.1 Artificial Ground and Made Ground	33



5.2 Superficial Ground and Drift Geology .....	33
5.3 Bedrock and Solid Geology .....	33
6 Hydrogeology and Hydrology .....	34
6a. Aquifer Within Superficial Geology .....	34
6b. Aquifer Within Bedrock Geology and Abstraction Licenses .....	35
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses .....	36
6d. Hydrogeology – Source Protection Zones within confined aquifer .....	37
6e. Hydrology – Detailed River Network and River Quality .....	38
6. Hydrogeology and Hydrology .....	39
6.1 Aquifer within Superficial Deposits.....	39
6.2 Aquifer within Bedrock Deposits.....	39
6.3 Groundwater Abstraction Licences.....	39
6.4 Surface Water Abstraction Licences.....	40
6.5 Potable Water Abstraction Licences.....	40
6.6 Source Protection Zones.....	40
6.7 Source Protection Zones within Confined Aquifer.....	41
6.8 Groundwater Vulnerability and Soil Leaching Potential.....	41
6.9 River Quality.....	41
6.9.1 Biological Quality:.....	41
6.9.2 Chemical Quality:.....	41
6.10 Detailed River Network.....	41
6.11 Surface Water Features.....	42
7a. Environment Agency Flood Map for Planning (from rivers and the sea) .....	43
7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map .....	44
7 Flooding .....	45
7.1 River and Coastal Zone 2 Flooding.....	45
7.2 River and Coastal Zone 3 Flooding.....	45
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating.....	45
7.4 Flood Defences.....	45
7.5 Areas benefiting from Flood Defences.....	45
7.6 Areas benefiting from Flood Storage.....	46
7.7 Groundwater Flooding Susceptibility Areas.....	46
7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? No.....	46
7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?.....	46
7.8 Groundwater Flooding Confidence Areas.....	46
8. Designated Environmentally Sensitive Sites Map .....	47
8. Designated Environmentally Sensitive Sites .....	48
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:.....	48
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:.....	48
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:.....	48
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:.....	48
8.5 Records of Ramsar sites within 2000m of the study site:.....	48
8.6 Records of Ancient Woodland within 2000m of the study site: .....	49
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:.....	49
8.8 Records of World Heritage Sites within 2000m of the study site:.....	49
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site: .....	49
8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: .....	49
8.11 Records of National Parks (NP) within 2000m of the study site: .....	49
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:.....	50
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:.....	50

8.14 Records of Green Belt land within 2000m of the study site:.....	50
9. Natural Hazards Findings.....	51
9.1 Detailed BGS GeoSure Data.....	51
9.1.1 Shrink Swell.....	51
9.1.2 Landslides.....	51
9.1.3 Soluble Rocks.....	51
9.1.4 Compressible Ground.....	52
9.1.5 Collapsible Rocks.....	52
9.1.6 Running Sand.....	52
9.2 Radon.....	52
9.2.1 Radon Affected Areas.....	52
9.2.2 Radon Protection.....	53
10. Mining.....	54
10.1 Coal Mining.....	54
10.2 Non-Coal Mining.....	54
10.3 Brine Affected Areas .....	54
Contact Details.....	55
Standard Terms and Conditions.....	57

# 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	0	6	57	47
1.2 Additional Information – Historical Tank Database	0	0	8	5
1.3 Additional Information – Historical Energy Features Database	0	0	24	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	18	60
1.6 Potentially Infilled Land	0	0	16	15
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	0	8
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	1	0
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	0



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	1	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	1	1	0	Not searched	Not searched
3.2.2 Environment Agency Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	19	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	1
4.3 National Grid Underground Electricity Cables	0	0	0	1
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	None
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	No					
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes					
	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	0	4
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	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	0	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding	
7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site	No
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?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Not Prone
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Not Applicable

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	2	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0

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.

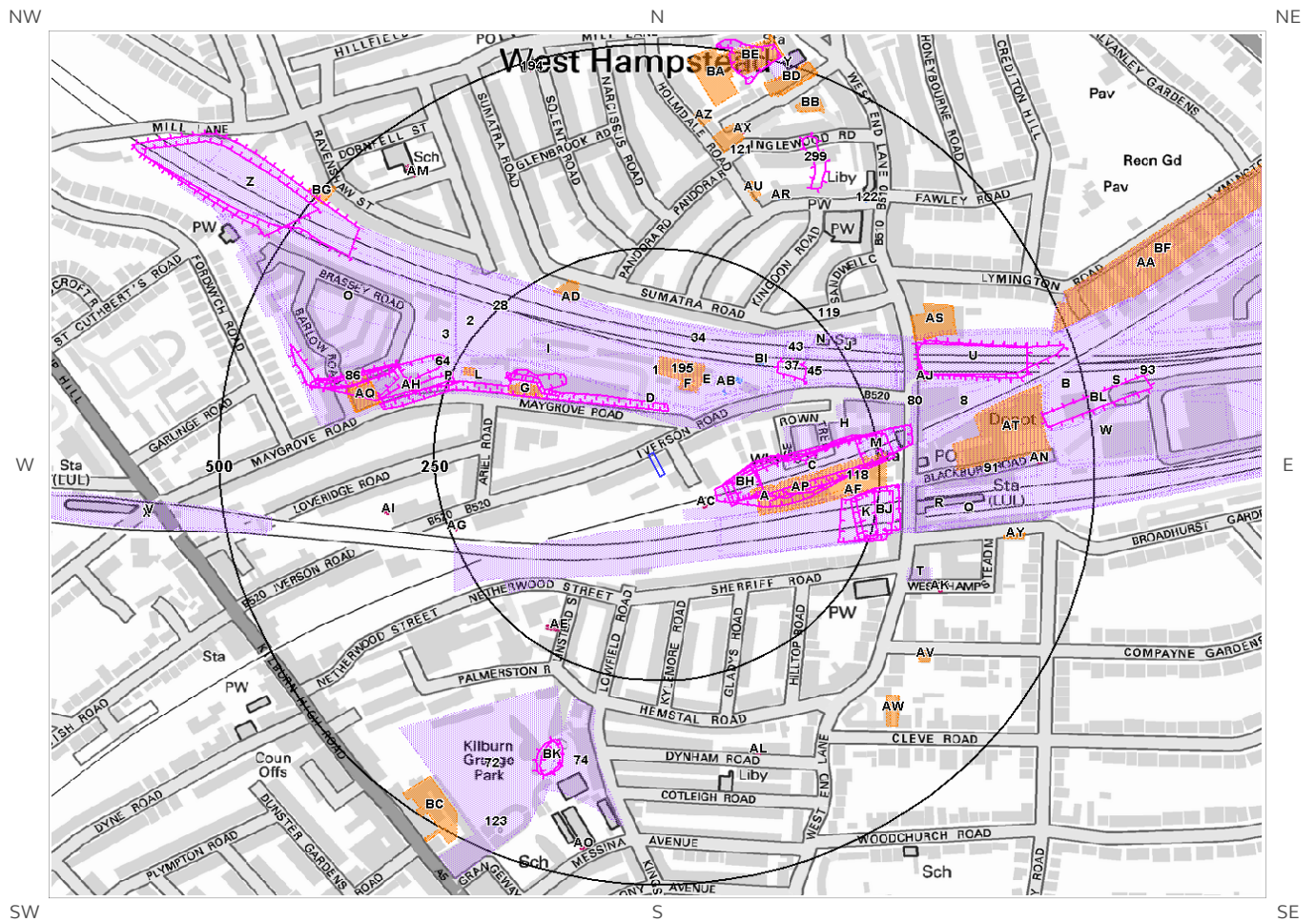
## Note: Maps

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



© Crown copyright and database rights 2016.  
Ordnance Survey license 100035207.



# 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: 110

ID	Distance [m]	Direction	Use	Date
1	40	N	Coal Depot	1957
2	47	N	Railway Sidings	1894
3	48	N	Railway Sidings	1920
4A	49	SE	Unspecified Works	1968
5A	49	SE	Unspecified Works	1989
6A	49	SE	Unspecified Works	1973
7G	52	N	Unspecified Ground Workings	1866
8	54	NE	Railway Sidings	1948
9D	58	N	Railway Building	1920
10C	62	E	Cuttings	1866
11B	63	N	Railway Sidings	1973
12B	63	N	Railway Sidings	1968
13B	65	N	Railway Sidings	1957
14C	68	E	Cuttings	1948
15D	72	N	Railway Building	1948
16BH	72	E	Cuttings	1920
17C	80	E	Cuttings	1894
18E	83	NE	Railway Buildings	1973
19E	83	NE	Railway Buildings	1968
20R	84	SE	Railway Sidings	1989
21F	85	N	Railway Building	1920
22E	85	NE	Railway Building	1894
23AB	87	NE	Railway Buildings	1948
24F	87	N	Railway Building	1948
25F	87	N	Coal Depot	1957
26C	105	E	Cuttings	1957
27E	109	NE	Railway Building	1920
28	117	N	Railway Sidings	1866
29G	127	NW	Unspecified Ground Workings	1957
30G	127	NW	Unspecified Ground Workings	1973
31G	127	NW	Unspecified Ground Workings	1968
32H	137	E	Unspecified Works	1973



33H	137	E	Unspecified Works	1968
34	141	N	Railway Building	1920
35I	162	NW	Railway Building	1894
36I	172	NW	Railway Building	1920
37	173	NE	Cuttings	1866
38I	176	NW	Railway Building	1948
39J	187	NE	Railway Station	1948
40J	191	NE	Railway Station	1920
41J	192	NE	Railway Station	1968
42J	192	NE	Railway Station	1973
43	192	NE	Railway Sidings	1957
44L	192	NW	Railway Buildings	1894
45	198	NE	Railway Station	1894
46K	208	E	Cuttings	1948
47K	218	E	Cuttings	1957
48K	223	E	Cuttings	1968
49K	223	E	Cuttings	1989
50K	223	E	Cuttings	1973
51M	225	E	Railway Station	1948
52N	226	NE	Railway Station	1989
53L	227	NW	Railway Building	1920
54M	229	E	Railway Station	1920
55N	231	NE	Railway Building	1957
56M	232	E	Railway Station	1968
57M	232	E	Railway Station	1973
58M	232	E	Railway Station	1989
59M	232	E	Railway Station	1957
60L	233	NW	Railway Building	1948
61N	237	NE	Railway Building	1894
62M	238	E	Railway Station	1894
63P	242	W	Unspecified Ground Workings	1951
64	252	NW	Railway Buildings	1920
65BJ	255	E	Railway Building	1948
66O	255	NW	Railway Sidings	1951
67O	255	NW	Railway Sidings	1973
68O	255	NW	Railway Sidings	1967
69O	257	NW	Railway Sidings	1957
70P	263	NW	Unspecified Pit	1866
71Q	282	E	Railway Station	1948
72	283	SW	Nursery	1866
73S	288	E	Railway Sidings	1920
74	288	S	Sawmill	1894
75Q	289	E	Railway Station	1920
76R	290	E	Railway Station	1957
77R	290	E	Railway Station	1968



78R	290	E	Railway Station	1989
79R	290	E	Railway Station	1973
80	293	E	Railway Buildings	1948
81R	294	E	Railway Station	1894
82S	295	E	Railway Sidings	1894
83T	306	E	Police Station	1968
84T	306	E	Police Station	1973
85P	311	W	Unspecified Tanks	1951
86	311	W	Unspecified Ground Workings	1920
87P	313	W	Unspecified Tanks	1920
88U	323	NE	Cuttings	1866
89U	326	NE	Cuttings	1894
90AT	345	E	Unspecified Depot	1989
91	349	E	Railway Building	1957
92Z	426	NW	Cuttings	1866
93	440	E	Railway Sidings	1866
94V	445	W	Railway Sidings	1996
95V	445	W	Railway Sidings	1982
96BL	445	E	Cuttings	1866
97W	451	E	Unspecified Works	1968
98W	451	E	Unspecified Works	1989
99W	451	E	Unspecified Works	1973
100X	452	W	Railway Sidings	1973
101X	452	W	Railway Sidings	1967
102BE	464	N	Gravel Pit	1873
103Y	477	N	Fire Station	1996
104Y	477	N	Fire Station	1974
105Y	477	N	Fire Station	1965
106BF	481	E	Unspecified Depot	1920
107AA	487	E	Unspecified Yard	1957
108Z	488	NW	Cuttings	1894
109AA	488	E	Unspecified Yard	1968
110Z	494	NW	Railway Sidings	1966

## 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:

13

ID	Distance (m)	Direction	Use	Date
111E	108	NE	Unspecified Tank	1915

112AB	129	NE	Unspecified Tank	1915
113AB	130	NE	Unspecified Tank	1953
114AB	130	NE	Unspecified Tank	1953
115AB	130	NE	Unspecified Tank	1955
116AB	130	NE	Unspecified Tank	1955
117BI	163	NE	Unspecified Tank	1896
118	222	E	Unspecified Tank	1896
119	262	NE	Unspecified Tank	1871
120AR	343	NE	Unspecified Tank	1871
121	378	N	Unspecified Tank	1871
122	394	NE	Unspecified Tank	1871
123	466	SW	Unspecified Tank	1896

### 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:

71

ID	Distance (m)	Direction	Use	Date
124AC	59	SE	Electricity Substation	1994
125AC	59	SE	Electricity Substation	1985
126AC	59	SE	Electricity Substation	1991
127AC	59	SE	Electricity Substation	1991
128AC	60	SE	Electricity Substation	1974
129AD	208	NW	Electricity Substation	1994
130AD	209	NW	Electricity Substation	1974
131AD	209	NW	Electricity Substation	1985
132AD	209	NW	Electricity Substation	1991
133AD	209	NW	Electricity Substation	1991
134AE	216	SW	Electricity Substation	1955
135AE	216	SW	Electricity Substation	1955
136AF	217	E	Electricity Substation	1985
137AF	217	E	Electricity Substation	1991
138AF	217	E	Electricity Substation	1991
139AF	218	E	Electricity Substation	1994
140AF	219	E	Electricity Substation	1974
141AE	220	SW	Electricity Substation	1995
142AE	220	SW	Electricity Substation	1991
143AE	220	SW	Electricity Substation	1974
144AE	220	SW	Electricity Substation	1953
145AG	240	W	Electricity Substation	1955
146AG	241	W	Electricity Substation	1970

