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**SCHEME A, FORMER STAR PUBLIC HOUSE,
HILLINGDON, UB10 0LZ
Phase 1 Contaminated Land Assessment**

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**FORMER STAR PUBLIC HOUSE, HILLINGDON, UB10 0LZ
Phase 1 Contaminated Land Assessment**

SCHEME A, FORMER STAR PUBLIC HOUSE SITE, HILLINGDON, UB10 0LZ, Phase 1 Contaminated Land Assessment

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1.0 INTRODUCTION

Brief

- 1.1 Create Consulting Engineers Ltd was commissioned by PPM Planning, on behalf of Crossier Properties Ltd (the Client), to provide a Phase 1 Contaminated Land Assessment to support a planning application for the development of Scheme A for the former Star Public House (the Site) for combined residential and commercial end-use.

Development Proposal

- 1.2 The Site currently comprises a vacant plot of land, the Star Public House having been demolished prior to this report, surrounded by predominantly residential housing and small commercial/retail developments.

- 1.3 The Site boundary is included as Figure 1.1 below.



Figure 1.1: Site Plan (modified extract from Chassay Studio Architects Design and Access Statement, March 2019)

- 1.4 The Client plans to submit a planning application for a combined commercial and residential development. This would incorporate a four storey building accommodating 10No. flats, commercial space and 2 x 2 storey houses, with car and cycle parking and amenity spaces. The proposed ground floor layout is provided as Figure 1.2 overleaf.



Figure 1.2: Proposed Site Development (Ground Floor Plan 1664/A/03)

Objective

- 1.5 To undertake a contaminated land assessment comprising a desk study review of existing information relating to the Site and surrounding area, in accordance with best practice and planning guidance such as that set out in the National Planning Policy Framework, 2019 and the Environment Agency's Model Procedures for the Management of Land Contamination, CLR 11 2004.
- 1.6 A Site reconnaissance survey was undertaken to assess the Site condition and surrounding land uses and a photographic record is provided in Appendix C.

Constraints and Limitations

- 1.7 The copyright of this report is vested in Create Consulting Engineers Ltd and the Client, Crossier Properties Ltd. The Client, or their appointed representatives, may copy the report for purposes in connection with the development described herein. It shall not be copied by any other party or used for any other purposes without the written consent of Create Consulting Engineers Ltd or the Client.
- 1.8 Create Consulting Engineers Ltd accepts no responsibility whatsoever to other parties to whom this report, or any part thereof, is made known. Any such other parties rely upon the report at their own risk.
- 1.9 Create Consulting Engineers Ltd has endeavoured to assess all information provided to them during this appraisal. Should additional information become available which may affect the

opinions expressed in this report, Create Consulting reserves the right to review this information and, if warranted, to modify the opinions presented in the report accordingly.

- 1.10 The report summarises information from a number of external sources and is unable to offer any guarantees or warranties for the completeness or accuracy of information relied upon. Information from third parties has not been verified by Create Consulting Engineers Ltd unless otherwise stated in this report.
- 1.11 It should be noted that the risks which are identified in this report are perceived risks based on the available information at the time of writing and that the actual risks associated can only be assessed following a physical investigation of the Site.
- 1.12 The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the Site.

2.0 SOURCES OF INFORMATION

- 2.1 The information contained in this report is based on a review of readily available information pertaining to the Site.

Records Review

- 2.2 Key reports, drawings and accessed websites pertaining to this assessment are detailed in Table 2.1 below.

Document/Website	Author/Publisher	Date
Flood Maps, Groundwater Mapping, landfill Sites, pollution incidents, reservoir flood map and nitrate vulnerable zones – https://flood-map-for-planning.service.gov.uk/	UK Government	Accessed June 2019
BGS Geology of Britain Viewer - https://mapapps.bgs.ac.uk/geologyofbritain	British Geological Survey	Accessed June 2019
BGS Geoindex – Geology and borehole records - www.bgs.ac.uk/geoindex	British Geological Survey	Accessed June 2019
Elevation Finder	www.freemaptools.com	Accessed June 2019
Groundsure Enviro Insight Report (GS-6107109)	Groundsure Ltd	18 June 2019
Groundsure Maps Insight (GS-6107110)	Groundsure Ltd	18 June 2019
Google Maps & Google Earth	Google	Accessed June 2019

Table 2.1: Key Information Sources

3.0 SITE LOCATION AND DESCRIPTION

Site Location

- 3.1 The Site is located in Hillingdon, on the intersection of Uxbridge Road and Star Road, approximately 1km to the north east of Hillingdon Hospital and centred at National Grid reference 507965E, 182311N. The elevation of the Site is approximately 49.0m above Ordnance Datum (aOD).
- 3.2 An approximate Site location plan is provided as Figure 3.1 below.



Figure 3.1: Site Location Plan (Geoindex, 2019)

- 3.3 The Site covers approximately 0.08ha and comprises a vacant rectangular site and area of demolition bound by timber fencing.

Site Description

- 3.4 A Site walkover survey was undertaken on 24 June 2019, as detailed in the following paragraphs. Photographs taken during the survey are presented in Appendix C.
- 3.5 The Site was accessed from Marlborough Parade to the south.
- 3.6 The Site was bound by Marlborough Parade to the south (see Photo 1, Appendix C) and by Star Road to the east (see Photo 2, Appendix C). Uxbridge Road was adjacent and parallel to Marlborough Parade. The northern and western boundaries were adjacent to a residential dwelling and car parking area respectively. A building, named as Transport House, was present adjacent to the south west of the Site (see Photo 1, Appendix C).
- 3.7 The Site was accessed through a locked gate, bound by a combination of timber and concrete fencing and was generally overgrown. At the front of the Site was concrete hardstanding with waste materials and demolition materials present (see Photo 3, Appendix C). Vegetation was present in the northern part of the Site (and this area was inaccessible during the site walkover) which formed part of the former garden and trees were present along the northeast boundary (see Photo 7, Appendix C). The southern part of the Site generally comprised wooden flooring, hardstanding and building foundations with some semi-mature shrubs and bushes present across this area and along the western and northern boundaries (see Photos 4 and 5, Appendix C).
- 3.8 Within the foundation footprint of the former Star Pub, an area of timber flooring was present and, in places, this had broken or been lifted to reveal a flooded sub-floor void and utility pipes (see Photo 6, Appendix C). It was not clear whether there was a basement present beneath the former building on Site. The water within the flooded void had no obvious sheen to it and there was no olfactory sign of contamination noted at the time of the walkover assessment.
- 3.9 There was some evidence of remaining demolition building materials and miscellaneous waste including paint tins and chemical containers within the Site (see Photo 8, Appendix C).
- 3.10 No visible signs of contamination were present at the time of the walkover survey.
- 3.11 There some sign of mobile contaminants on the Site in the form of opened paint tins and chemical containers.

Surrounding Land Use

- 3.12 The land use around the Site is dominantly residential to the with commercial/retail developments adjacent to the east and west (and south) fronting onto Marlborough Parade / Uxbridge Road
- 3.13 The current surrounding land uses identified are illustrated in Figure 3.2, overleaf.



Figure 3.2: Surrounding Land Use Plan (Groundsure, 2019)

4.0 ENVIRONMENTAL SETTING

Geology

- 4.1 According to the BGS 1:50,000 Digital Map of Great Britain, the southern half of the Site is underlain by superficial deposits of the Boyn Hill Gravel Member, with no superficial deposits mapped across the northern half of the Site. The bedrock geology underlying the Site is mapped as the London Clay Formation.
- 4.2 Borehole records published by the BGS (NERC, 2019) approximately 176m to the west and 265m to the east, referenced TQ08SE18 and TQ18SE27 respectively confirm the mapped formations correlating to the southern half of the Site. There are no available proximal borehole records for the northern half of the Site.
- 4.3 The environmental database report (Appendix A) provides data on coal and non-coal mining areas and potential ground stability hazards for the UK that may affect the Site. The mining and potential ground stability hazards identified are summarised in Table 4.1 below.

Details	On-Site	Risk
Shrink swell	Yes	Low
Landslides	Yes	Very low
Potential for Ground Dissolution Stability Hazards	No	Negligible
Potential for Collapsible Ground Stability Hazards	Yes	Very low
Potential for Compressible Ground Stability Hazards	No	Negligible
Potential for Running Sand Ground Stability Hazards	Yes	Very Low
Coal Mining Affected Area	No	No hazard
Non-Coal Mining Affected Area	No	No hazard
Brine affected area	No	No hazard

Table 4.1: Mining and Potential Ground Stability Hazards

- 4.4 There are no records of artificial ground or Made Ground within the Site boundary and no faults are indicated within influencing distance of the Site.
- 4.5 Reference has been made to the Public Health England UK maps of radon, which indicates the Site is not within Radon Affected Area, with <1% of properties above the action level, as shown in Figure 4.1, overleaf.

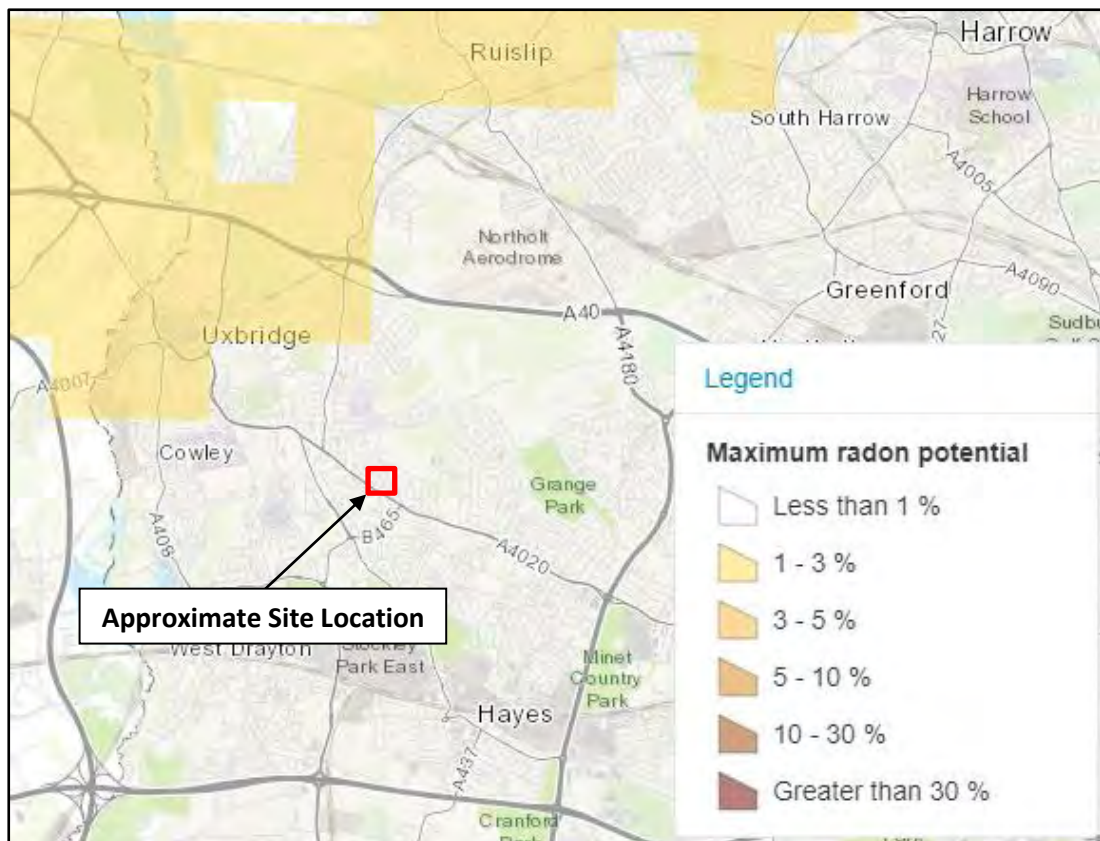


Figure 4.1: Public Health England Radon Map of UK (UKRadon.org, 2019)

Hydrogeology

- 4.6 The superficial deposits of Boyn Hill Gravel Member are classified a *Secondary (A) Aquifer with permeable layers*, capable of supporting water supplies at a local level and in some cases forming an important source of base flow to rivers.
- 4.7 The London Clay Formation mapped across the north of the Site is classified as *Unproductive*, with low permeability that has negligible significance for water supply or river base flow.
- 4.8 The Site does not fall within a Source Protection Zone and the closest groundwater abstraction licences are approximately 136m and 153m to the west of the Site, designated for laundry purposes. There are no potable water abstraction licences within one kilometre of the Site.

Hydrology

- 4.9 There are no surface water features identified within 250m of the Site boundary.
- 4.10 There are no surface water abstraction licences within one kilometre of the Site.
- 4.11 According to the EA Flood Maps, the east of the Site is not indicated to be at risk of flooding from groundwater, rivers or the sea.

Ecology

- 4.12 According to data from the environmental database report, there are no Sites of Special Scientific Interest (SSSI), Nature Reserves, Special Areas of Conservation (SAC), Special Protection Areas (SPA) or Areas of Natural Outstanding Beauty (AONB) within one kilometre of the Site. The Site does not fall within an area classified as 'environmentally sensitive'.
- 4.13 An area marked as 'Green Belt Land' is approximately 232m to the east of the Site.
- 4.14 According to data from the environmental database report, the Site is not classified as being within a *Nitrate Vulnerable Zone*.

Sensitivity

- 4.15 The sensitivity of each of the identified receptors is rated depending upon the environmental setting of the Site, the likelihood for pollutant linkages to be present and potential consequence of those potential pollutant linkages. The assessment approach adopted is based on guidance set out in the *Guidance for the Safe Development of Housing on Land Affected by Contamination* (R&D Publication 66, 2008).
- 4.16 The Site sensitivity with regards to groundwater can be classified as **M2 (Moderate)**. This designation is described as '*Minor aquifer, low to moderately vulnerable, but with possible uses in general area, particularly for domestic supplies. May provide pathway to surface water*'. This reflects the permeability of the superficial Boyn Hill Gravel Member, the localised usage and unproductive classification of the London Clay bedrock.
- 4.17 The Site sensitivity to surface water is designated as **M2 (Moderate)**, described as a '*Site within catchment of and relatively close (less than 1000m) to moderate or poor quality (GQA C to F) watercourse that may be subject to planned improvement by attainment of surface water*'. The Site is within the river catchment area of the Yeading Brook and the Boyn Hill Gravel Member in the southern part of the Site could act as a source of river base flow.
- 4.18 With regard to river quality classification, The General Quality Assessment (GQA) was the Environment Agency's national indicator for water quality in rivers and canals, from 1990 until 2009. These assessments were made for Biological, Chemical and Nutrients and undertaken at sample points for discrete river stretches. In 2007 the England GQA river network was reduced to the GQA Headline Indicator river network. With the GQA replaced by the Water Framework Directive in 2009.

5.0 SITE HISTORY

- 5.1 The history of the Site has been assessed by reviewing available Ordnance Survey historical mapping and aerial images. The historical plans which have been reviewed comprised only readily available records and may be limited; however, the information available to date indicates that additional searches are unlikely to add to our understanding of the Site.
- 5.2 The historical development of the Site is summarised in Table 5.1 below. Historical map extracts are located in Appendix B.

Survey Date And Source	Detail
1866 (1:2,500) OS Mapping	The majority of the Site boundaries were delineated at this time. The alignments of Uxbridge Road and Star Road were established though the former was unnamed and the Star Road was surveyed as Gutteridge Street. The northern, eastern and western boundaries were delineated by residential housing, gardens and Gutteridge Street respectively. Three structures were surveyed within the south of the Site, with the majority of the Site marked as gardens. Adjacent and to the south of the Site were additional residential properties. Residential housing was surveyed adjacent to the north, south and west of the Site. Alpha Road and Butler Street were established, with residential terraced and semi-detached housing along the alignments of these carriageways. Wells were marked within adjoining residential gardens. Land to the south of Uxbridge Road was not developed. A pond, approximately 240m to the south of the Site was the only surface water feature evident within 250m of the Site. The immediate surrounding area was residential to the north and west, opening out to agricultural fields, with the Site falling within a generally rural area.
1881 (1:10,560) OS Mapping	No significant changes were noted to the Site or surrounding area from the previous map edition.
1895 (1:2,500) OS Mapping	No significant changes were noted to the Site from the previous map edition. Two residential houses with associated Well were surveyed on previously undeveloped land adjacent to the south east of the Site. Land to the south of Uxbridge Road had been developed, with a Nursery to the south west and residential housing to the south of the Site.
1920 (1:10,560) OS Mapping	No significant changes were noted to the Site from the previous map edition. The nursery to the south of the Site had extended to the east.
1932 (1:10,560) OS Mapping	No significant changes were noted to the Site or surrounding area from the previous map edition.
1935 (1:2,500) OS Mapping	A building within the south west corner of the Site has been extended to the north. The Nursery was no longer surveyed and had been replaced by residential housing and a Laundry. Additional houses had been constructed adjacent to the south east of the Site.

Survey Date And Source	Detail
1960 (1:10,560) OS Mapping	No significant changes were noted to the Site from the previous map edition. The residential housing adjacent to the south and along the alignment of Uxbridge Road was no longer surveyed.
1964 – 1965 (1:1,250) OS Mapping	The Site was fully delineated and Uxbridge and Star Roads were named at this time, with the southern part of the Site marked as The Star public house. A small outbuilding was present along the western border of the Site Uxbridge Road was surveyed as having been widened, extending over the area formerly occupied by housing adjacent to the south of the Site. Two Works were surveyed to the north of the Site, approximately 10m and 70m from the Site boundary. A further Works was marked approximately 50m to the north west. A garage was marked approximately 65m to the south west, adjacent to the Laundry and a new Works. The area was dominantly residential at this time, with various Works around the Site.
1975 (1:10,000) OS Mapping	No significant changes were noted to the Site or surrounding area from the previous map edition.
1984 – 1985 (1:1,250) OS Mapping	No significant changes were noted to the Site from the previous map edition. A structure marked as Western House was surveyed adjacent and to the west of the Site. No other significant changes were noted to the surrounding area from the previous map edition.
1989 – 1992 (1:1,250) OS Mapping	Additional structures were surveyed in the northern area of the Site boundary, likely to be garages for car. The two Works to the north of the Site were no longer surveyed. No other significant changes were noted to the surrounding area from the previous map edition.
1999 Aerial Imagery	The existing Site extents are visible in this image. The Star Public House was present within the southern half of the Site, with the centre and north of the Site appearing to be a courtyard and beer garden respectively. Within the garden area of the Site, shrubs and mature trees were evident. A garage or similar structure with vehicular access was present at the northern end of the Site. The Site was bound by an access road for a garage to the west, a residential property to the north and by Star Road and Marlborough Parade to the east and south respectively. The Garage to the south west of the Site is still present.
2004 Aerial Imagery	No significant changes were noted to the Site or surrounding area from the previous aerial image.
2005 Aerial Imagery	No significant changes were noted to the Site from the previous map edition. The Garage to the south west of the Site was no longer present.

Survey Date And Source	Detail
2010 Aerial Imagery	The northern area of the site shows this area to be used for car parking. No other significant changes were noted to the Site or surrounding area from the previous aerial image.
2013 Aerial Imagery	No significant changes were noted to the Site or surrounding area from the previous aerial image.
2014 Aerial Imagery	The image shows that the Site is now vacant, the structures having been demolished. Waste mounds are present in the south western corner and there is still some vegetation in the northern half of the Site. No significant changes were noted to the surrounding area from the aerial image.
2018 Aerial Imagery	The Site has remained untended and vegetation has regrown in the previously cleared areas. There is some evidence of possible fly-tipping of materials within the Site boundary. No significant changes were noted to the surrounding area from the aerial image.

Table 5.1: Historical Site Uses

6.0 ENVIRONMENTAL INFORMATION

Publicly Available Information

- 6.1 Information on potentially significant environmental issues and controls at the Site and surrounding area may be held on public records by regulatory authorities. This information was sourced directly from the regulatory authorities and from the environmental database report.
- 6.2 The environmental database report is provided in Appendix A and a summary is provided in Table 6.1 below:

Public Record	On Site / Off Site	Features
Landfill & Waste Sites (Local Authority & British Geological Survey)	On Site	There are no records of current or historical landfills, or waste treatment, transfer or disposal Sites within the Site boundary.
	Off Site	There are no records of current or historical landfills, or waste treatment, transfer or disposal Sites within 250 m of the Site.
Local Authority Searches	On Site	There are no records of historical or current industrial activity taking place on the Site.
	Off Site	There are five historical industrial Sites located within a 250 m radius of the Site, with the exception of farming activity: • Nurseries 40m to SW, 113m to west and 137m to SE; • Works 94m to the west; and • Tram depot 195m to east.
Historical Tanks	On Site	There are no records of any current or historical tanks or substations on the Site.
	Off Site	There is one record of historical tanks and three substations within 250m of the Site boundary: • A tank was recorded 246m to the south east; and • Substations 78m to SW, 199m to SE & 243m to north.
Potentially Infilled Land	On Site	There are no records of any potentially infilled land within the Site boundary. The Site has been categorised as an area of artificial/worked ground.
	Off Site	There are no recorded areas of potentially infilled land within 250m of the Site.
Garages and Motor Vehicle repair sites	On Site	There are no records of any historical garages or motor vehicle repair sites within the Site boundary.
	Off Site	There are two recorded Garages within 250 m of the Site: • Approximately 55m to the west; and • Approximately 240m to the NW.
Environmental Permits (Environment Agency and Local Authority)	On Site	There are no records of any environmental permits or licenses within the Site boundary.
	Off Site	There are no records of any environmental permits or licenses within 250m of the Site boundary.

Table 6.1: Publicly Recorded Information

7.0 QUALITATIVE RISK ASSESSMENT

- 7.1 In accordance with guidance outlined by DEFRA and the Environment Agency's Model Procedures for the Management of Land Contamination, CLR11 (2004), a qualitative risk assessment has been formulated for the Site. A Preliminary Conceptual Model has been developed using potential source-pathway-receptor linkages using a combination of the likelihood of a pollution event to occur, taking account of the presence of a hazard (or source) and integrity of a pathway, versus the consequence of a pollution occurrence, which is essentially a measure of the severity of a hazard to an identified receptor (such as future sensitive end-users).
- 7.2 The presence of contamination (as a potential hazard) does not necessarily mean that there is a risk. It is the exposure pathway and the quantity of contamination that reaches the receptor which may determine the effect on a receptor.
- 7.3 The risk classification for both likelihood and consequence is based on methodology presented in Contaminated Land Risk Assessment, A Guide to Good Practice (CIRIA C552, 2001) and has been developed from procedures outlined in the EA's CLR11 Model Procedures. The DETR, with the EA and Institute of Environment & Health, has also published guidance on risk assessment (Guidelines for Environmental Risk Assessment and Management). The guidance states that the designation of risk is based upon a consideration of both:
- The magnitude of the potential consequence (severity) of risk occurring which takes into account both potential severity of the hazard and sensitivity of the receptor; and
 - The likelihood of an event occurring (probability) which takes into account both the presence of the hazard and receptor and the integrity of the pathway.
- 7.4 The magnitude of consequence (severity) and likelihood (probability) is defined in the CIRIA guidance, together with examples. The two classifications are then compared to obtain an estimation of risk for each pollution linkage, ranging from "very high risk" to "very low risk" (Appendix D). A description of the risks and likely actions are as follows:

Very High Risk: There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or, there is evidence that severe harm to a designated receptor is currently happening.

If this risk is realised, it is likely to result in significant environmental and financial liability to current and/ or future Site owners/occupiers. Urgent investigation (if not already undertaken) and remediation is likely to be required.

High Risk:	Harm is likely to arise to a designated receptor from an identified hazard. If risk is realised, it is likely to present a sizeable environmental and financial liability to current and/ or future Site owners/ occupiers. Urgent investigation is required and remediation work may be necessary in the short term and likely over the longer term.
Moderate Risk:	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely the harm would be relatively mild. Investigation is normally required to clarify the risk and determine the potential environmental liability. Some remedial works may be required over the longer term.
Low Risk:	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild. Limited investigation may be recommended to clarify the risk, dependant on the sensitivity of the receptor and view point of those of interest. Any remedial works are likely to be fairly limited.
Very Low Risk:	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is likely to be mild or minor.
7.5	The benefit of estimating the risk in this way is that it can be revised after each investigation phase as the conceptual model and corresponding pollution linkages are refined.
7.6	This risk assessment is based on the most sensitive proposed end-use as residential housing with private gardens.
7.7	The results of this risk assessment are presented in Table 7.1, overleaf. Should the development proposal change, then the risk assessment should be revised accordingly.

Source	Pollutant	Pathway	Receptor	Likelihood of Occurrence	Consequence (severity)	Potential Risk	Comment	Residual Risk
Historical and current Site use, previous structures (demolition materials) on Site	Potential Asbestos-Containing Materials (ACMs)	Inhalation/ingestion of harmful fibres.	Future end-users	Low Likelihood	Severe	Moderate	Intrusive investigation required to quantify risk to end-users from possible asbestos containing soils in proposed areas of soft landscaping.	Low
		Inhalation/ingestion of harmful fibres during enabling works. Exposure likely to be short term and use of appropriate PPE and an awareness of the hazards would lower the risk.	Construction, demolition and ground workers	Low Likelihood	Medium	Moderate / Low	Standard PPE during construction process would mitigate potential exposure risk.	Low
	Poor quality Made Ground (asbestos metals, hydrocarbons, volatiles, etc.)	Possible direct contact with contaminated soils and accidental ingestion and inhalation of contaminated dust generated from soils in private garden or soft landscaped areas. Permeation of mobile contaminants through water supply pipes.	Future end-users	Low Likelihood	Medium	Moderate / Low	Evidence of limited mobile contaminants on Site (paint tins and chemical containers). Further action required.	Low
		Direct contact and ingestion of contamination in shallow soils during enabling works. Exposure likely to be short term and use of appropriate PPE and an awareness of the hazards would lower the risk.	Construction, demolition and ground workers	Low Likelihood	Mild	Low	No action required; standard PPE during construction process would mitigate any potential exposure risk.	-
		Migration of any contaminants within infill materials via leaching / lateral migration down hydraulic gradient.	Controlled waters (groundwater and surface water)	Low Likelihood	Medium	Moderate / Low	Some evidence of mobile contaminants on Site. Further action required.	Low
		Direct contact	Buildings and services	Low Likelihood	Medium	Moderate / Low	Further investigation required to quantify risk from mobile contaminants from historical off-site sources (Works to north and garages to west).	Low
Historical industrial adjacent / nearby land uses	Metals, hydrocarbons, and polychlorinated biphenyls (PCBs)	Possible lateral migration of contaminants onto Site via groundwater and inhalation of contamination vapours.	Future end-users	Low Likelihood	Medium	Moderate / Low	Some industrial usage around Site and former garage to south west potential source of hydrocarbons. Superficial deposits in southern half of Site are of moderate leaching potential. Further investigation required to quantify risk from mobile contaminants.	Low
Potentially infilled land	Ground gas (methane and carbon dioxide)	Possible lateral migration of ground gas contaminants onto Site and inhalation of harmful (asphyxiant) ground gases or accumulation of explosive gases.	Future end-users	Unlikely	Medium	Low	No evidence of potentially infilled land around the Site that would pose a risk of ground gas. No action required.	-
Radon Gas	Radon	Exposure to radon gas	Future end-users	Unlikely	Medium	Low	Site is not in a Radon affected area. No action required or protection measures needed for future development.	-