147AG	241	W	Electricity Substation	1953
148AH	285	W	Electricity Substation	1955
149AH	285	W	Electricity Substation	1991
150AH	285	W	Electricity Substation	1981
151AH	285	W	Electricity Substation	1984
152AH	286	W	Electricity Substation	1970
153AH	286	W	Electricity Substation	1953
154AH	286	W	Electricity Substation	1991
155AH	286	W	Electricity Substation	1992
156AH	286	W	Electricity Substation	1984
157AI	310	W	Electricity Substation	1981
158AI	310	W	Electricity Substation	1991
159AI	310	W	Electricity Substation	1970
160AI	310	W	Electricity Substation	1992
161AI	311	W	Electricity Substation	1991
162AI	311	W	Electricity Substation	1991
163AI	311	W	Electricity Substation	1992
164AJ	321	E	Electricity Substation	1984
165AJ	321	E	Electricity Substation	1974
166AJ	321	E	Electricity Substation	1994
167AJ	321	E	Electricity Substation	1992
168AJ	322	E	Electricity Substation	1991
169AK	347	SE	Electricity Substation	1984
170AK	347	SE	Electricity Substation	1974
171AK	347	SE	Electricity Substation	1994
172AK	347	SE	Electricity Substation	1991
173AK	347	SE	Electricity Substation	1995
174AL	353	S	Electricity Substation	1974
175AL	353	S	Electricity Substation	1973
176AL	353	S	Electricity Substation	1974
177AX	403	N	Electricity Substation	1953
178AM	433	NW	Electricity Substation	1991
179AM	433	NW	Electricity Substation	1992
180AN	433	E	Electricity Substation	1984
181AN	433	E	Electricity Substation	1991
182AN	433	E	Electricity Substation	1991
183AM	434	NW	Electricity Substation	1994
184AM	434	NW	Electricity Substation	1974
185AN	434	E	Electricity Substation	1953
186AN	434	E	Electricity Substation	1995
187AM	445	NW	Electricity Substation	1991
188AO	459	S	Electricity Substation	1955
189AO	460	S	Electricity Substation	1955
190AO	460	S	Electricity Substation	1953
191AO	460	S	Electricity Substation	1974
192AO	461	S	Electricity Substation	1973

193AO	461	S	Electricity Substation
194	488	N	Electricity Substation

## 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: 0

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: 78

ID	Distance (m)	Direction	Use	Date
195	83	N	Car Breakers Yard	1974
196AP	102	E	Crane Repair Works	1974
197AP	107	E	Crane Repair Works	1955
198AP	107	E	Crane Repair Works	1955
199AP	107	E	Crane Repair Works	1953
200AP	107	E	Crane Repair Works	1953
201G	143	NW	Garages	1953
202G	143	NW	Garages	1953
203G	153	NW	Garages	1955
204G	153	NW	Garages	1955
205AD	207	NW	Garages	1953
206AD	207	NW	Garages	1953
207AD	208	NW	Garages	1955
208AD	208	NW	Garages	1955
209L	224	NW	Garage	1953
210L	224	NW	Garage	1953
211L	225	NW	Garage	1955
212L	225	NW	Garage	1955
213AQ	318	W	Garage	1991
214AQ	318	W	Garage	1981
215AQ	318	W	Garage	1984
216AQ	319	W	Garage	1970
217AQ	319	W	Garage	1953
218AQ	319	W	Garage	1955

219AQ	319	W	Garage	1992
220AQ	319	W	Garage	1991
221AQ	319	W	Garage	1953
222AR	329	N	Garages	1953
223AU	329	N	Garages	1960
224AS	333	NE	Garage	1960
225AS	333	NE	Garage	1953
226AS	333	NE	Garage	1955
227AS	335	NE	Garage	1955
228AS	335	NE	Garage	1960
229AT	336	E	General Post Office Garage	1960
230AT	336	E	General Post Office Garage	1953
231AU	342	N	Garages	1955
232AV	367	SE	Garages	1955
233AV	367	SE	Garages	1953
234AV	367	SE	Garages	1953
235AV	367	SE	Garages	1955
236AW	374	SE	Garage	1955
237AW	374	SE	Garage	1953
238AW	375	SE	Garages	1953
239AW	375	SE	Garages	1953
240AX	376	N	Garages	1953
241AX	377	N	Garages	1953
242AX	377	N	Garages	1960
243AY	401	E	Garages	1960
244AY	401	E	Garages	1953
245AY	401	E	Garages	1955
246AY	401	E	Garages	1955
247AY	401	E	Garages	1953
248AZ	404	N	Garages	1953
249AZ	404	N	Garages	1953
250AZ	411	N	Garages	1953
251BA	430	N	Post Office Garage	1953
252BA	431	N	Post Office Garage	1953
253BA	431	N	Post Office Garage	1953
254BB	450	N	Garages	1953
255BB	450	N	Garages	1953
256BB	450	N	Garages	1953
257BC	454	SW	Motor Units Factory	1955
258BC	454	SW	Motor Units Factory	1953
259Y	457	N	Garage	1953
260Y	457	N	Garage	1973
261BD	457	N	Garage	1953
262BD	457	N	Garage	1991

263Y	458	N	Garage	1973
264BE	472	N	Coach Works	1994
265Y	478	N	Garage	1992
266Y	478	N	Garage	1953
267BE	478	N	Garage	1953
268BE	478	N	Garage	1953
269BE	478	N	Garage	1935
270BF	485	E	Works Depot	1953
271BG	488	NW	Garages	1953
272BG	488	NW	Garages	

## 1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 31

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

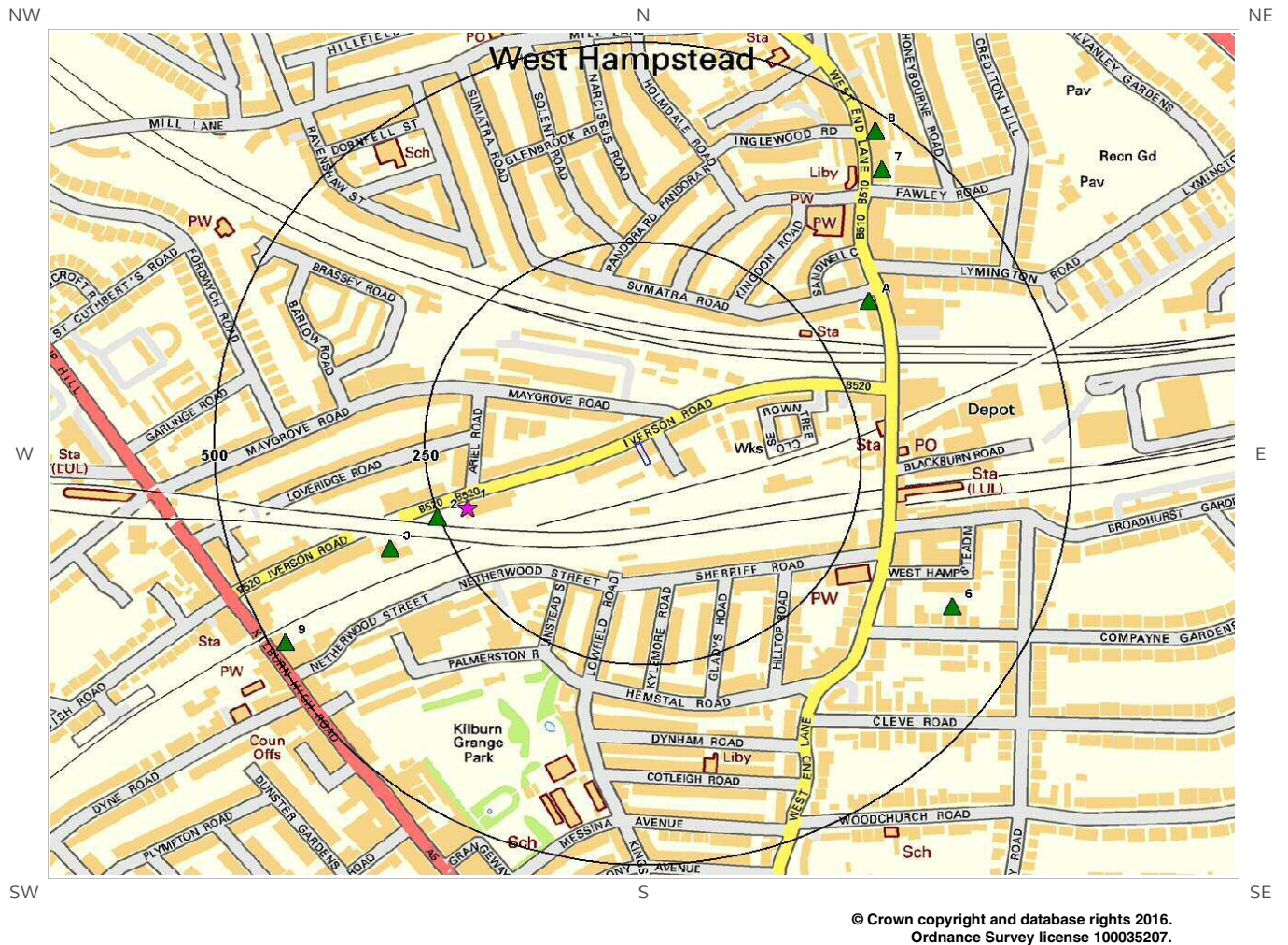
ID	Distance(m)	Direction	Use	Date
273G	52	N	Unspecified Ground Workings	1866
274C	62	E	Cuttings	1866
275C	68	E	Cuttings	1948
276BH	72	E	Cuttings	1920
277C	80	E	Cuttings	1894
278C	105	E	Cuttings	1957
279G	127	NW	Unspecified Ground Workings	1973
280G	127	NW	Unspecified Ground Workings	1968
281G	127	NW	Unspecified Ground Workings	1957
282BI	173	NE	Cuttings	1866
283BJ	208	E	Cuttings	1948
284BJ	218	E	Cuttings	1957
285BJ	223	E	Cuttings	1989
286BJ	223	E	Cuttings	1973
287BJ	223	E	Cuttings	1968
288P	242	W	Unspecified Ground Workings	1951
289AH	263	NW	Unspecified Pit	1866
290P	311	W	Unspecified Ground Workings	1920
291U	323	NE	Cuttings	1866
292U	326	NE	Cuttings	1894
293BK	344	S	Pond	1920
294BK	346	S	Pond	1989
295BK	346	S	Pond	1968
296BK	346	S	Pond	1973

297BK	346	S	Pond	1948
298BK	346	S	Pond	1957
299	372	NE	Pond	1866
300Z	426	NW	Cuttings	1866
301BL	445	E	Cuttings	1866
302BE	464	N	Gravel Pit	1873
303Z	488	NW	Cuttings	1894

---



## 2. Environmental Permits, Incidents and Registers Map



## 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 following information:

#### 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) within 500m of the study site:

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:

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:

8

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	Details
2	253	W	524989 184613	Address: Dynes Motors Ltd, 52 Iverson Rd, London, NW6 2QX 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
3	320	SW	524933 184573	Address: A B Dyne, 52 Iverson Road, London, NW6 2QX 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
4A	323	NE	525501 184883	Address: Madame George Dry Cleaners , 227 West End Lane, NW6 1XJ Process: Dry Cleaning Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
5A	323	NE	525501 184883	Address: Madame George Dry Cleaners, 227 West End Lane, NW6 1XJ Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
6	402	SE	525600 184500	Address: Wj Humpage, Loudon Rd Coachworks, West Hampstead Mews, NW6 3BB 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
7	445	NE	525517 185048	Address: Shamrock, 210 West End Lane, NW6 1UU Process: Dry Cleaning Status: Revoked Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
8	478	NE	525509 185096	Address: Shamrock Express Cleaners, 210 West End Lane, NW6 1UU Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
9	483	SW	524809 184456	Address: Brondes, 328B Kilburn High Road, NW6 2QN Process: Dry Cleaning Status: Current 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:

1

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

ID	Distance (m)	Direction	NGR	Details	
1	215	W	525024 184626	Incident Date: 29-Jan-2002 Incident Identification: 55190 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

### 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

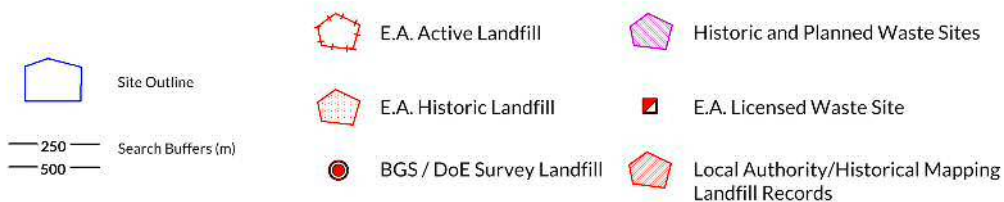
How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

0

Database searched and no data found.

---





# 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:

1

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	795	E	526000 184800	Site Address: Canfield Place, London NW6 Waste Licence: - Site Reference: DON009 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: - First Recorded: - Last Recorded: -

### 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 study site:

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:

2

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

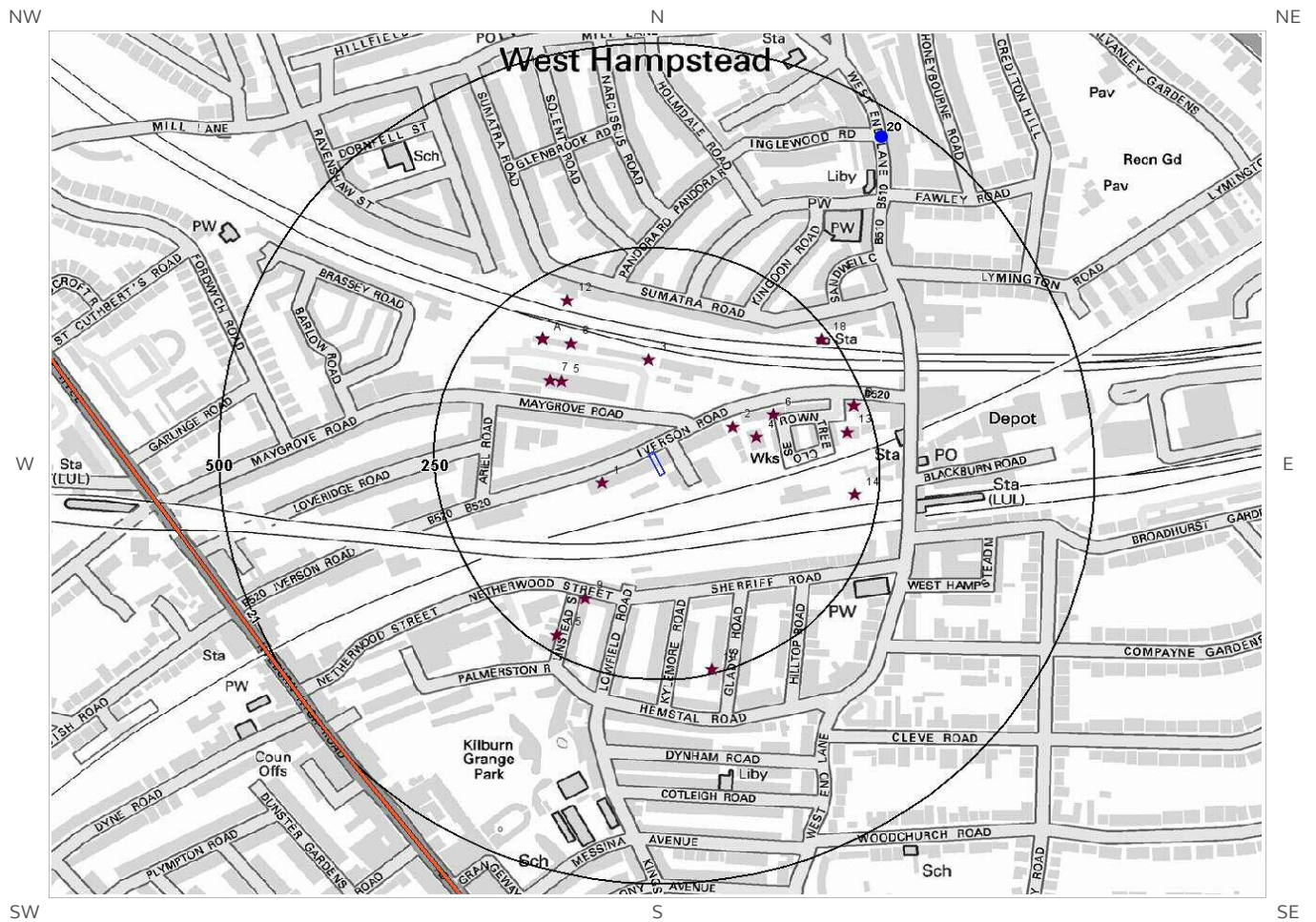
ID	Distance (m)	Direction	NGR	Details		
1	49	N	525145 184822	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1973	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
2	83	N	525260 184804	Type of Site: Car Breaker's Yard Site Address: N/A	Planning Application Reference: N/A Date: 1973	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

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

0

Database searched and no data found.

## 4. Current Land Use Map



© Crown copyright and database rights 2016.  
Ordnance Survey license 100035207.



## 4. Current Land Uses

### 4.1 Current Industrial Data

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

19

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	65	SW	Keogh Joinery	525168 184671	134, Iverson Road, London, NW6 2HH	General Construction Supplies	Industrial Products
2	96	NE	C T & S Joinery Ltd	525320 184739	188, Iverson Road, London, NW6 2HL	General Construction Supplies	Industrial Products
3	114	N	German Autocare	525223 184822	1-2, Liddell Road, London, NW6 2EW	Vehicle Repair, Testing and Servicing	Repair and Servicing
4	115	NE	Works	525348 184727	NW6	Unspecified Works Or Factories	Industrial Features
5	135	NW	Tape House	525122 184795	24, Liddell Road, London, NW6 2EW	Distribution and Haulage	Transport, Storage and Delivery
6	145	NE	The Tool & Gauge Company UK Ltd	525367 184754	Flat E 200, Iverson Road, London, NW6 2HL	General Construction Supplies	Industrial Products
7	147	NW	Prototype 21 Ltd	525108 184797	22-23, Liddell Road, London, NW6 2EW	Clothing, Components and Accessories	Consumer Products
8	164	NW	Volkswagen Audi Garages	525132 184842	11, Liddell Road, London, NW6 2EW	Vehicle Repair, Testing and Servicing	Repair and Servicing
9	173	SW	Wheel Fix It	525149 184529	1, Linstead Street, London, NW6 2HB	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
10A	187	NW	West Hampstead Motors Ltd	525100 184846	15-16, Liddell Road, London, NW6 2EW	Vehicle Repair, Testing and Servicing	Repair and Servicing
11A	189	NW	Studio 11 Our Family Ltd	525100 184848	15-16, Liddell Road Industrial Estate, London, NW6 2EW	Recording Studios and Record Companies	IT, Advertising, Marketing and Media Services
12	211	NW	Electricity Sub Station	525129 184895	NW6	Electrical Features	Infrastructure and Facilities
13	218	E	G E P UK	525454 184733	224, Iverson Road, London, NW6 2HL	Special Purpose Machinery and Equipment	Industrial Products
14	222	E	Electricity Sub Station	525463 184657	NW6	Electrical Features	Infrastructure and Facilities
15	229	SW	Electricity Sub Station	525116 184485	NW6	Electrical Features	Infrastructure and Facilities
16B	235	E	Topcret UK Ltd	525461 184766	Unit 4 Hampstead West 224, Iverson Road, London, NW6 2HL	Carpets, Flooring, Rugs and Soft Furnishings	Consumer Products
17B	235	E	Traffic Survey Partners	525461 184766	Unit 4 Hampstead West 224, Iverson Road, London, NW6 2HL	Electronic Equipment	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
18	239	NE	West Hampstead Thameslink Rail Station	525424 184847	NW6	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
19	244	S	N K Chauffeurs	525297 184442	9, Gladys Road, London, NW6 2PU	Vehicle Hire and Rental	Hire Services

## 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)	Direction	NGR	Company	Address	LPG	Status
20	468	NE	525493 185095	Obsolete	Cavendish Motors, West End Lane, West End Lane, London, Greater London, NW6 1XF	Not Applicable	Obsolete

## 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:

1

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

ID	Distance (m)	Direction	Details
21	498	SW	<p>Cable Set: ELSTREE - ST JOHNS WOOD CABLE SECTION 1</p> <p>Cable Route: ELSTREE - ST JOHNS WOOD</p> <p>Cable Make: ABB 400KV XLPE CABLE AL SHEATH</p> <p>Cable Type: A/C</p> <p>Operating Voltage (kV): 400</p> <p>Year of installation: 2005</p> <p>Cable in tunnel: Y</p>

#### 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: 0

Database searched and no data found.

---

# 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

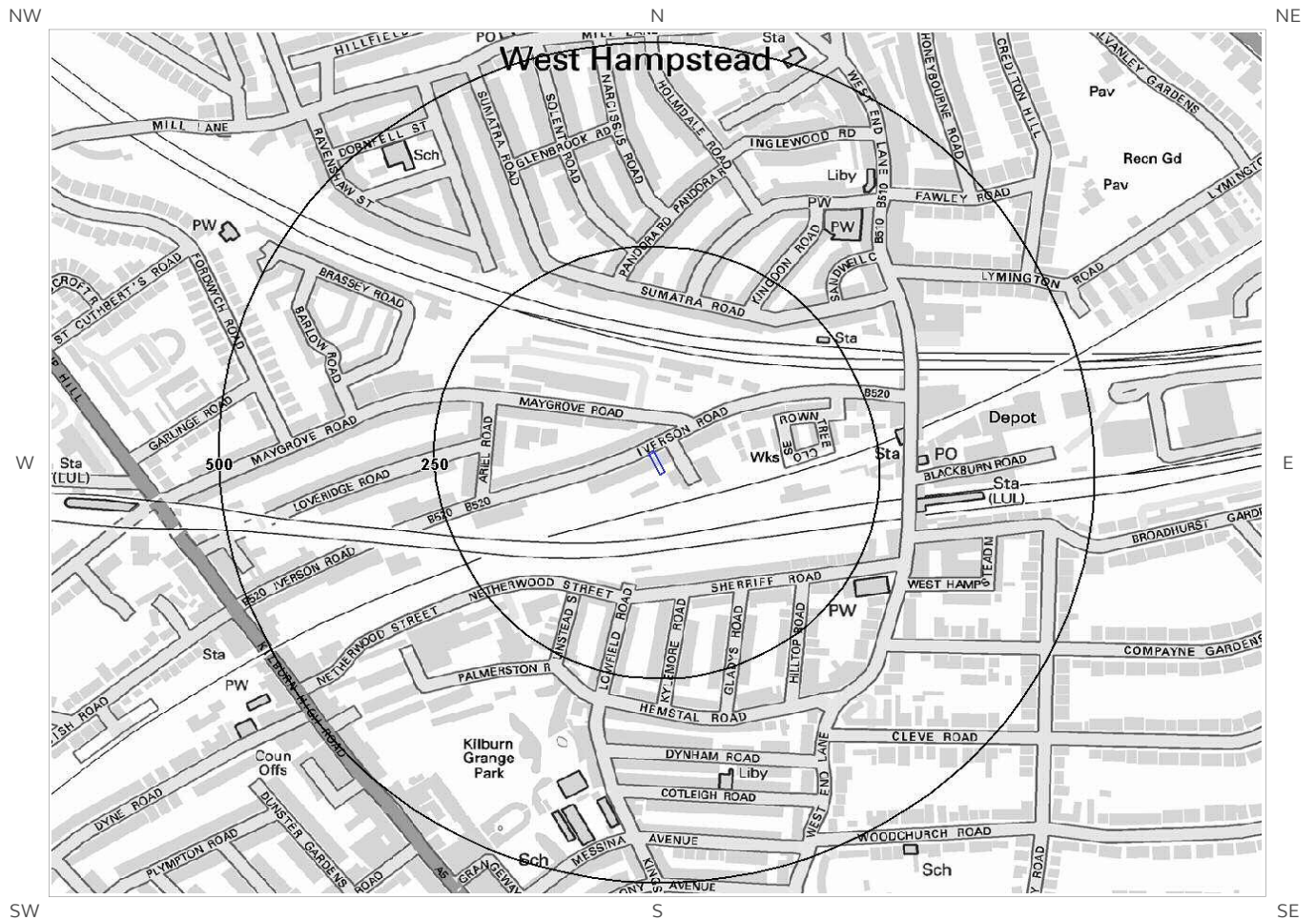
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

---

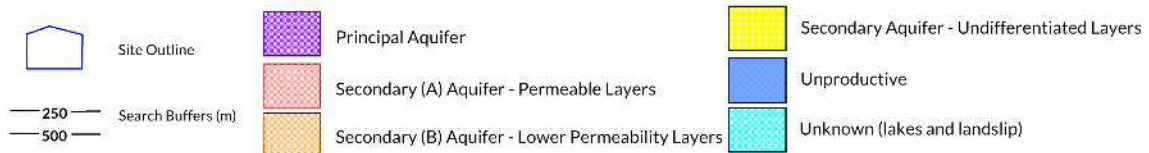


# 6 Hydrogeology and Hydrology

## 6a. Aquifer Within Superficial Geology

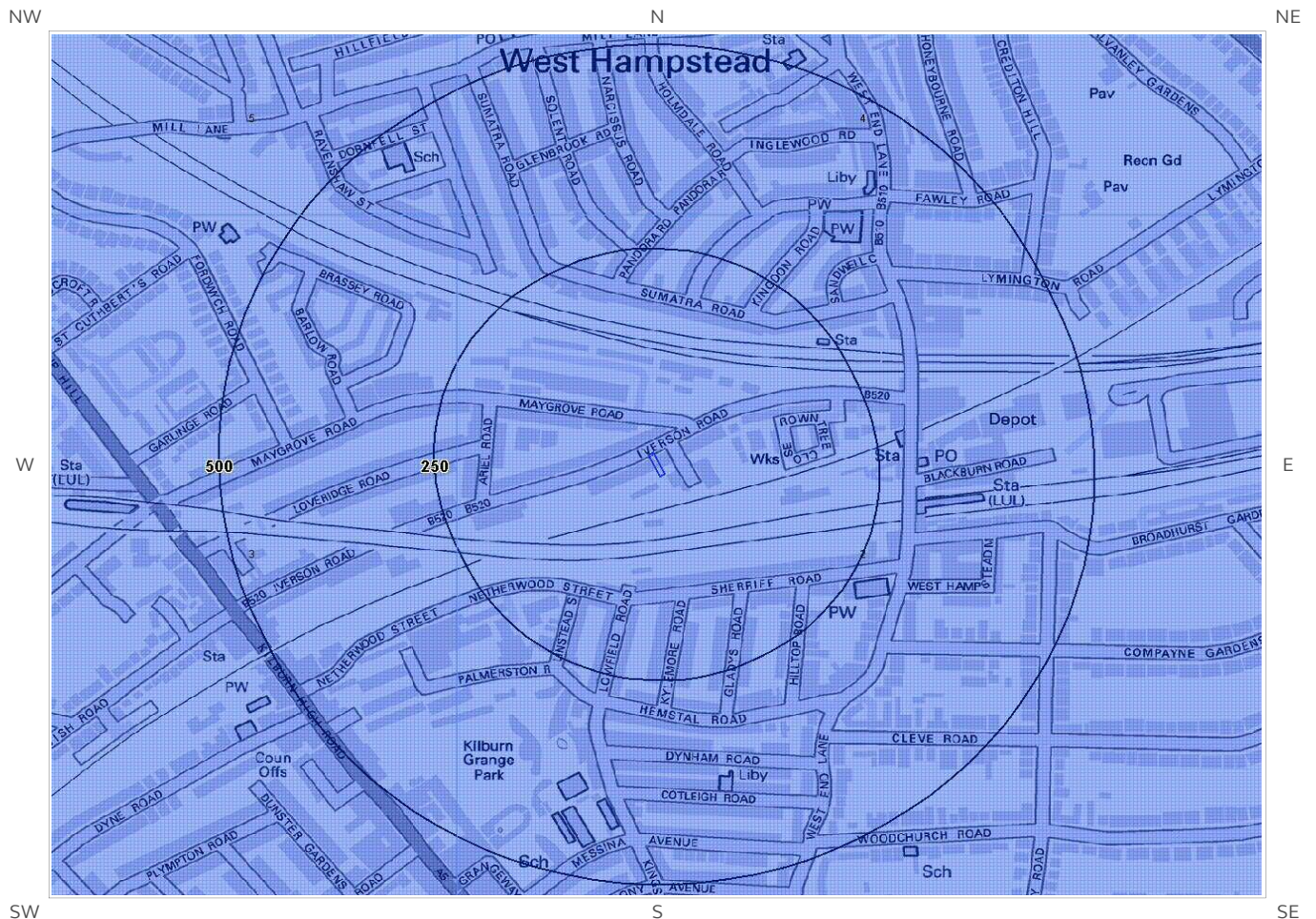


© Crown copyright and database rights 2016  
Ordnance Survey license 100035207.