Table 7.1: Qualitative Risk Assessment

8.0 CONCLUSIONS & RECOMMENDATIONS

Conclusions

- 8.1 The Site covers an area of approximately 0.08ha and formerly occupied by The Star public house, demolished in 2014. The Site is vacant, with foundations and areas of scrub present, surrounded by timber fencing.
- 8.2 The environmental sensitivity of the Site is considered to be **moderate** with respect to groundwater and **moderate** with respect to surface water.
- 8.3 Based on the findings of the Phase I Contaminated Land Assessment, several potential pollutant linkages have been identified (see Table 7.1 above) associated with the future development and change of use of the Site:
- Potential asbestos containing materials (ACM) and poor quality made ground materials associated with the former structures and previous development on the Site on Site; and
 - Potential for on and off-site sources of mobile contaminants that could affect buildings and services and future end-users.
- 8.4 The potential presence of contamination arising from the historical/current use of the Site and surrounding area is considered to be of low likelihood and to pose a **moderate/low risk** to future end-users and to buildings and services. The potential for ACM to be present within surface soils is considered to have a **moderate** risk to end-users.
- 8.5 The risk to end-users from the potential presence of ground gas on Site is considered to be **low** due to the lack of sources on and off-site.
- 8.6 The potential risk to construction workers is considered to be **low** to **very low** and standard Personal Protective Equipment (PPE) would readily mitigate any potential risks.
- 8.7 The potential risk posed to environmental receptors including groundwater and surface water is considered to be **low** due to the lack of contamination sources on Site and the distance to surface watercourses.
- 8.8 The potential risk posed by local historical/current industrial uses (Garages, unspecified Works) is considered to be **moderate/low**.

Recommendations

- 8.9 Further assessment of the potential sources of contamination identified is considered necessary prior to the proposed development at the Site, although it is considered that this can be conditioned.
- 8.10 In order to assess the potential for ground contamination, it is recommended that a site investigation and contamination assessment is undertaken across the Site. The sampling will comprise a general suite of organic and inorganic contaminants including asbestos and should include the installation of boreholes for shallow groundwater sampling and ground gas monitoring. These investigations are required in order to determine the potential risk posed to future site residents and occupiers and any necessary remedial action required to mitigate these risks. If site contamination is identified, subject to further more detailed site investigations as required, remediation may then be necessary and comprise either the removal / treatment of any contaminated soils and / or groundwater, or the provision of a clean cover system to provide a barrier between the impacted soils and future end users.
- 8.11 The strategy of any further assessment should be agreed in writing with the local planning authority prior to implementation.

9.0 REFERENCES

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APPENDIX B
HISTORICAL MAP EXTRACTS
GS-6107110

APPENDIX C

SITE PHOTOGRAPHS

Photo Locations and orientation

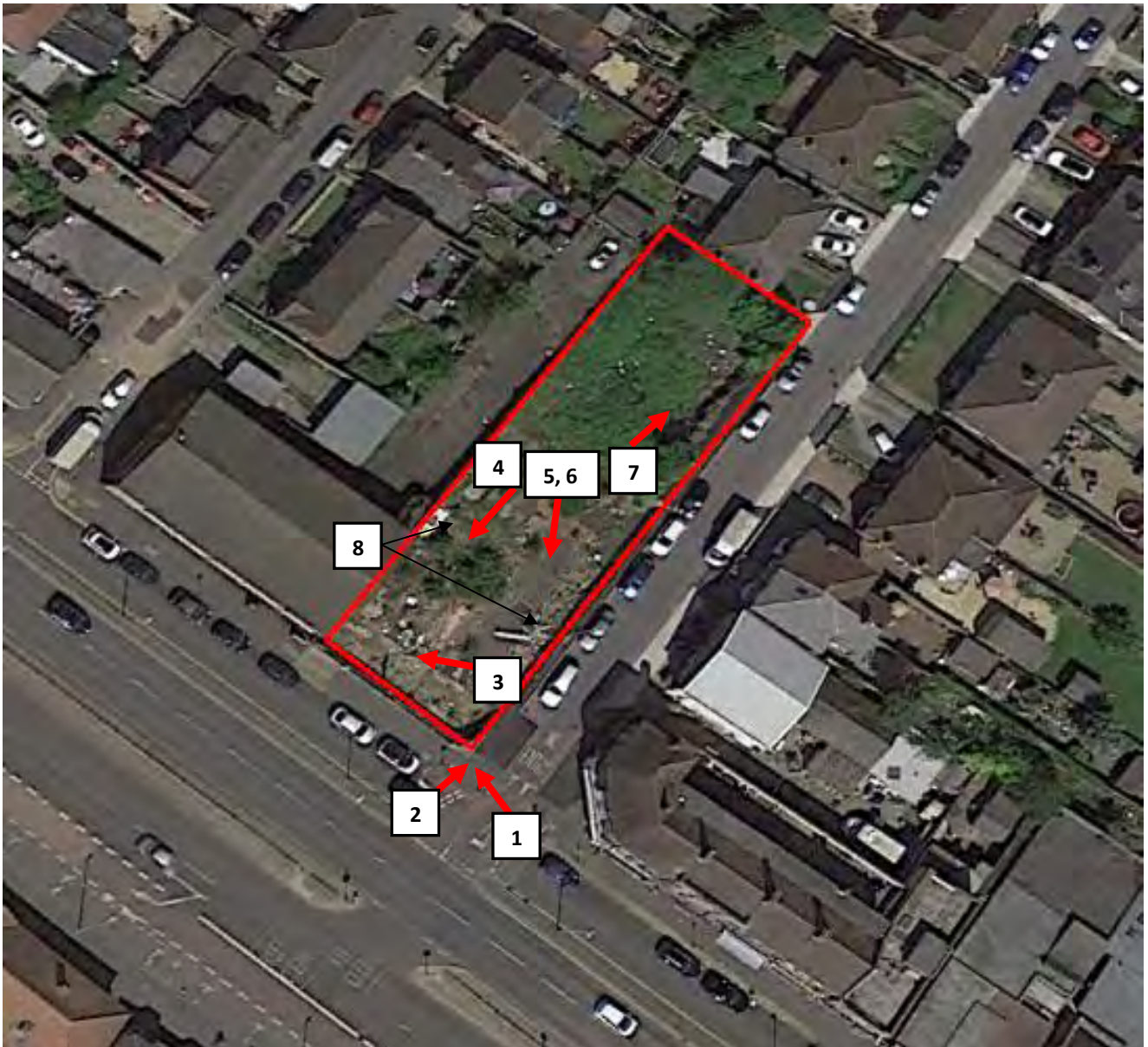


Photo 1: The front (southwest boundary) of the site with Transport House adjacent to the southwest (looking northwest)



Photo 2: The southeast boundary of the site adjacent to Star Road (looking northwest)



Photo 3: The front of the Site covered by hardstanding and waste materials / demolition debris (looking west)



Photo 4: The south western area of Site with hardstanding and semi-mature shrubs with Transport House beyond (looking southwest)



Photo 5: South eastern area of Site with wood flooring / hardstanding and semi-mature shrubs and retail buildings beyond (looking south)



Photo 6:



Photo 7:



Photo 8:



APPENDIX D

RISK ASSESSMENT CLASSIFICATION

Classification	Definition
High Likelihood	There is a pollution linkage and an event that either appears very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the short-term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

Table D1: Classification of Probability

Classification	Definition	Examples
Severe	Short-term (acute) risk to human health likely to result in “significant harm” as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resource. (Note: Water Resources Act contains no scope for considering significance of pollution). Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organisation forming part of such ecosystem (note: the definitions of ecological systems within the draft circular on Contaminated Land, DETR, 2000).	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from Site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
Medium	Chronic damage to human health (“significant harm” as defined in DETR, 2000). Pollution of sensitive water resources. (Note: Water Resources Act contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem, (note: the definitions of ecological systems within draft circular on Contaminated Land, DETR, 2000).	Concentration of a contaminant from Site exceed the generic, or Site-specific assessment criteria. Leaching of contaminants from a Site to a major or minor aquifer. Death of a species within a designated nature reserve.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (“significant harm” as defined in the draft circular on Contaminated Land, DETR, 2000). Damage to sensitive buildings/structures/services or the environment.	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy (for example foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.), easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentrations that protective equipment is required during Site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

Table D2: Classification of Consequence

		Consequence			
		Severe	Medium	Mild	Low
Risk	High Likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low Likelihood	Moderate risk	Moderate/low risk	Low Risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

Table D3: Combination of Consequence with Probability

APPENDICES

APPENDIX A
GROUNDSURE INSIGHT REPORT
GS-6107109



Create Consulting Engineers Ltd
109-112 Temple Chambers, 3-7 TEMPLE
AVENUE,
LONDON, EC4Y 0HP

Groundsure Reference: GS-6107109
Your Reference: P19-1780_Former_Star_PH
Report Date 18 Jun 2019
Report Delivery Method: Email - pdf

Enviro Insight

Address: , UB10 0LZ

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

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

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Address: , UB10 0LZ
Date: 18 Jun 2019
Reference: GS-6107109
Client: Create Consulting Engineers Ltd

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 07-Jun-2015
Grid Reference: 507965,182311
Site Size: 0.0791ha

Report Reference: GS-6107109
Client Reference: P19-1780_Former_Star_PH

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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	4	18	22
1.2 Additional Information – Historical Tank Database	0	0	1	1
1.3 Additional Information – Historical Energy Features Database	0	0	9	17
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	4	2
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	0	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	2
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/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	2
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	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/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	1	6
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	2	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	4

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	8	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	1	1
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
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 Records of Strata Classification in the Superficial Geology within 500m of the study site				Identified		
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site				Identified		
	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	2	0	2	12
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	5
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)	1	0	0	1	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	No
6.10 Ordnance Survey MasterMap Water 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 Environment Agency Zone 2 floodplains within 250m of the study site	None identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	None identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential at Surface					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Moderate					

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	1
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	2
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

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
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	1	0	4	10

Section 9: Natural Hazards	
9.1 Maximum risk of natural ground subsidence	Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Very Low
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 site 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 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

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 licences, 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).

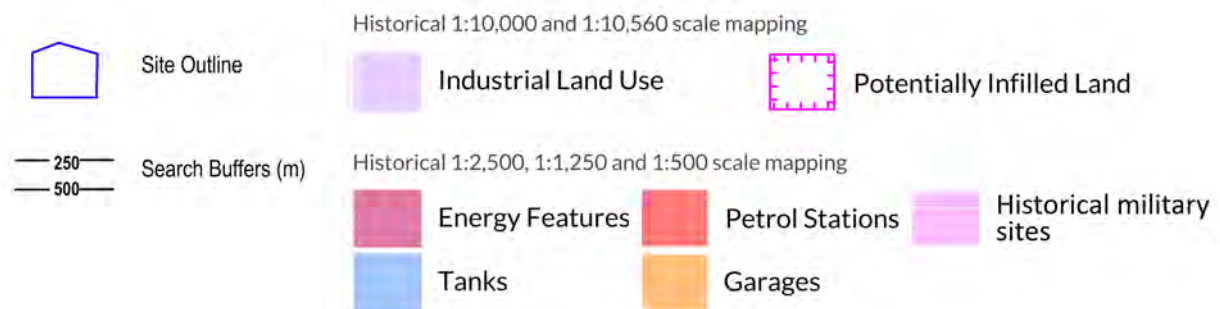
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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



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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: 44

ID	Distance [m]	Direction	Use	Date
1A	40	SW	Nursery	1932
2A	40	SW	Nursery	1900
3A	40	SW	Nursery	1913
4A	40	SW	Nursery	1913
5B	94	W	Unspecified Works	1989
6B	94	W	Unspecified Works	1975
7C	113	W	Nursery	1895
8C	114	W	Nursery	1897
9D	137	SE	Nursery	1900
10D	137	SE	Nursery	1932
11E	158	NE	Nursery	1900
12E	158	NE	Nursery	1932
13	162	NE	Nursery	1897
14F	191	NE	Nursery	1913
15E	192	NE	Nursery	1913
16F	192	NE	Nursery	1895
17O	195	E	Tramway Depot	1913
18G	221	SE	Tramway Depot	1913
19G	222	SE	Tramway Depot	1932
20G	223	SE	Tramway Sidings	1932
21G	227	SE	Tramway Sidings	1913
22G	227	SE	Railway Sidings	1913
23H	258	SE	Nursery	1913
24H	259	SE	Nursery	1897
25H	262	SE	Nursery	1895
26H	266	SE	Nursery	1913
27I	293	NE	Nursery	1938
28I	296	NE	Nursery	1935
29I	297	NE	Nursery	1959
30	298	NE	Nursery	1938
31J	330	SE	Nursery	1932
32J	333	SE	Nursery	1913
33J	335	SE	Nursery	1913
34L	371	S	Unspecified Ground	1882