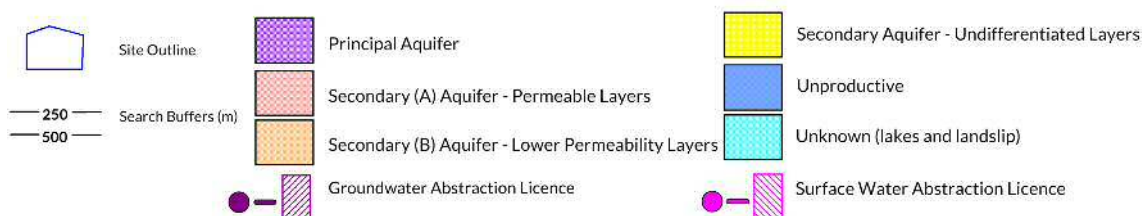




# 6b. Aquifer Within Bedrock Geology and Abstraction Licenses

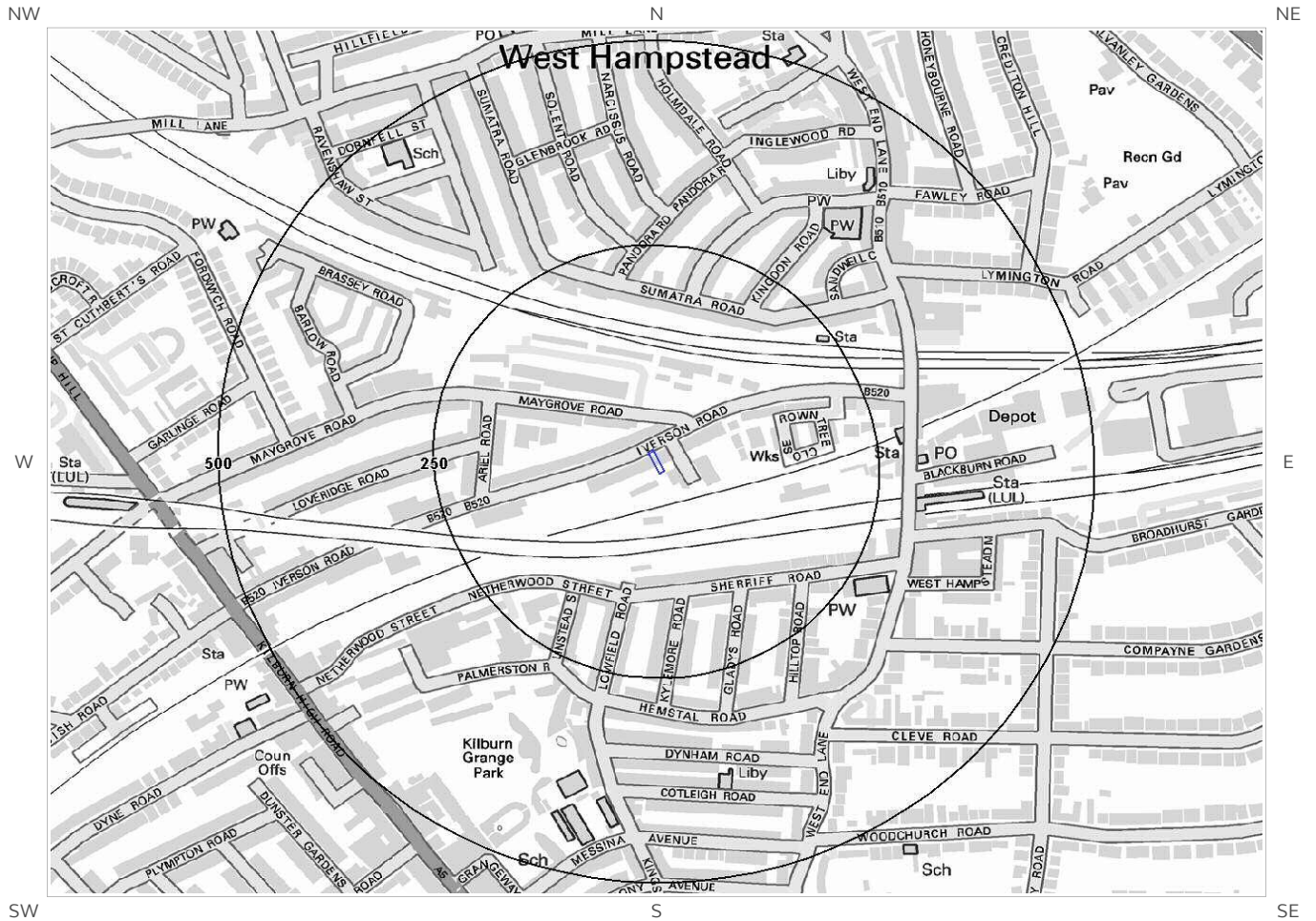


© Crown copyright and database rights 2016  
Ordnance Survey license 100035207.

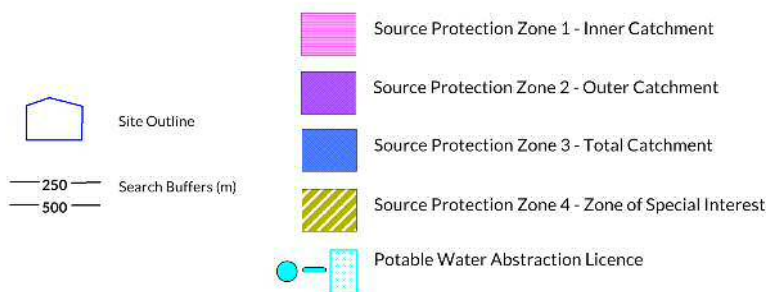




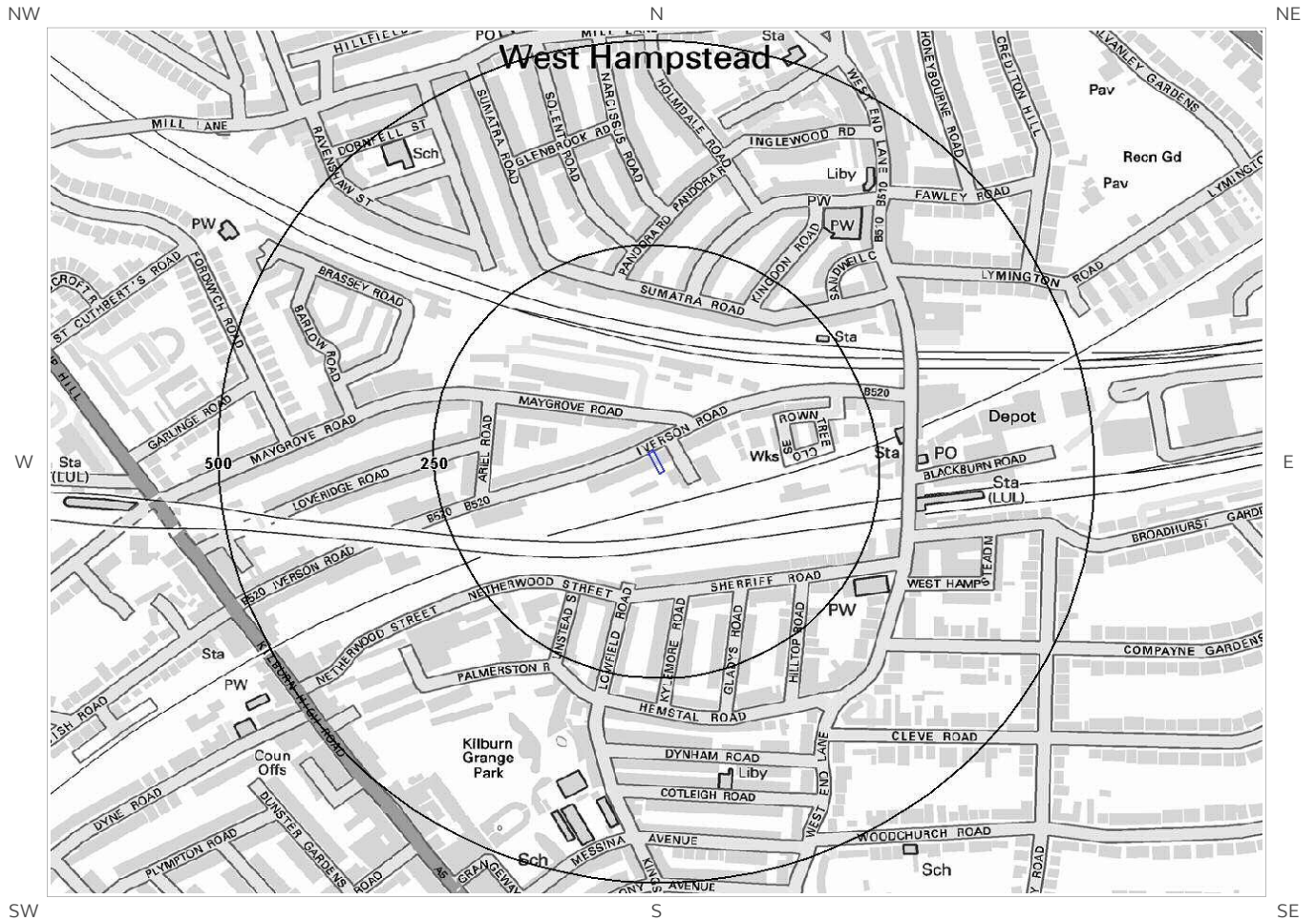
# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



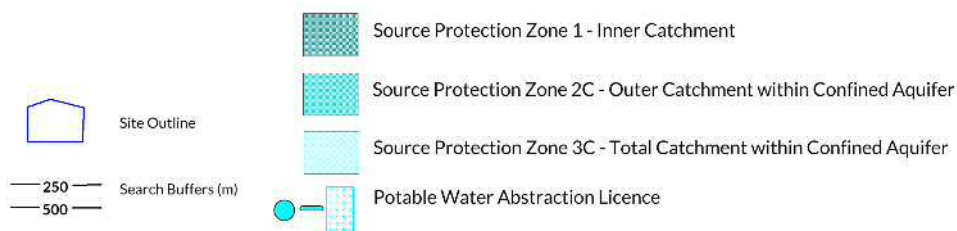
© Crown copyright and database rights 2016  
Ordnance Survey license 100035207.



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

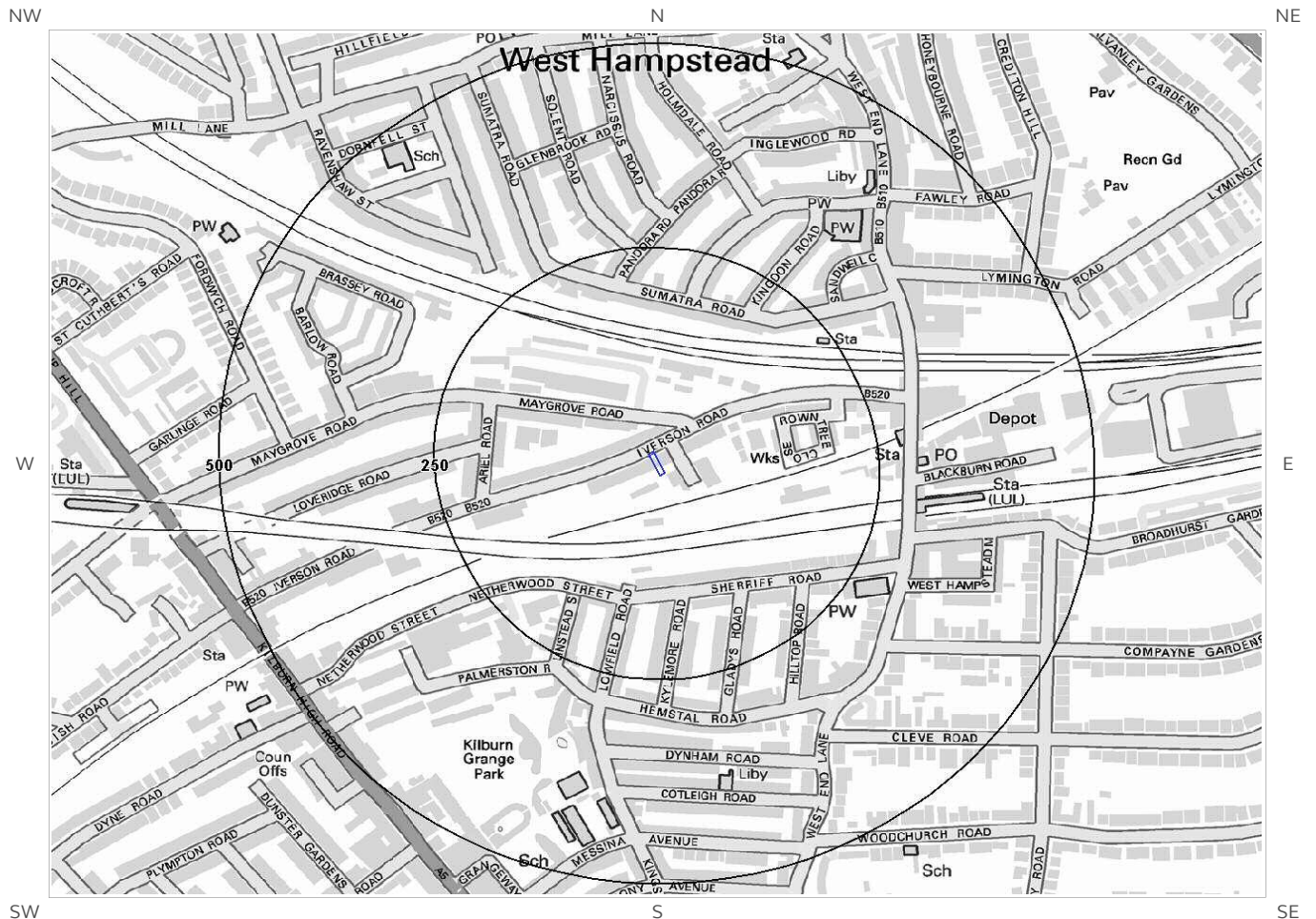


© Crown copyright and database rights 2016  
Ordnance Survey license 100035207.