Workings				
35K	381	S	Unspecified Pit	1897
36K	386	S	Unspecified Pit	1895
37K	389	S	Unspecified Ground Workings	1932
38K	389	S	Unspecified Pit	1900
39K	390	S	Unspecified Ground Workings	1913
40L	391	S	Unspecified Pit	1868
41K	392	S	Unspecified Ground Workings	1913
42M	430	SE	Nursery	1932
43M	433	SE	Nursery	1913
44M	434	SE	Nursery	1913

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:

2

ID	Distance (m)	Direction	Use	Date
45G	246	SE	Unspecified Tank	1935
46	259	NE	Unspecified Tank	1866

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:

26

ID	Distance (m)	Direction	Use	Date
47N	77	SW	Electricity Substation	1994
48N	78	SW	Electricity Substation	1989
49N	78	SW	Electricity Substation	1984
50O	199	SE	Electricity Substation	1985
51O	199	SE	Electricity Substation	1992
52O	199	SE	Electricity Substation	1967
53	201	SE	Electricity Substation	1997
54P	243	N	Electricity Substation	1971
55P	243	N	Electricity Substation	1989

56Q	270	W	Electricity Substation	1984
57Q	271	W	Electricity Substation	1984
58R	385	NW	Electricity Substation	1994
59R	385	NW	Electricity Substation	1989
60R	387	NW	Electricity Substation	1994
61S	387	S	Electricity Substation	1984
62S	388	S	Electricity Substation	1997
63	400	N	Electricity Substation	1994
64T	425	W	Electricity Substation	1984
65T	428	W	Electricity Substation	1989
66T	428	W	Electricity Substation	1984
67U	445	SW	Electricity Substation	1994
68U	446	SW	Electricity Substation	1985
69V	492	SE	Electricity Substation	1992
70V	492	SE	Electricity Substation	1967
71V	492	SE	Electricity Substation	
72V	493	SE	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: 6

ID	Distance (m)	Direction	Use	Date
73W	55	W	Garage	1964
74W	56	W	Garage	1965
75Q	240	NW	Garage	1984
76X	242	NW	Garage	1964
77X	258	NW	Garage	1965
78X	258	NW	Garage	1989

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 15

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

ID	Distance(m)	Direction	Use	Date
79	319	SE	Pond	1882
80	334	S	Pond	1868
81L	371	S	Unspecified Ground Workings	1882
82Y	375	SW	Ponds	1882
83K	381	S	Unspecified Pit	1897
84Y	385	SW	Ponds	1868
85K	386	S	Unspecified Pit	1895
86K	389	S	Unspecified Ground Workings	1932
87K	389	S	Unspecified Pit	1900
88K	390	S	Unspecified Ground Workings	1913
89L	391	S	Unspecified Pit	1868
90K	392	S	Unspecified Ground Workings	1913
91Z	410	SW	Ponds	1897
92Z	413	SW	Ponds	1895
93Z	413	SW	Ponds	1913

2. Environmental Permits, Incidents and Registers Map



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- | | | |
|-------------------------------|---|--|
| Site Outline | Recorded Pollution Incident | RAS 3 & 4 Authorisations |
| Dangerous Substances (List 1) | Dangerous Substances (List 2) | Part A(1) Authorised Processes and Historic IPC Authorisations |
| Water Industry Referrals | Licenced Discharge Consents | Part A(2) and Part B Authorised Processes |
| Red List Discharge Consents | COMAH / NIHHS Sites | Sites Determined as Contaminated Land |
| | Hazardous Substance Consents and Enforcements | |

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales 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:

2

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
3	268	W	507703 182401	Address: Co-operative Group Ltd, Lees Corner Filling Station, Hillingdon, UB4 0JN Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
4	300	SE	508201 182103	Address: Esso Hillingdon, 949 Uxbridge Road, Hillingdon Process: Unloading of Petrol into Storage at Service Stations Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

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/Natural Resources Wales Recorded Pollution Incidents

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

2

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

ID	Distance (m)	Direction	NGR	Details
1	298	SE	508165.0 182070.0	Incident Date: 05-Nov-2003 Incident Identification: 199875.0 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2	323	NE	508226.0 182557.0	Incident Date: 24-Mar-2003 Incident Identification: 145468.0 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes 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

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

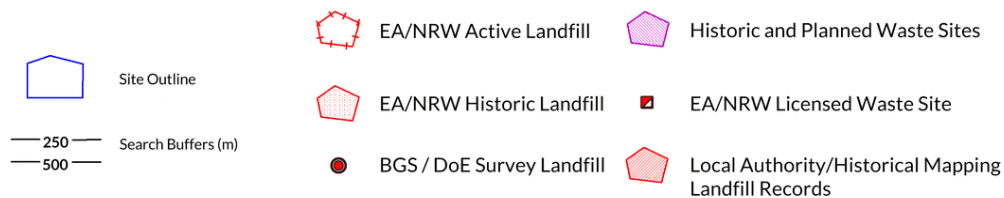
0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

7

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
3	685	W		Site Address: Harlington Road, Hillingdon, London Waste Licence: - Site Reference: 8HI023, HIL028 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1103	S		Site Address: Land Parcels 2,3,4,5,9, Stockley Park, Hillingdon, Middlesex Waste Licence: Yes Site Reference: DL410, 8HI066, HIL075 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: TE1/L/STO001 Licence Issue: 13-Oct-1992 Licence Surrendered: 30-Oct-2001 Licence Holder Address: - Operator: - Licence Holder: Stockley Park Consortium Limited First Recorded: 31-Dec-1940 Last Recorded: -
Not shown	1131	S		Site Address: Area to north of Stockley Park, Stockley Park, Middlesex Waste Licence: - Site Reference: 8HI079 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Yiewsley and West Drayton Council First Recorded: - Last Recorded: -
Not shown	1168	S		Site Address: North East Link Spur Road, Stockley Park, Hillingdon, London Waste Licence: Yes Site Reference: DL470, 8HI068, HIL075 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 20-Jul-1993 Licence Surrendered: 25-Apr-1994 Licence Holder Address: - Operator: - Licence Holder: London Borough of Hillingdon First Recorded: 31-Dec-1993 Last Recorded: 30-Apr-1994

ID	Distance (m)	Direction	NGR	Details		
Not shown	1170	S		Site Address: Stockley Park East, Stockley Park, Middlesex Waste Licence: Yes Site Reference: 8HI048, DL197, HIL56C Waste Type: Inert, Industrial, Commercial, Household, Special Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 02-Apr-1985 Licence Surrendered: 15-Mar-1993 Licence Holder Address: - Operator: - Licence Holder: Stockley Park Consortium Limited First Recorded: 31-Dec-1950 Last Recorded: 31-Oct-1992	
Not shown	1197	SW		Site Address: North East Link Spur Road, Stockley Park, Hillingdon, London Waste Licence: Yes Site Reference: DL470, 8HI068, HIL075 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 20-Jul-1993 Licence Surrendered: 25-Apr-1994 Licence Holder Address: - Operator: - Licence Holder: London Borough of Hillingdon First Recorded: 31-Dec-1993 Last Recorded: 30-Apr-1994	
Not shown	1389	SW		Site Address: Stockley Park West, Stockley Park, Middlesex Waste Licence: Yes Site Reference: 8HI046, DL254, HIL56A Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 25-Jun-1987 Licence Surrendered: 15-Mar-1993 Licence Holder Address: - Operator: - Licence Holder: Stockley Park Consortium Limited First Recorded: 31-Dec-1921 Last Recorded: 19-Mar-1993	

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		
1A	271	W	507658 182378	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1994	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

ID	Distance (m)	Direction	NGR	Details		
2A	273	W	507656 182376	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1987	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

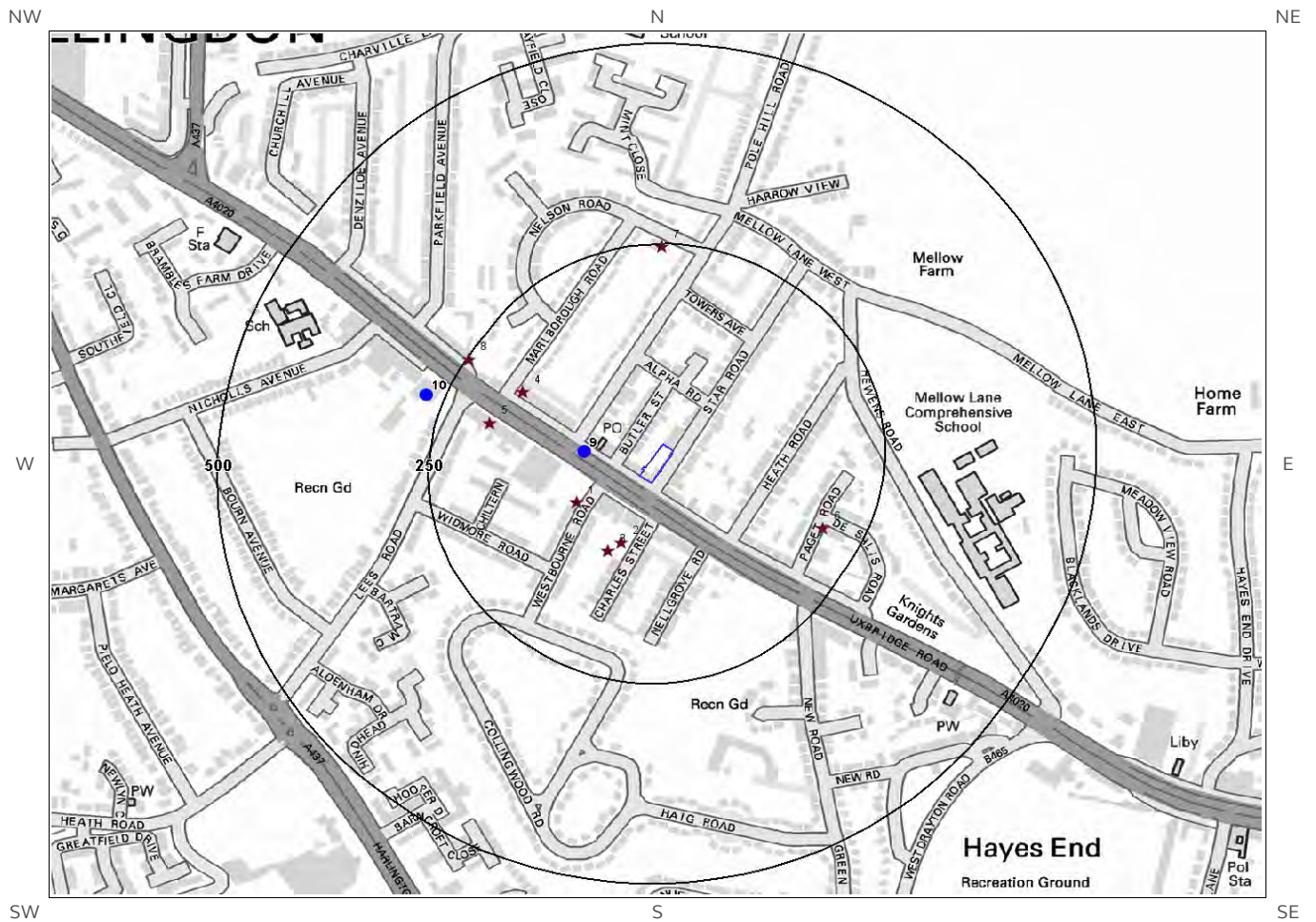
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

4

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

ID	Distance (m)	Direction	NGR	Details		
Not shown	1398	NE	509059 183238	Site Address: P G Allen, Allens Yard, 143, Charville Lane, Hayes, Middlesex, UB4 8PD Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ALL001 EPR reference: EA/EPR/RP3196NH/A001 Operator: Allen P G Waste Management licence No: 80080 Annual Tonnage: 1820.0	Issue Date: 20/07/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Allens Yard, Hayes Correspondence Address: -	
Not shown	1398	NE	509059 183238	Site Address: P G Allen, Allens Yard, 143, Charville Lane, Hayes, Middlesex, UB4 8PD Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ALL001 EPR reference: EA/EPR/RP3196NH/A001 Operator: P G Allen Waste Management licence No: 80080 Annual Tonnage: 1820.0	Issue Date: 20/07/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Allens Yard, Hayes Correspondence Address: -	
Not shown	1411	S	507776 180895	Site Address: Land Parcels 2-5 & 9, Stockley Park, Hillingdon, Middlesex Type: Landfill taking other wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: STO000 EPR reference: - Operator: Stockley Park Consortium Ltd Waste Management licence No: 80065 Annual Tonnage: 0.0	Issue Date: 25/10/1990 Effective Date: - Modified: - Surrendered Date: 30/10/2001 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Stockley Park, Hillingdon Correspondence Address: Stockley Park Consortium Ltd, Stockley Park Project Office, Bolingbroke Way, Hayes, Middx, UB3 1EP	
Not shown	1411	S	507776 180895	Site Address: Land Parcels 2-5 & 9, Stockley Park, Hillingdon, Middlesex Type: Landfill taking other wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: STO001 EPR reference: EA/EPR/AP3596NB/S002 Operator: Stockley Park Consortium Ltd Waste Management licence No: 80065 Annual Tonnage: 100000.0	Issue Date: 25/10/1990 Effective Date: - Modified: - Surrendered Date: Oct 30 2001 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Stockley Park, Hillingdon Correspondence Address: -	

4. Current Land Use Map



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4. Current Land Uses

4.1 Current Industrial Data

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

8

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	82	SW	Electricity Sub Station	507879 182269	Greater London, UB10	Electrical Features	Infrastructure and Facilities
2	82	SW	American R V Centre	507931 182218	2-6, Charles Street, Uxbridge, Greater London, UB10 0SY	New Vehicles	Motoring
3	99	SW	Works	507915 182209	Greater London, UB10	Unspecified Works Or Factories	Industrial Features
4	172	NW	ATS Euromaster Ltd	507814 182406	1-2 Marlborough Parade, Uxbridge Road, Uxbridge, Greater London, UB10 0LR	Vehicle Parts and Accessories	Motoring
5	190	W	Tapecity	507775 182368	5 Hillingdon Parade, Uxbridge Road, Hillingdon, Uxbridge, Greater London, UB10 0PE	Electronic Equipment	Industrial Products
6	201	SE	Electricity Sub Station	508170 182237	Greater London, UB10	Electrical Features	Infrastructure and Facilities
7	247	N	Electricity Sub Station	507979 182588	Greater London, UB10	Electrical Features	Infrastructure and Facilities
8	248	NW	The Yard	507751 182448	1 New Broadway, Uxbridge Road, Uxbridge, Greater London, UB10 0LH	Recycling, Reclamation and Disposal	Recycling Services

4.2 Petrol and Fuel Sites

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

2

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
9	73	NW	507887 182332	UNBRANDED	949 Uxbridge Road, Westbourne Road, Hillingdon Heath, Hillingdon, Outer London, UB10 0LQ	Not Applicable	Obsolete
10	273	W	507700 182403	CO-OP	Uxbridge Road, Lees Road, Hillingdon	No	Open

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
					Heath, Hillingdon, Outer London, UB10 0NZ		

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:

0

Database searched and no data found.