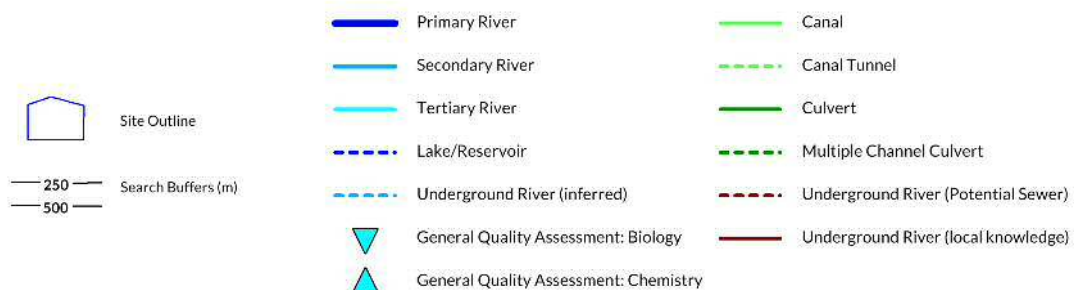




# 6e. Hydrology – Detailed River Network and River Quality



© Crown copyright and database rights 2016.  
Ordnance Survey license 100035207.



# 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? No

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 aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
2	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
3	224	W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
4	291	N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
5	370	NW	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	Distance (m)	Direction	NGR	Details
Not shown	1566	E	526750 184261	<div> <div> Status: Active  Licence No: TH/039/0039/087  Details: General Washing/Process Washing  Direct Source: Thames Groundwater  Point: Swiss Cottage Open Space- Borehole  Data Type: Point  Name: LONDON BOROUGH OF CAMDEN </div> <div> Annual Volume (m³): 10512  Max Daily Volume (m³): 28.8  Original Application No: NPS/WR/014567  Original Start Date: 5/12/2013  Expiry Date: 31/3/2025  Issue No: 1  Version Start Date: 5/12/2013  Version End Date: </div> </div>

ID	Distance (m)	Direction	NGR	Details
Not shown	1566	E	526750 184261	<p>Status: Active  Licence No: TH/039/0039/087  Details: Lake &amp; Pond Throughflow  Direct Source: Thames Groundwater  Point: Swiss Cottage Open Space- Borehole  Data Type: Point  Name: LONDON BOROUGH OF CAMDEN</p> <p>Annual Volume (m³): 10512  Max Daily Volume (m³): 28.8  Original Application No: NPS/WR/014567  Original Start Date: 5/12/2013  Expiry Date: 31/3/2025  Issue No: 1  Version Start Date: 5/12/2013  Version End Date:</p>
Not shown	1566	E	526750 184261	<p>Status: Active  Licence No: TH/039/0039/087  Details: Spray Irrigation - Direct  Direct Source: Thames Groundwater  Point: Swiss Cottage Open Space- Borehole  Data Type: Point  Name: LONDON BOROUGH OF CAMDEN</p> <p>Annual Volume (m³): 10512  Max Daily Volume (m³): 28.8  Original Application No: NPS/WR/014567  Original Start Date: 5/12/2013  Expiry Date: 31/3/2025  Issue No: 1  Version Start Date: 5/12/2013  Version End Date:</p>
Not shown	1609	E	526800 184280	<p>Status: Historical  Licence No: 28/39/39/0219  Details: Spray Irrigation - Direct  Direct Source: Thames Groundwater  Point: Swiss Cottage Open Space- Borehole  Data Type: Point  Name: LONDON BOROUGH OF CAMDEN</p> <p>Annual Volume (m³): 10512  Max Daily Volume (m³): 28.8  Original Application No: WRA/N/1407  Original Start Date: 12/8/2005  Expiry Date: 31/3/2013  Issue No: 1  Version Start Date: 1/4/2008  Version End Date:</p>

## 6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

## 6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

## 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? No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or 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 increased 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.

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 potential within 500m of the study site? 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? No

Database searched and no data found.

---

## 6.11 Surface Water Features

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

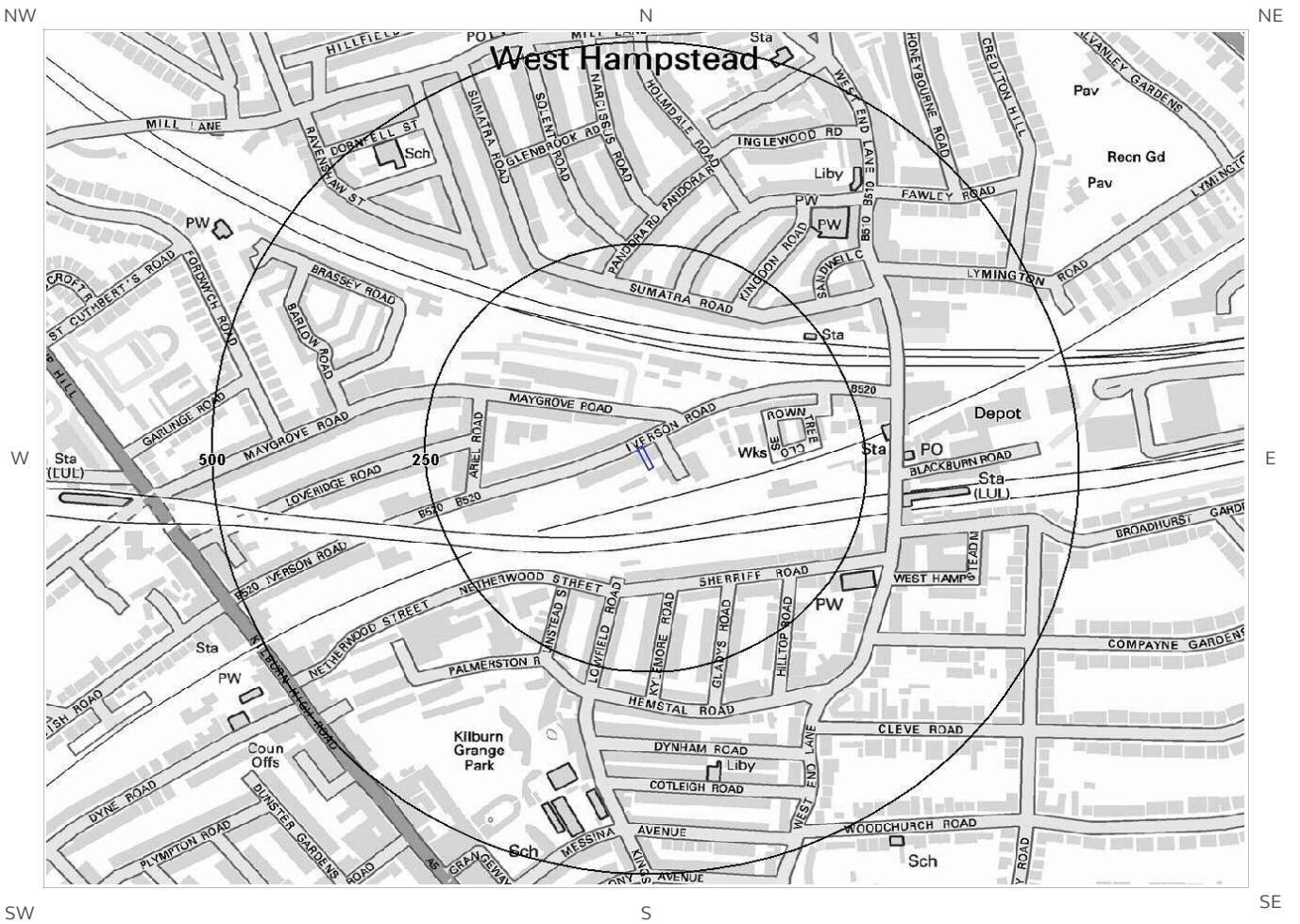
No

Database searched and no data found.

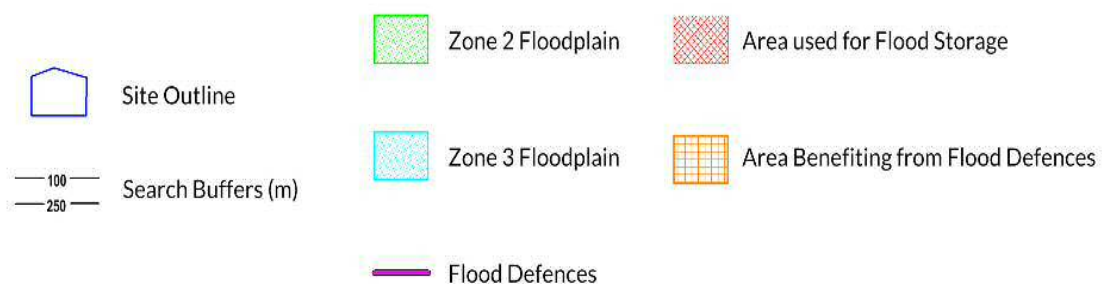
---



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

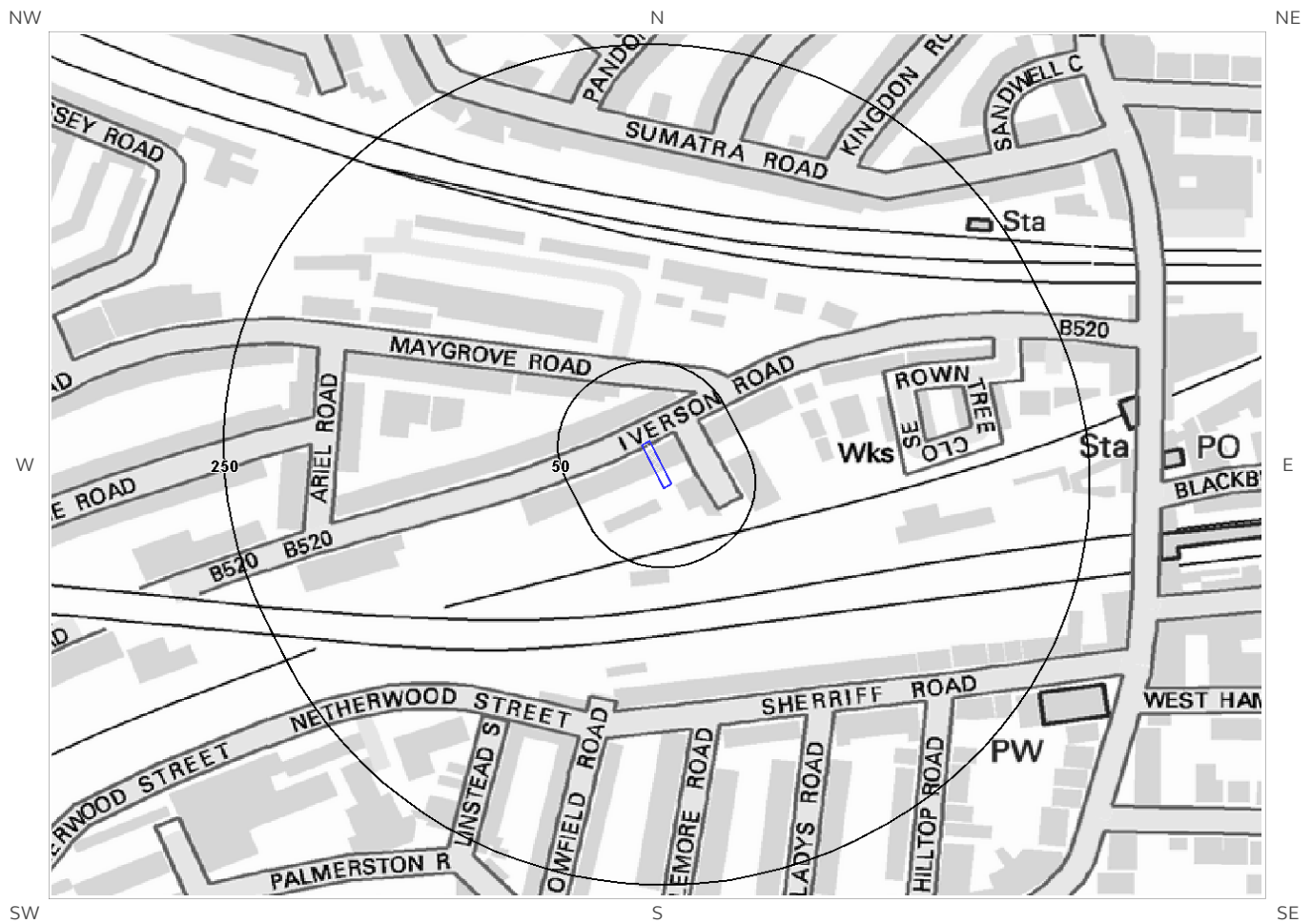


© Crown copyright and database rights 2016.  
Ordnance Survey license 100035207.

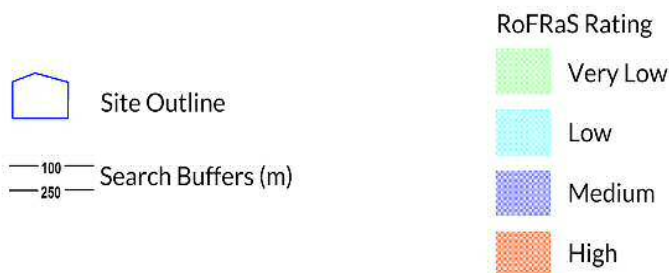




# 7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map



© Crown copyright and database rights 2016.  
Ordnance Survey license 100035207.