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

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

Lex Code	Description	Rock Type
BHT-XSV	BOYN HILL GRAVEL MEMBER	SAND AND GRAVEL

5.3 Bedrock and Solid Geology

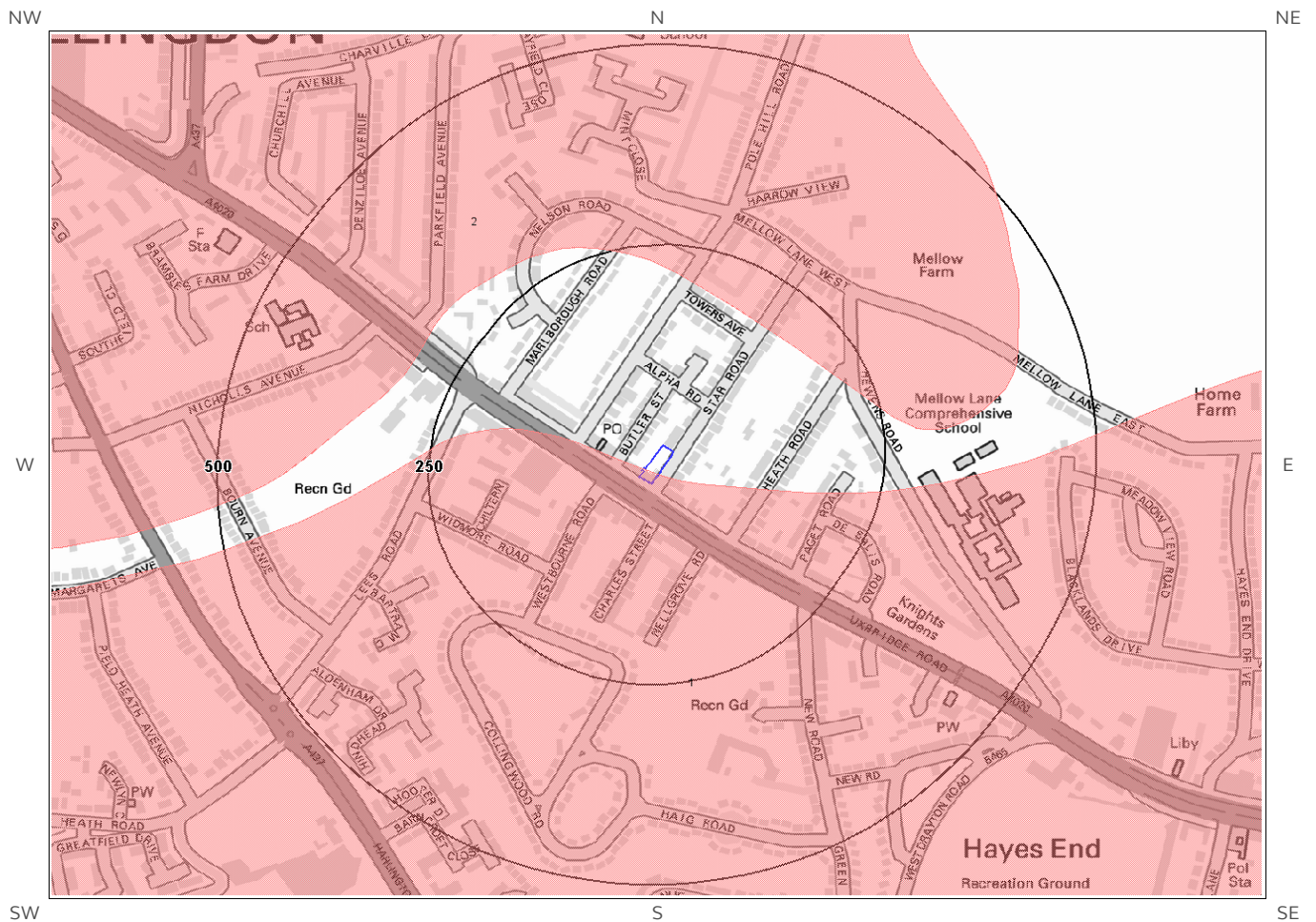
The database has been searched on site, including a 50m buffer.

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

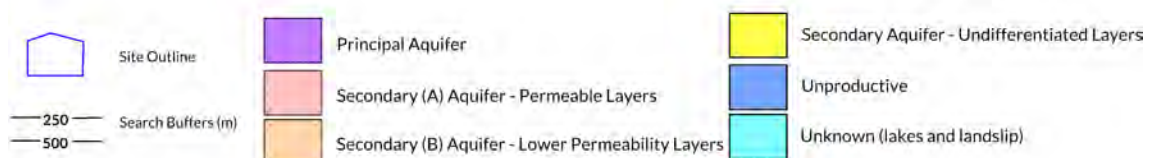
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



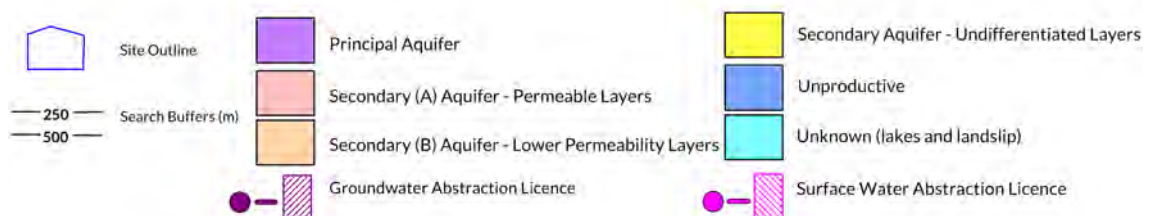
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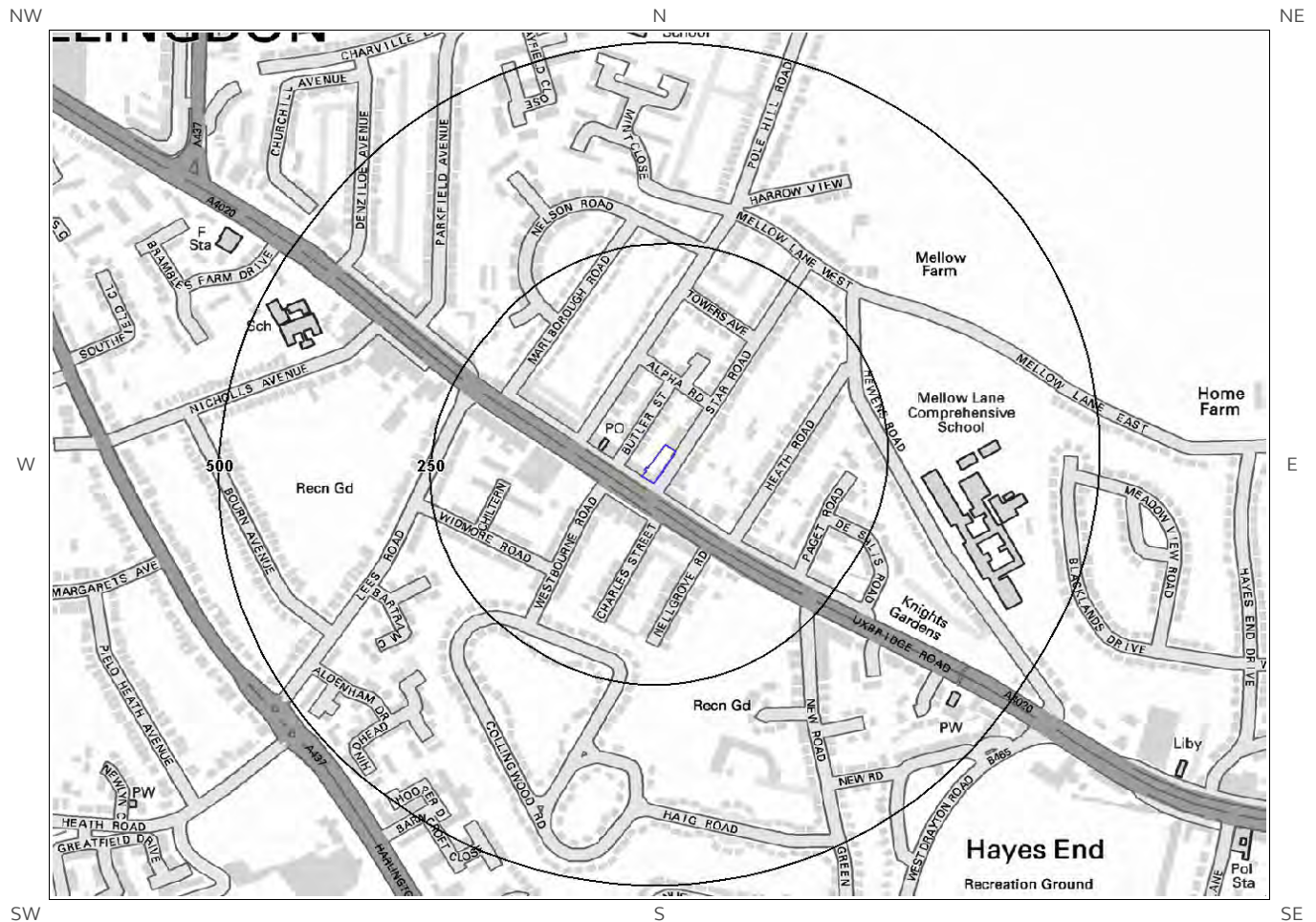
6b. Aquifer Within Bedrock Geology and Abstraction Licences



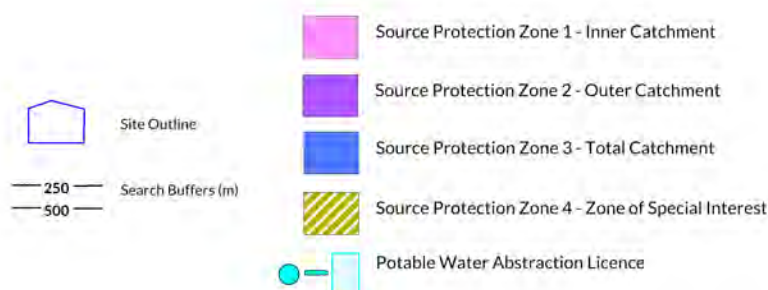
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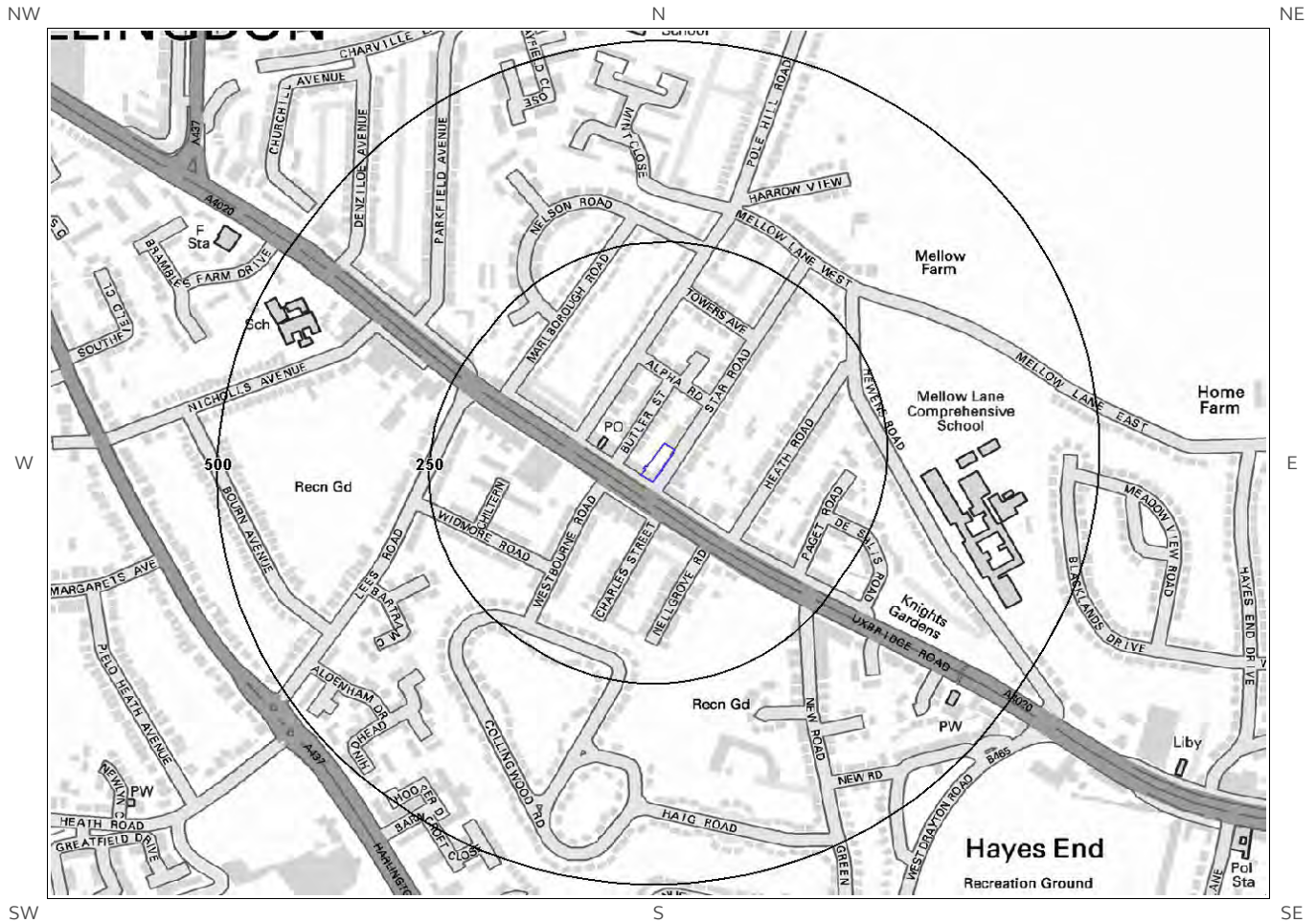
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