# 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? No  
Database searched and no data found.

---

## 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? No

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

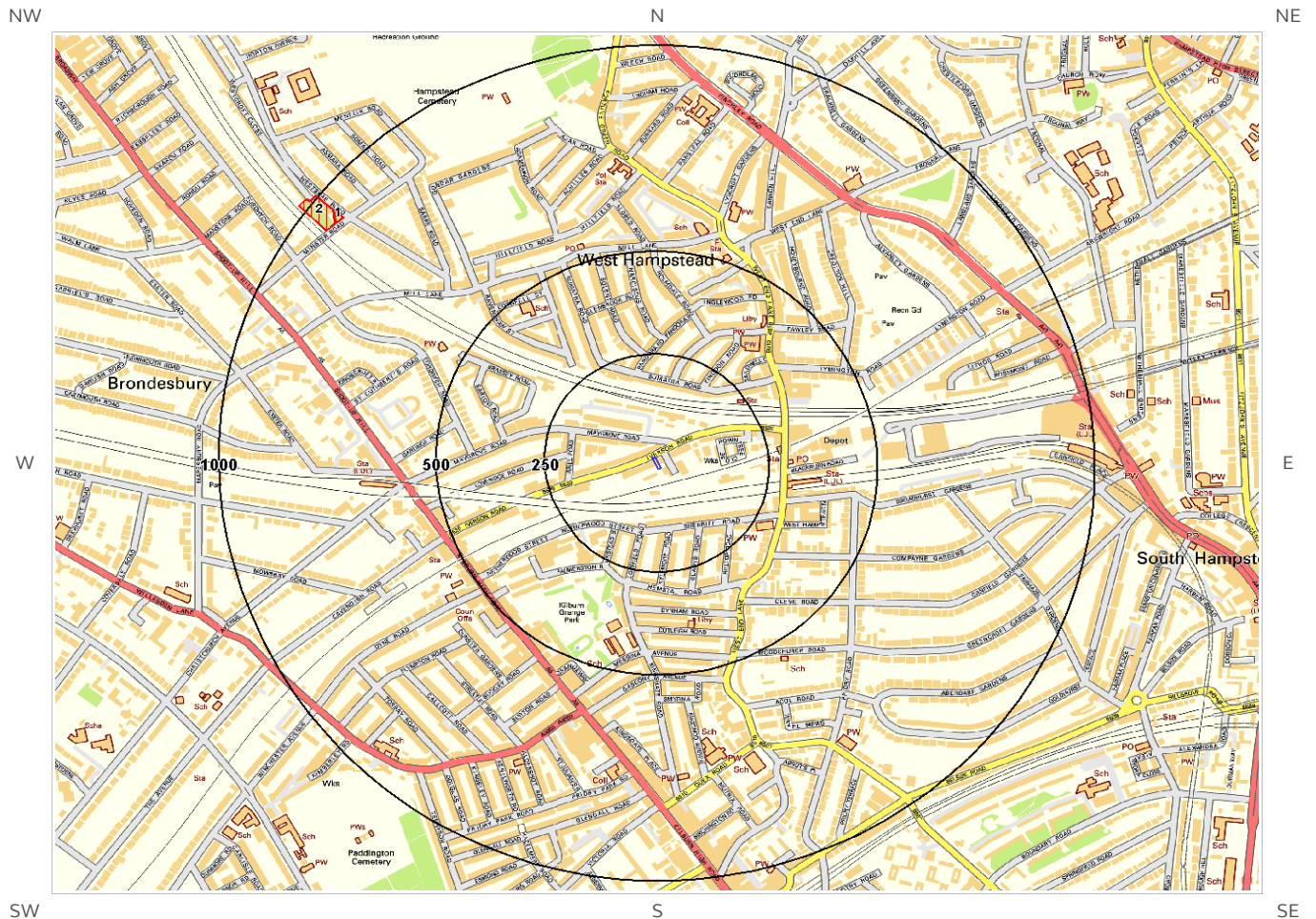
What is the British Geological Survey confidence rating in this result?

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



© Crown copyright and database rights 2016.  
Ordnance Survey license 100035207.



# 8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

## 8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

## 8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

## 8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

## 8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

## 8.5 Records of Ramsar 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:

0

Database searched and no data found.

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

2

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
1	923	NW	Westbere Copse	Natural England
2	929	NW	Westbere Copse	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:

0

Database searched and no data found.

#### 8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

---

#### 8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

---

#### 8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

---



# 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.

\* 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.

\* 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? No

Guidance: No Guidance Required.

---

# Contact Details

**Groundsure Helpline**  
Telephone: 08444 159 000  
info@groundsure.com

**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](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries:  
[enquiries@bgs.ac.uk](mailto: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](http://www.environment-agency.gov.uk)  
Email: [enquiries@environment-agency.gov.uk](mailto: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](http://www.gov.uk/phe)  
Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000

**The Coal Authority**  
200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://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 0AS, 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.

**“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](http://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 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

3.1 The 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

4.1 The 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

5.1 Groundsure 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 Clause

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;
- (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
- (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.

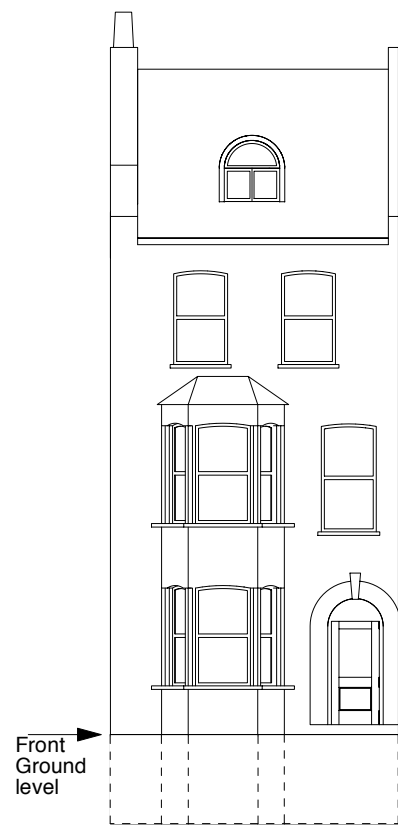
12.13 Groundsure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

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](http://www.tpos.co.uk) or email: [admin@tpos.co.uk](mailto:admin@tpos.co.uk)

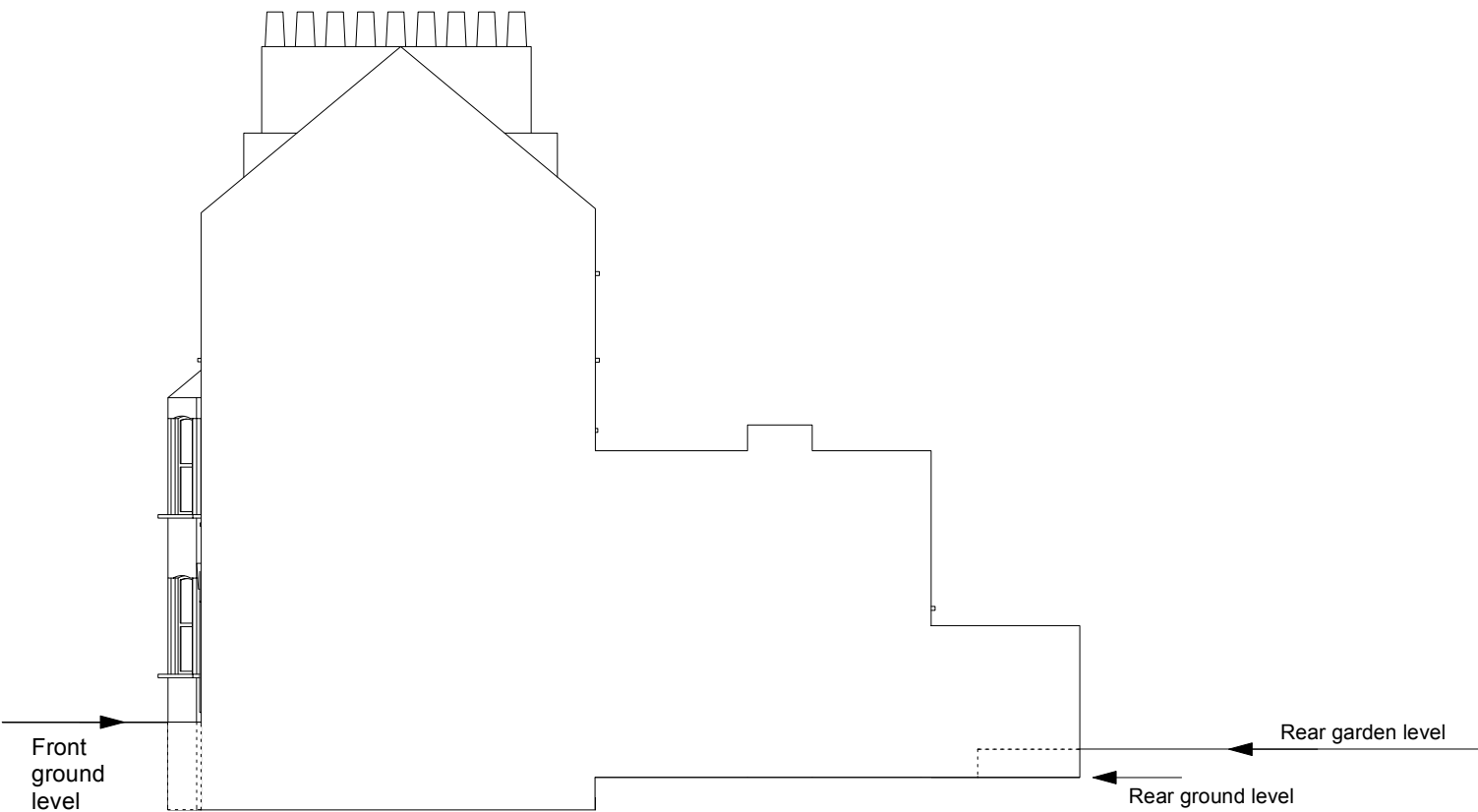
12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms 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