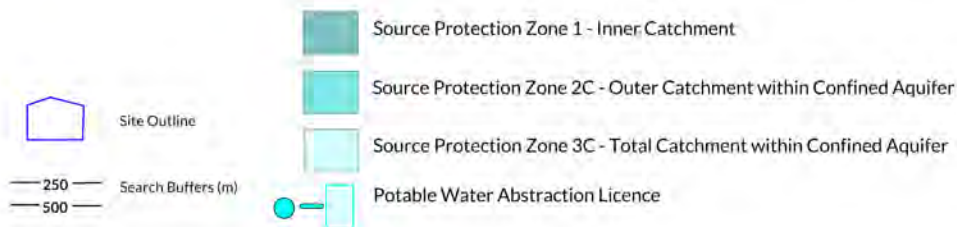
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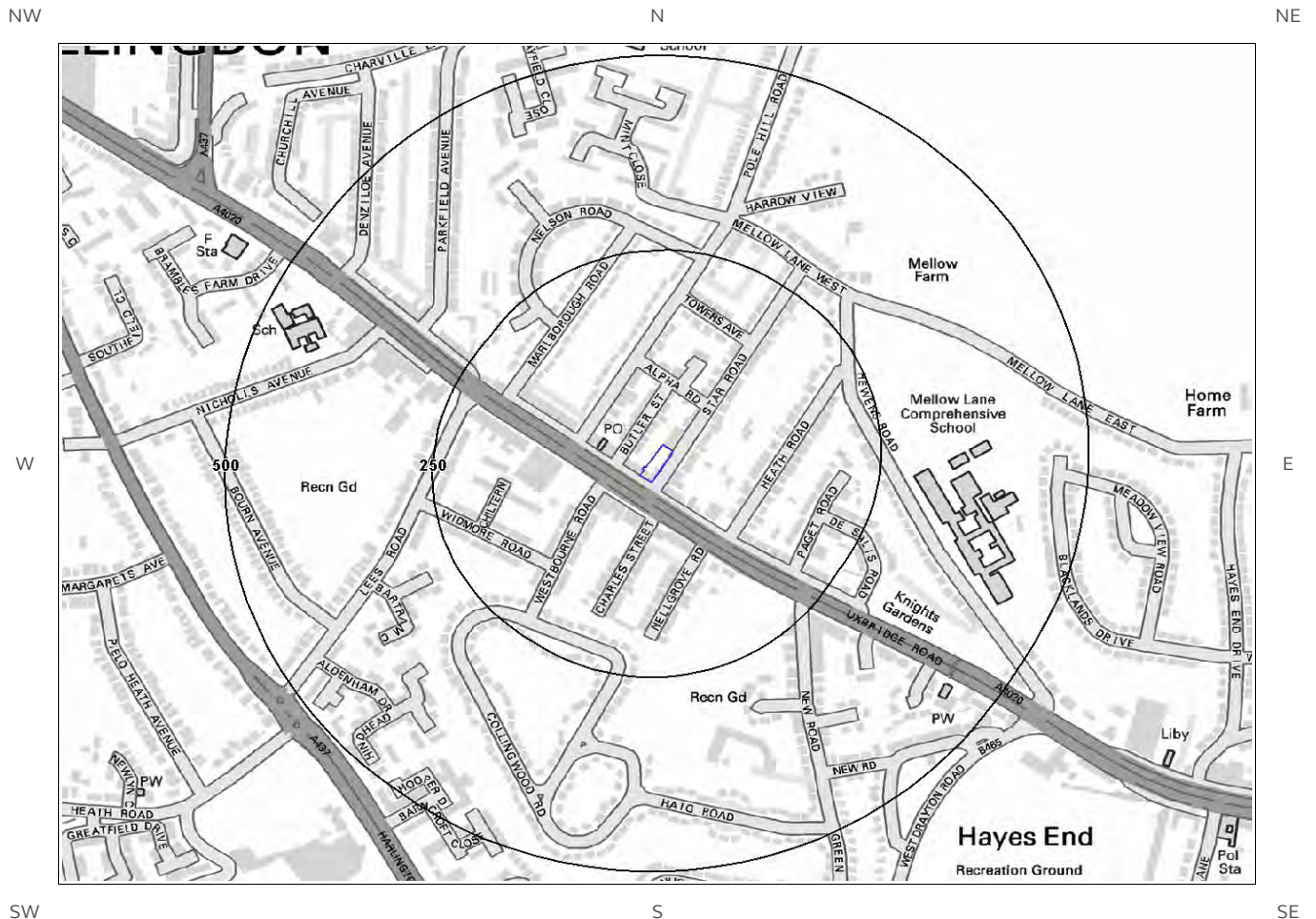
6d. Hydrogeology – Source Protection Zones within confined aquifer



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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales'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 Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	189	NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales'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 Enviro Insight User Guide.

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

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

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

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
2	136	W	507817 182299	Status: Active Licence No: 28/39/28/0008 Details: Laundry Use Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT WHITELYS PARADE Data Type: Point Name: BLUE DRAGON (HILLINGDON) LTD Annual Volume (m³): 47663 Max Daily Volume (m³): 200 Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 101 Version Start Date: 07/02/2014 Version End Date:
3	153	W	507800 182300	Status: Historical Licence No: 28/39/28/0008 Details: Laundry Use Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT WHITELYS PARADE Data Type: Point Name: BLUE DRAGON (HILLINGDON) LTD Annual Volume (m³): 37669 Max Daily Volume (m³): 181.84 Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 08/11/1965 Version End Date:
Not shown	616	S	507800 181700	Status: Historical Licence No: 28/39/28/0277 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: WELL AT LITTLE LONDON NURSERY, HARLINGTON ROAD, HILLINGDON Data Type: Point Name: BARWICK Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 13/02/1967 Expiry Date: - Issue No: 100 Version Start Date: 25/09/1996 Version End Date:
Not shown	616	S	507800 181700	Status: Historical Licence No: 28/39/28/0277 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: WELL AT LITTLE LONDON NURSERY, HARLINGTON ROAD, HILLINGDON Data Type: Point Name: BARWICK Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 13/02/1967 Expiry Date: - Issue No: 100 Version Start Date: 25/09/1996 Version End Date:
Not shown	1004	SE	508900 181900	Status: Historical Licence No: 28/39/36/0015 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: TWO WELLS AT SPRINGWELL NURSERY, HAYES END ROAD, HAYES Data Type: Point Name: GOODSON Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 12/06/1997 Version End Date:
Not shown	1004	SE	508900 181900	Status: Historical Licence No: 28/39/36/0015 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: TWO WELLS AT SPRINGWELL NURSERY, HAYES END ROAD, HAYES Data Type: Point Name: GOODSON Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 12/06/1997 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1014	W	506950 182160	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE A AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 200000 Max Daily Volume (m³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date:
Not shown	1014	W	506950 182160	Status: Active Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: HILLINGDON HOSPITAL - BOREHOLE Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 138166 Max Daily Volume (m³): 385.4 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 103 Version Start Date: 01/01/2010 Version End Date:
Not shown	1108	W	506910 181930	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE B AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 200000 Max Daily Volume (m³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date:
Not shown	1108	W	506910 181930	Status: Active Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: HILLINGDON HOSPITAL - BOREHOLE Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 138166 Max Daily Volume (m³): 385.4 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 103 Version Start Date: 01/01/2010 Version End Date:
Not shown	1140	W	506820 182180	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE C AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 200000 Max Daily Volume (m³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date:
Not shown	1922	S	507580 180410	Status: Historical Licence No: 28/39/36/0069 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: STOCKLEY PARK , UXBRIDGE (BOREHOLE) Data Type: Point Name: STOCKLEY PARK GOLF LIMITED Annual Volume (m³): 78000 Max Daily Volume (m³): 2182 Original Application No: - Original Start Date: 05/11/2001 Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: 05/11/2001 Version End Date:
Not shown	1922	S	507580 180410	Status: Historical Licence No: 28/39/36/0066 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT STOCKLEY PARK GOLF LIMITED Data Type: Point Name: STOCKLEY PARK GOLF LIMITED Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2009 Issue No: 1 Version Start Date: 11/01/2001 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1922	S	507580 180410	Status: Historical Licence No: 28/39/36/0069 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: STOCKLEY PARK , UXBRIDGE (BOREHOLE) Data Type: Point Name: STOCKLEY PARK GOLF LIMITED Annual Volume (m³): 78000 Max Daily Volume (m³): 2182 Original Application No: - Original Start Date: 05/11/2001 Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: 05/11/2001 Version End Date:
Not shown	1922	S	507580 180410	Status: Active Licence No: TH/039/0036/012 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: STOCKLEY PARK , UXBRIDGE (BOREHOLE) Data Type: Point Name: Stockley Park Golf Club Limited Annual Volume (m³): 78000 Max Daily Volume (m³): 2182 Original Application No: - Original Start Date: 01/04/2013 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 01/04/2013 Version End Date:
Not shown	1922	S	507580 180410	Status: Active Licence No: TH/039/0036/012 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: STOCKLEY PARK , UXBRIDGE (BOREHOLE) Data Type: Point Name: Stockley Park Golf Club Limited Annual Volume (m³): 78000 Max Daily Volume (m³): 2182 Original Application No: - Original Start Date: 01/04/2013 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 01/04/2013 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1014	W	506950 182160	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE A AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 200000 Max Daily Volume (m³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1014	W	506950 182160	Status: Active Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Annual Volume (m³): 138166 Max Daily Volume (m³): 385.4 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 103

ID	Distance (m)	Direction	NGR	Details
Not shown	1108	W	506910 181930	Point: HILLINGDON HOSPITAL - BOREHOLE Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Version Start Date: Version End Date:
				Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE B AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 200000 Max Daily Volume (m³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
				Status: Active Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: HILLINGDON HOSPITAL- BOREHOLE Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 138166 Max Daily Volume (m³): 385.4 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 103 Version Start Date: Version End Date:
Not shown	1140	W	506820 182180	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE C AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Annual Volume (m³): 200000 Max Daily Volume (m³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site

None identified

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

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
285	NE	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

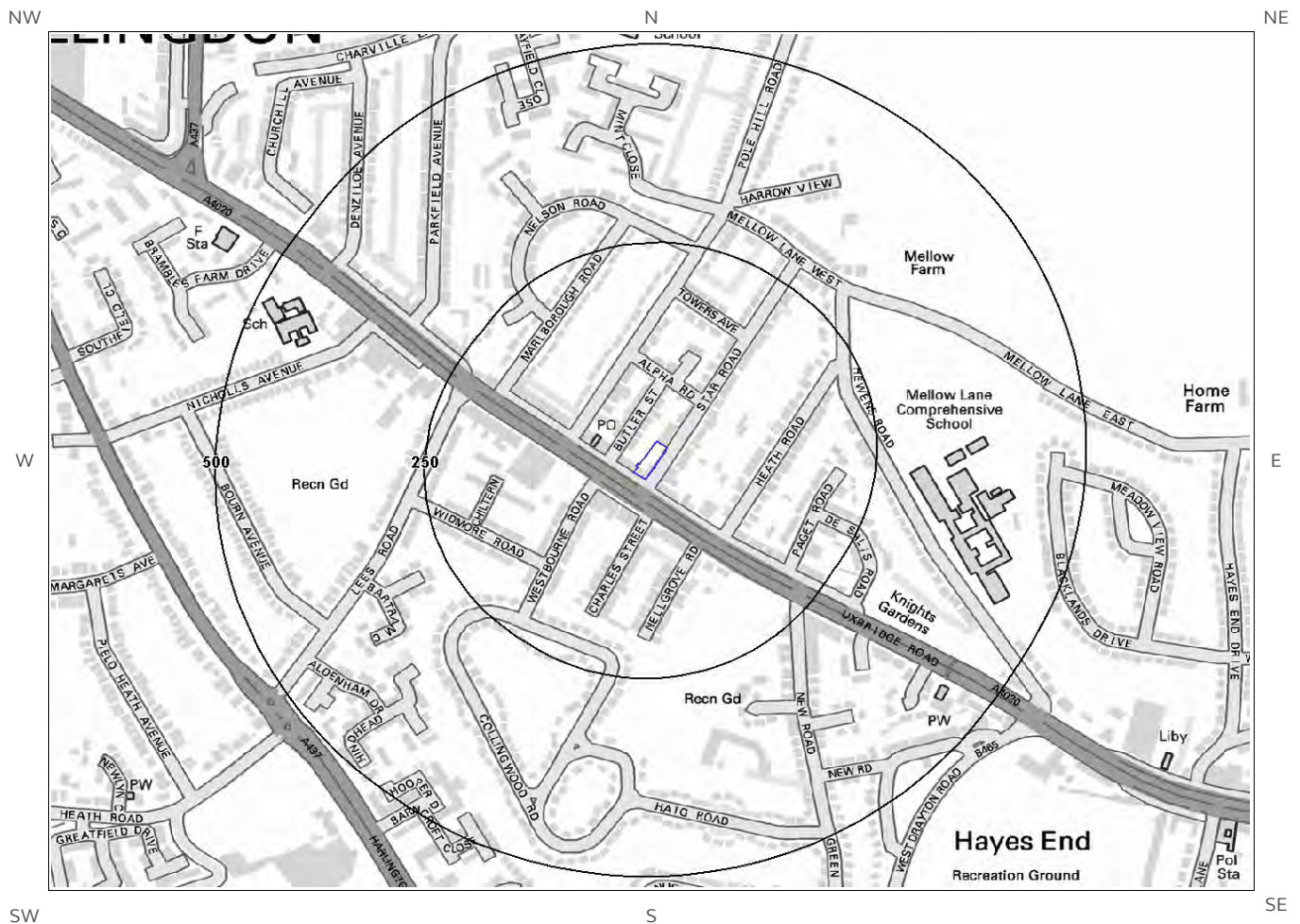
Database searched and no data found.

6.11 Surface Water Features

Surface water features within 250m of the study site None identified

Database searched and no data found.

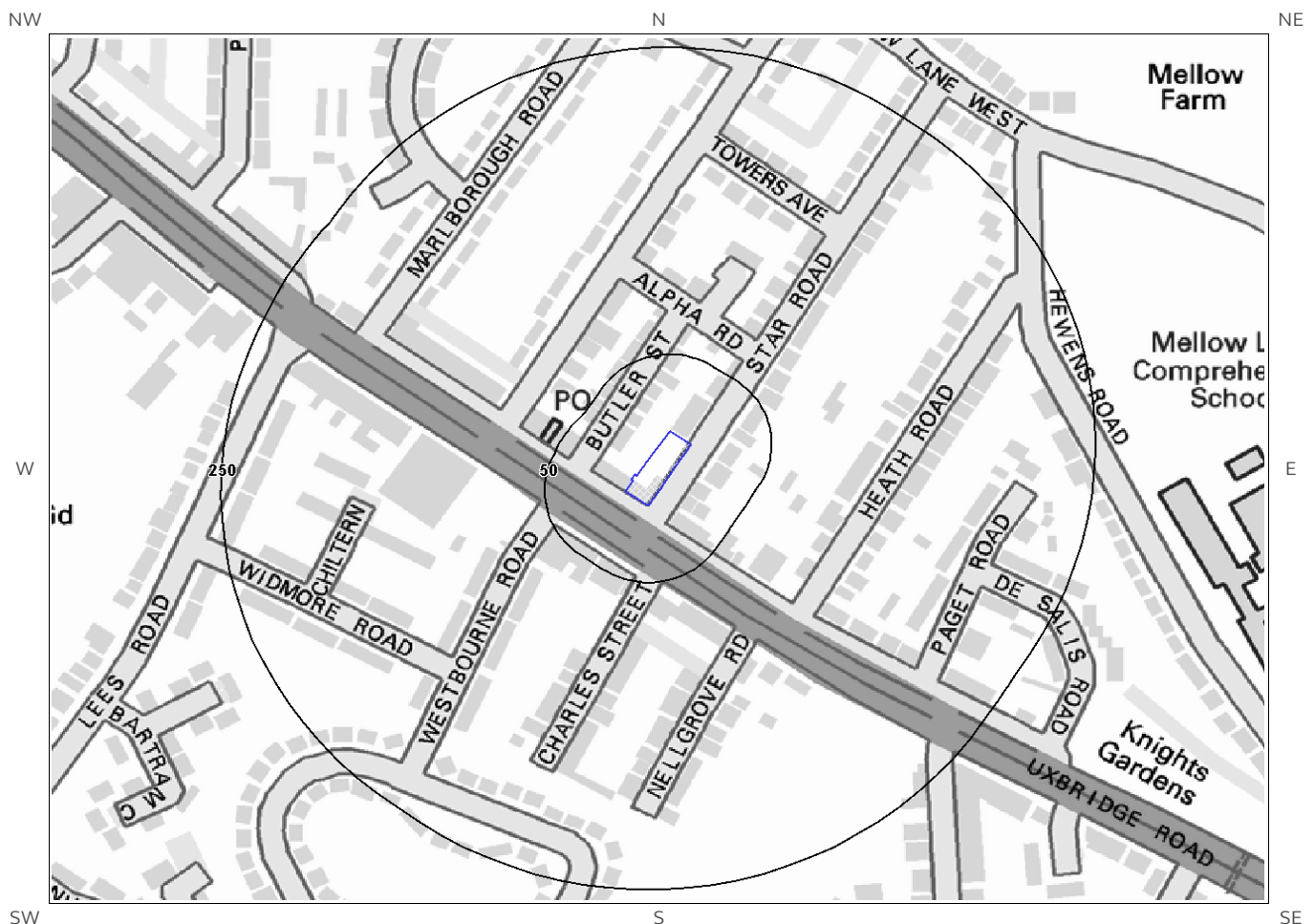
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



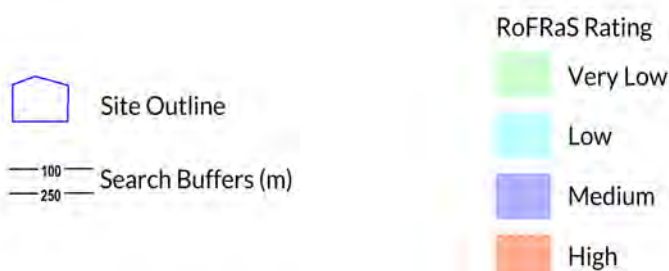
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m None identified

Environment Agency/Natural Resources Wales 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

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

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

Highest risk of flooding onsite Very Low

The Environment Agency/Natural Resources Wales 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

Flood Defences within 250m of the study site None identified
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

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

Identified

Clearwater Flooding or Superficial Deposits Flooding

Superficial Deposits Flooding

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 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

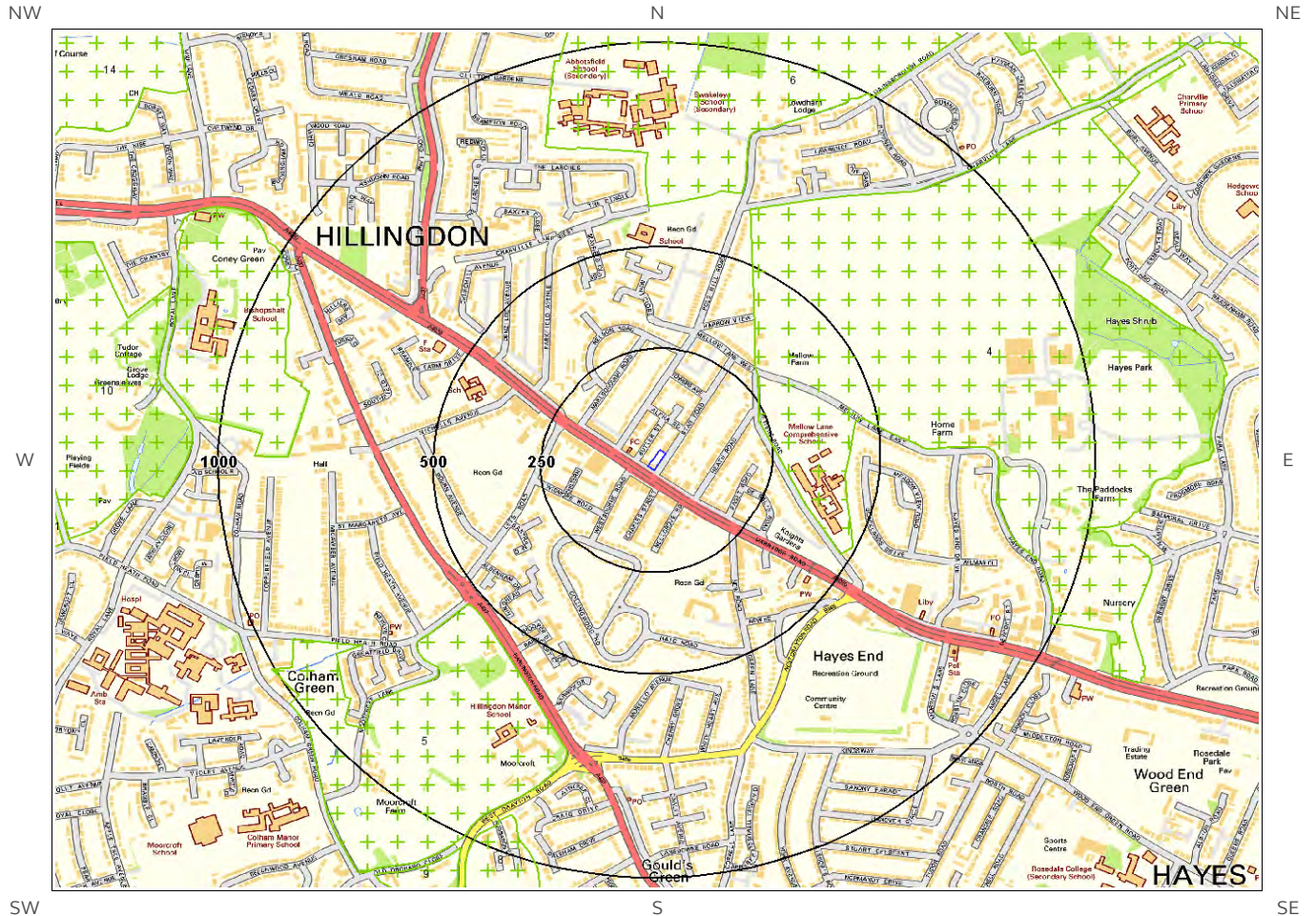
British Geological Survey confidence rating in this result

Moderate

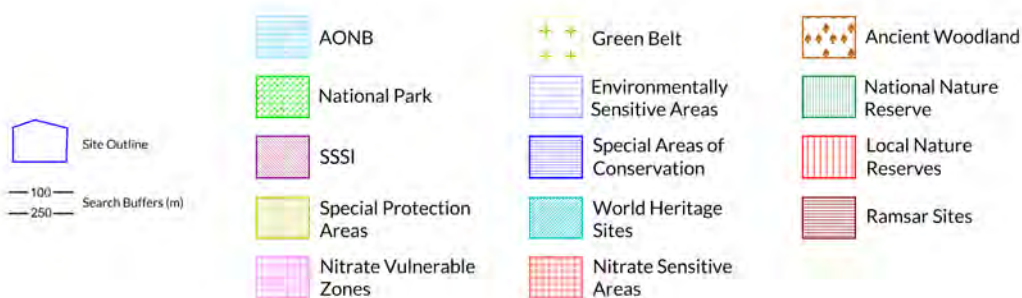
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site	Identified
---	------------

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:

1

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

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1995	NE	GUTTERIDGE WOOD	Ancient and Semi-Natural Woodland

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
Not shown	1906	NE	Yeading Woods (mapped boundary not verified)	Natural England
Not shown	1993	NE	Yeading Brook Meadows (mapped boundary not verified)	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:

15

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
4	232	E	London Area Greenbelt	Hillingdon London Boro
5	533	SW	London Area Greenbelt	Hillingdon London Boro
6	599	N	London Area Greenbelt	Hillingdon London Boro
7	809	W	London Area Greenbelt	Hillingdon London Boro
8	907	S	London Area Greenbelt	Hillingdon London Boro
9	1030	SW	London Area Greenbelt	Hillingdon London Boro
10	1062	W	London Area Greenbelt	Hillingdon London Boro
11	1374	W	London Area Greenbelt	Hillingdon London Boro
Not shown	1387	NW	London Area Greenbelt	Hillingdon London Boro
Not shown	1391	SW	London Area Greenbelt	Hillingdon London Boro
14	1409	NW	London Area Greenbelt	Hillingdon London Boro
Not shown	1554	W	London Area Greenbelt	Hillingdon London Boro
Not shown	1768	S	London Area Greenbelt	Hillingdon London Boro
Not shown	1869	E	London Area Greenbelt	Hillingdon London Boro
Not shown	1995	NE	London Area Greenbelt	Ealing London Boro

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 Geo Insight**, available from our **website**. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell** hazard rating identified on the study site Low

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

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. 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 possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

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

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

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

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

Maximum Running Sand** 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
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. 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.