# APPENDIX B

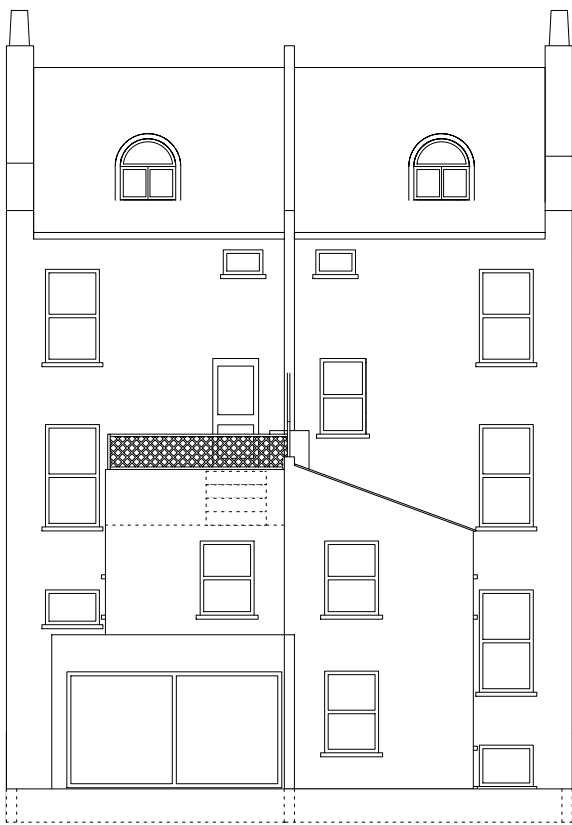
## Site Plans



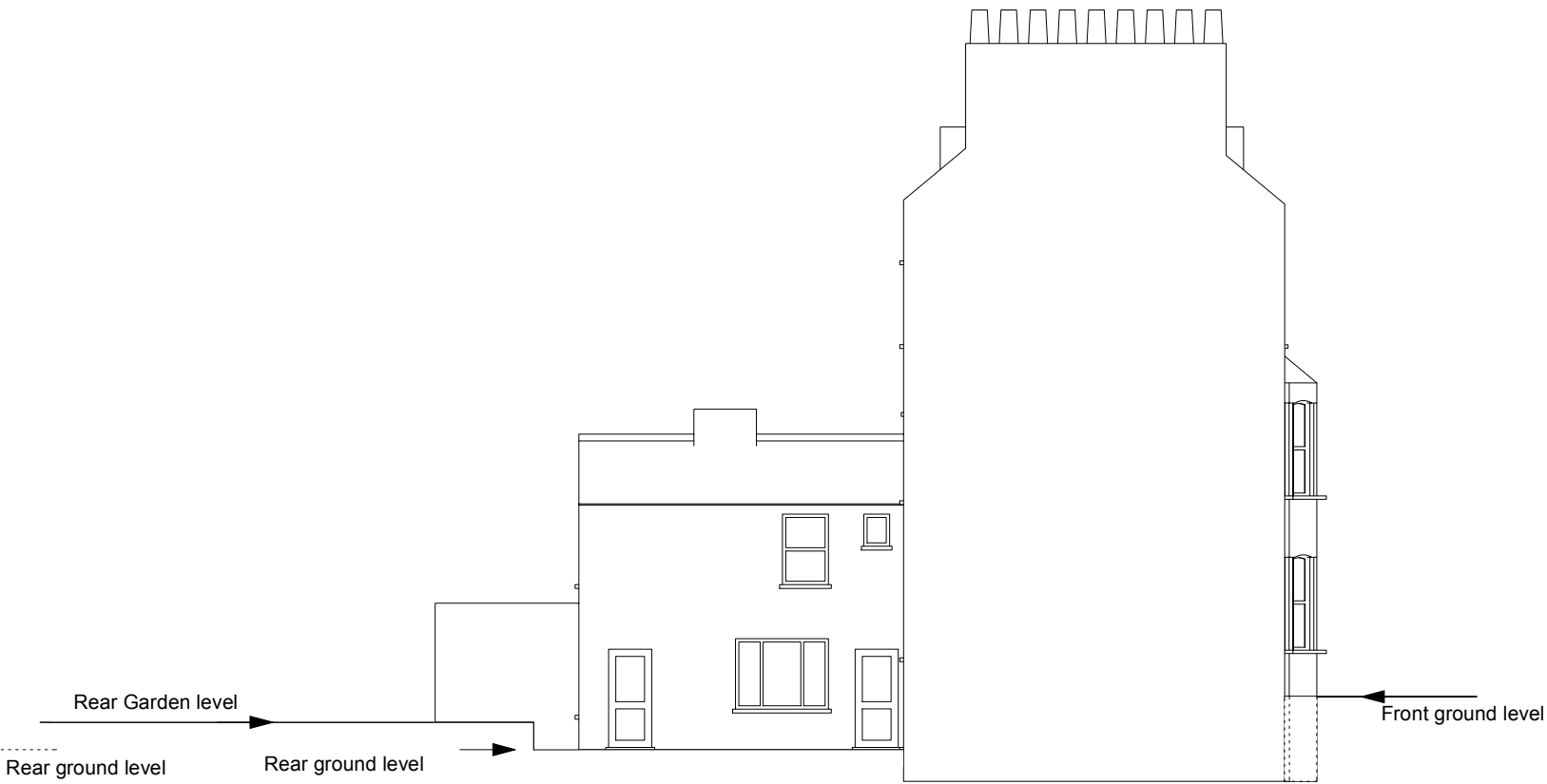
Front view



View from 156 looking NE



Rear of next door 156  
Rear view



View from 160 looking SW

Name  
Mr Thomas Schneider

Address  
158 Iversion Road, NW6 2HH

Scale @ A3  
1 : 150

Date  
18/08/2015

Title  
Existing Elevations

Drawing no.  
01.100



Gross internal usable space 195m2 2099 ft2

Name  
Mr Thomas Schneider

Address  
158 Iversion Road, NW6 2HH

Scale @ A3  
1 : 150

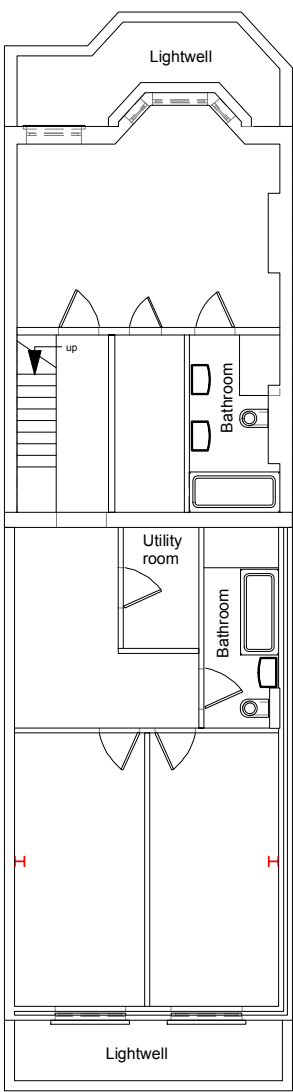
Date  
18/08/2015

Title  
Existing Floor Plans

Drawing no.  
01.200

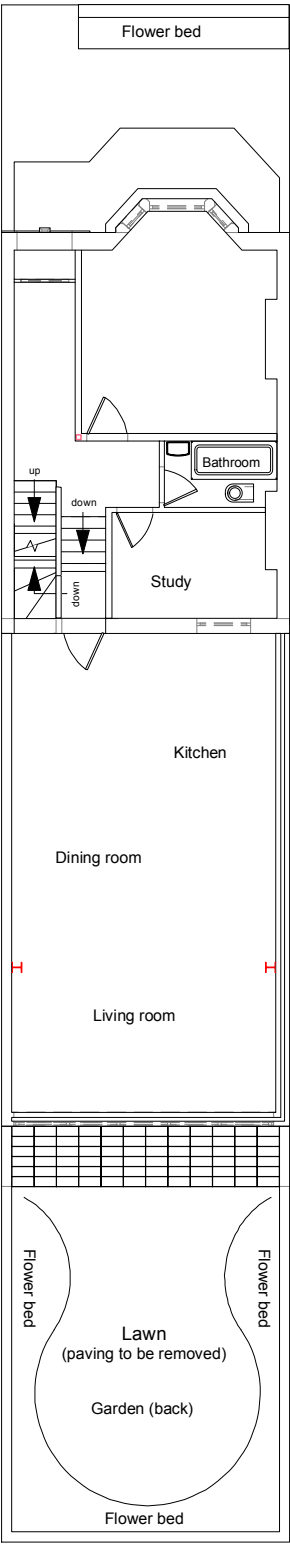


Basement



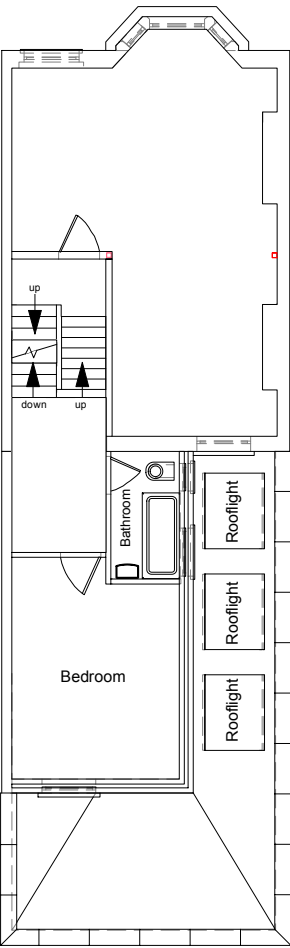
92m2

Ground floor



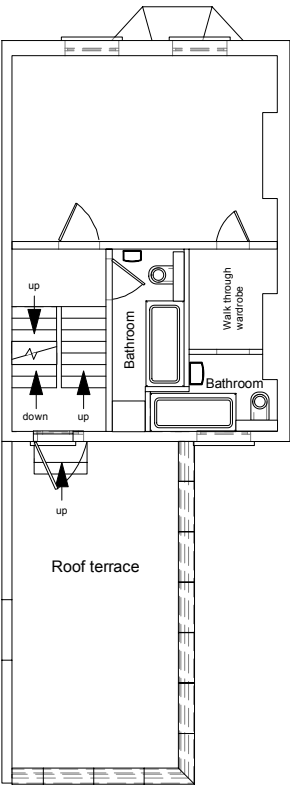
92m2

First floor



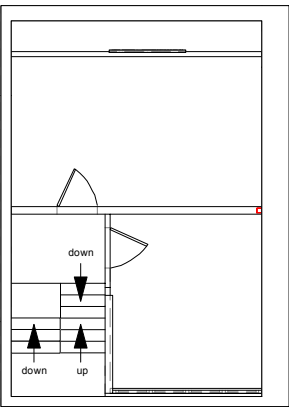
62m2

Second floor



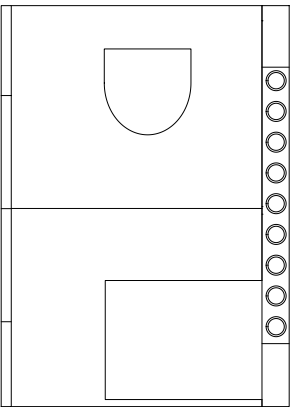
38m2

Third floor



33m2

Roof



Total 317m2    3412ft 2  
increase of 122m2   1313ft2

Name  
Mr Thomas Schneider

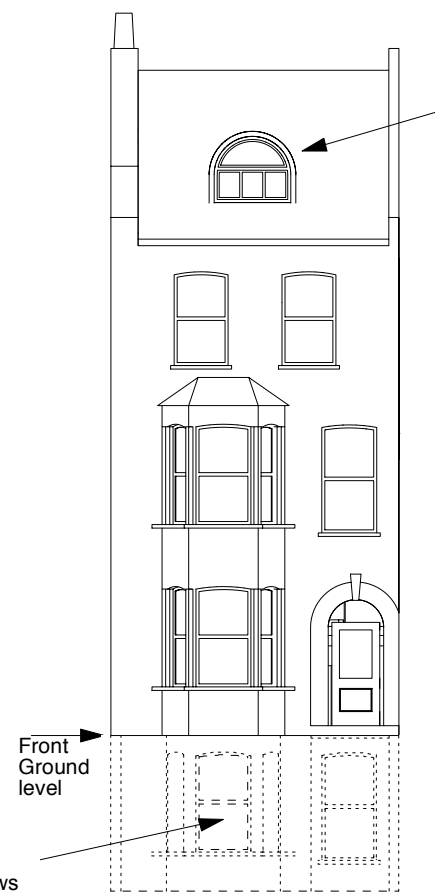
Address  
158 Iversion Road, NW6 2HH

Scale @ A3  
1 : 150

Date  
20/04/2015

Title  
Proposed Floor Plans

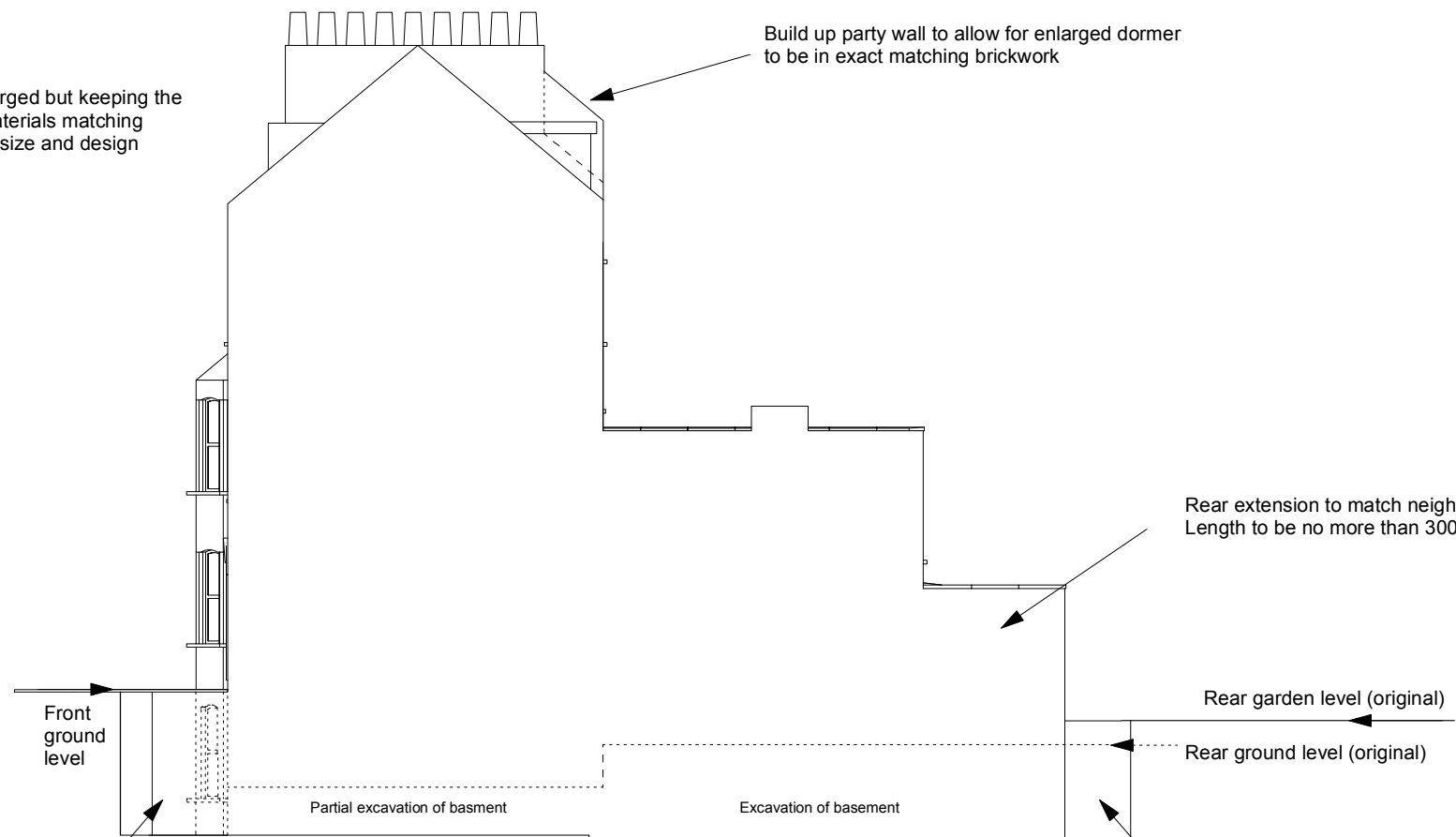
Drawing no.



Front view

New wooden sash wondows to match existing

Dormer enlarged but keeping the style and materials matching neighbours size and design



View from 156 looking NE

Build up party wall to allow for enlarged dormer to be in exact matching brickwork

Rear extension to match neighbours existing extension at 156 Iverson. Length to be no more than 3000mm from existing rear wing. Height 3000mm

Front ground level

Partial excavation of basment

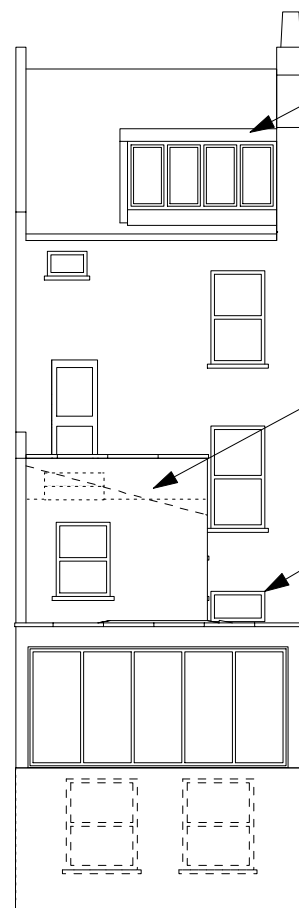
Excavation of basement

Rear garden level (original)

Rear ground level (original)

New light well

New light well



Rear view

Dormer enlarged

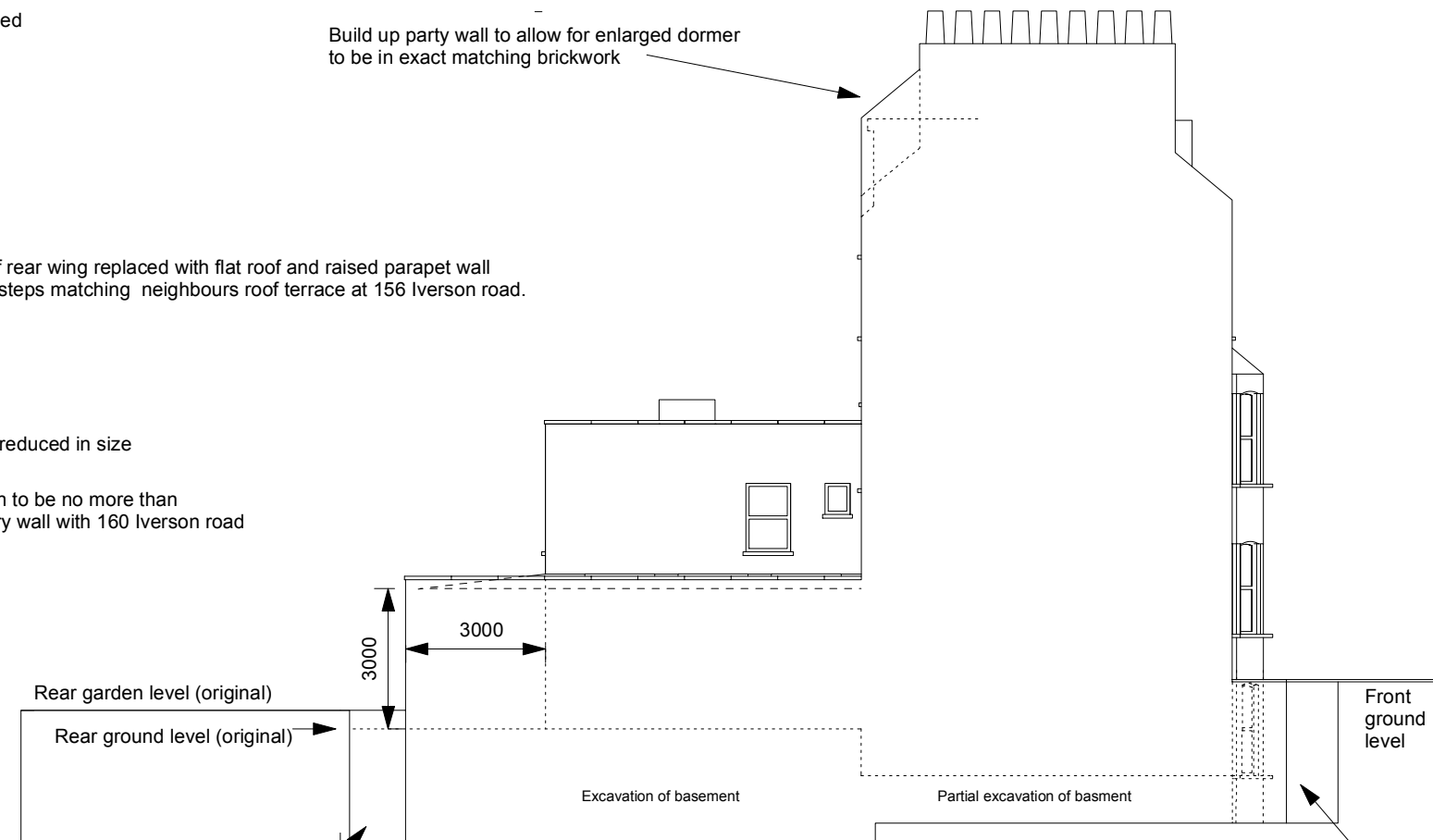
Sloping roof of rear wing replaced with flat roof and raised parapet wall with door and steps matching neighbours roof terrace at 156 Iverson road.

Window to be reduced in size

Rear extension to be no more than 3m at boundary wall with 160 Iverson road

Rear garden level

Rear ground level (original)



View from 160 looking SW

Build up party wall to allow for enlarged dormer to be in exact matching brickwork

Rear garden level (original)

Rear ground level (original)

Excavation of basement

Partial excavation of basment

Front ground level

New light well

New light well

Name  
Mr Thomas Schneider

Address  
158 Iverson Road, NW6 2HH

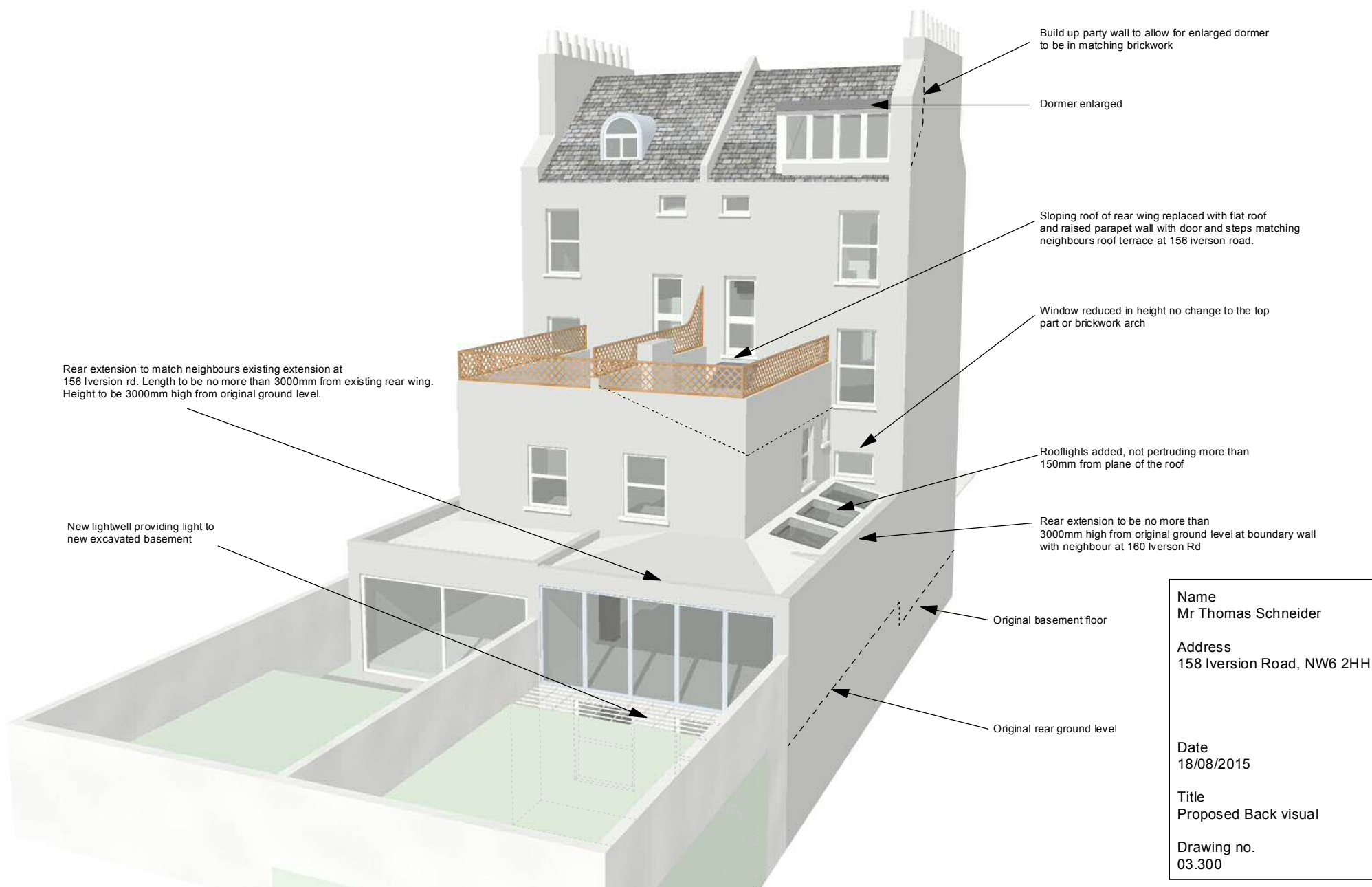
Scale @ A3  
1 : 150

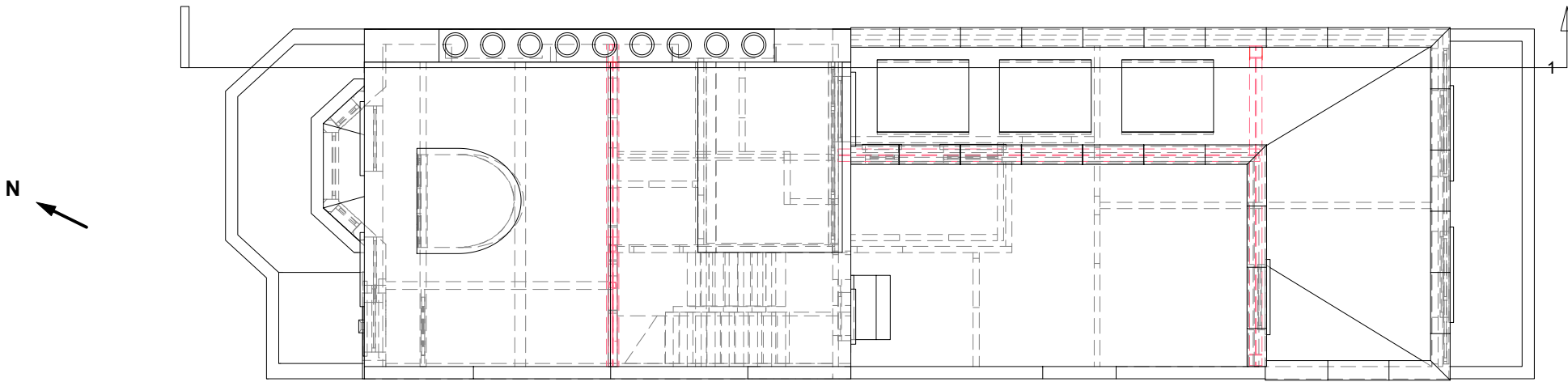
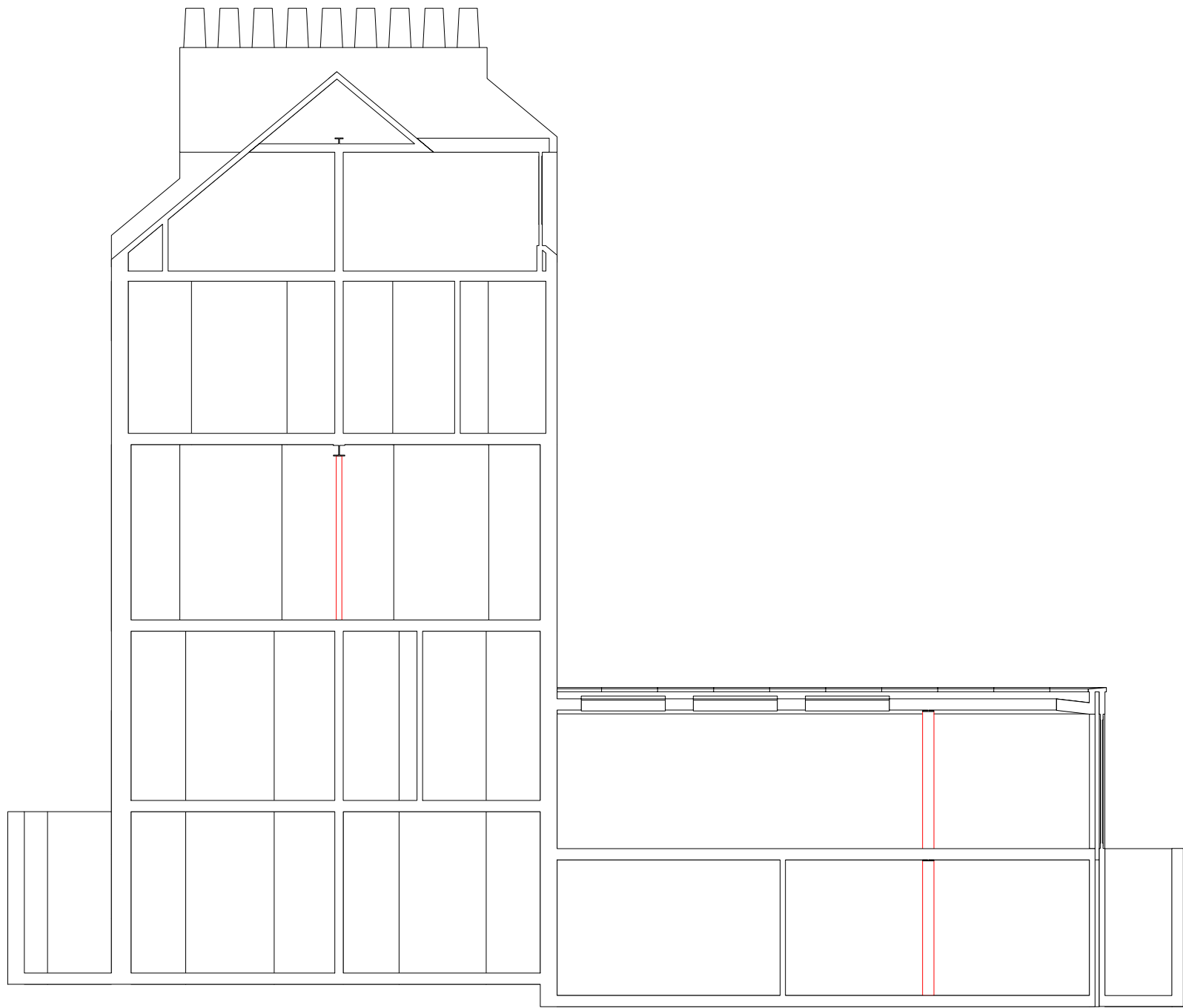
Date  
18/08/2015

Title  
Proposed Elevations

Drawing no.  
03.100







Name  
Mr Thomas Schneider

Address  
158 Iversion Road, NW6 2HH

Scale @ A3  
1 : 100

Date  
19/04/2016

Title  
Section Drawings 01