* This indicates an automatically generated 50m buffer and site.

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 site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

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

Coal mining areas within 75m of the study site

None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary

None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

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

BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: www.environment-agency.gov.uk
Email: enquiries@environment-agency.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: London Borough of Hillingdon
Phone: 01895 250 111
Web: <http://www.hillingdon.gov.uk/>
Address: Civic Centre, High Street, Uxbridge, Middlesex, UB8 1UW

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/Natural Resources Wales who retain the Copyright and Intellectual Property Rights for the data.

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<https://www.groundsure.com/terms-and-conditions-feb11-2019>

APPENDIX B
HISTORICAL MAP EXTRACTS
GS-6107110

Site Details:

UB10 0LZ

Client Ref: P19-1780_Former_Star_PH
Report Ref: GS-6107110
Grid Ref: 507974, 182317

Map Name: County Series

Map date: 1865

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1865
 Revised 1865
 Edition N/A
 Copyright N/A
 Levelled N/A

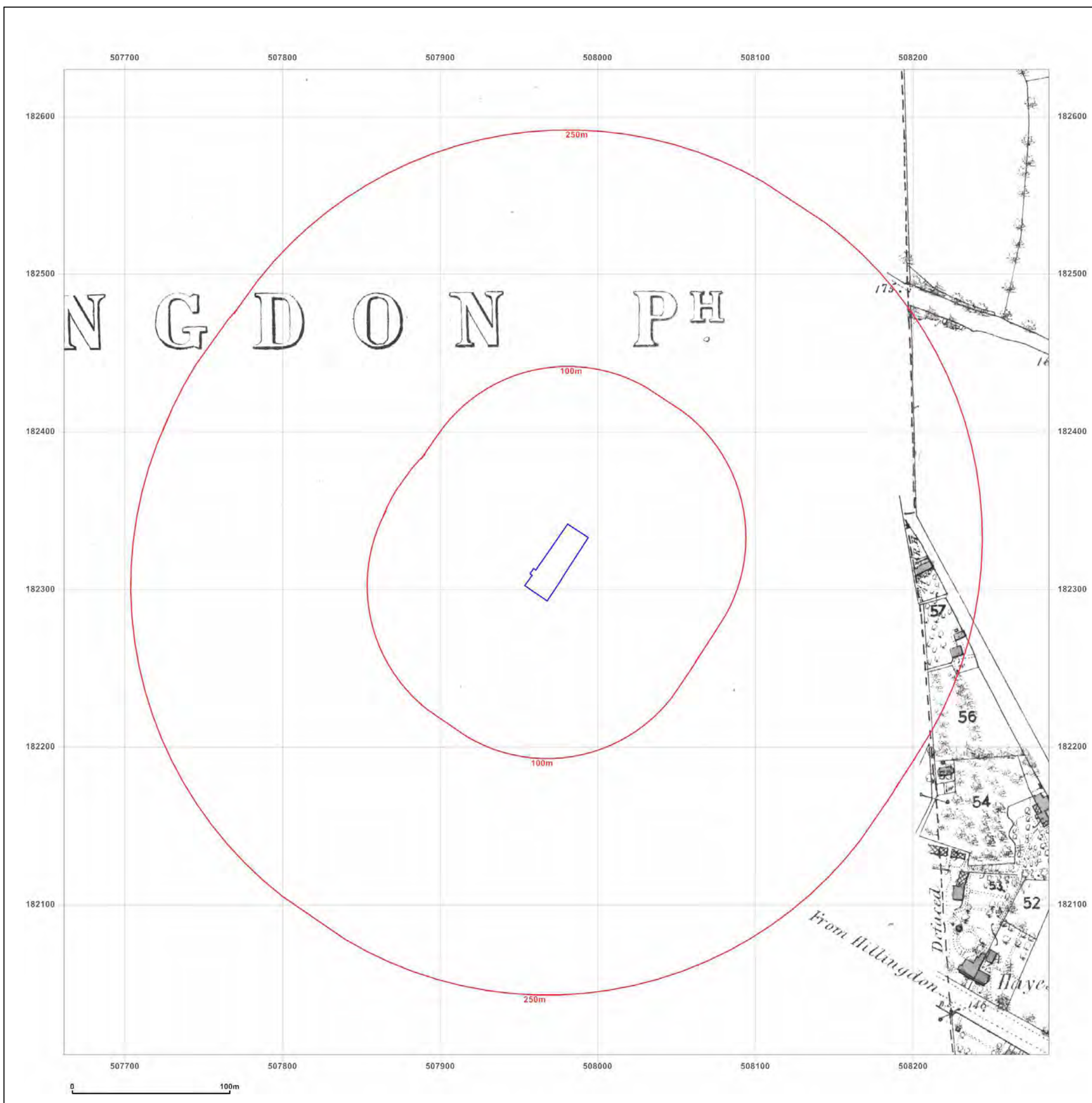


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 W: www.groundsure.com

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Production date: 18 June 2019

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

UB10 0LZ

Client Ref: P19-1780_Former_Star_PH
Report Ref: GS-6107110
Grid Ref: 507974, 182317

Map Name: County Series

Map date: 1866

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1866
 Revised 1866
 Edition N/A
 Copyright N/A
 Levelled N/A

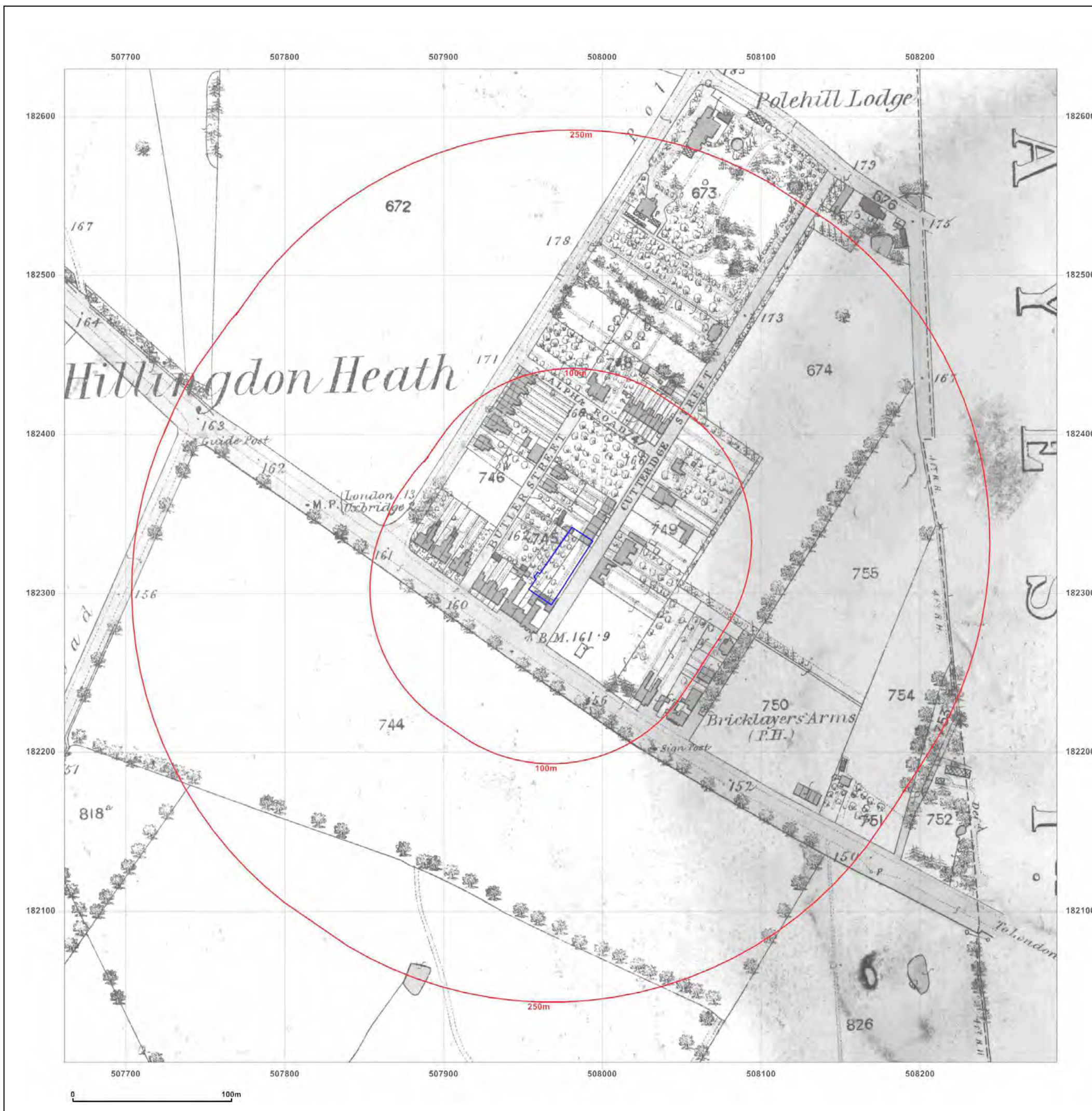


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Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

UB10 0LZ

Client Ref: P19-1780_Former_Star_PH
Report Ref: GS-6107110
Grid Ref: 507974, 182317

Map Name: County Series

Map date: 1895

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1895
 Revised 1895
 Edition N/A
 Copyright N/A
 Levelled N/A

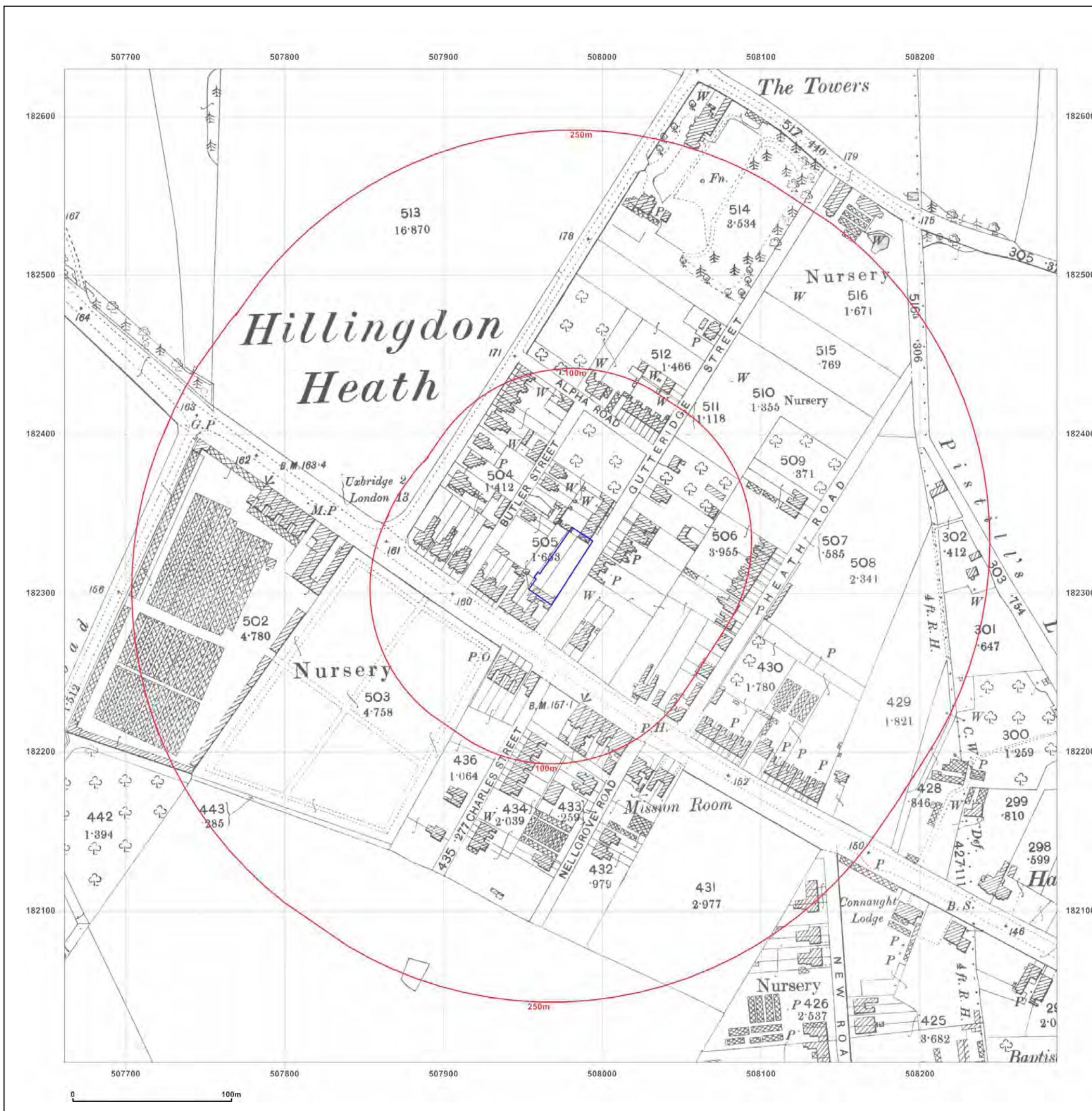


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Site Details:

UB10 0LZ

Client Ref: P19-1780_Former_Star_PH
Report Ref: GS-6107110
Grid Ref: 507974, 182317

Map Name: County Series

Map date: 1935

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1935
 Revised 1935
 Edition N/A
 Copyright N/A
 Levelled N/A

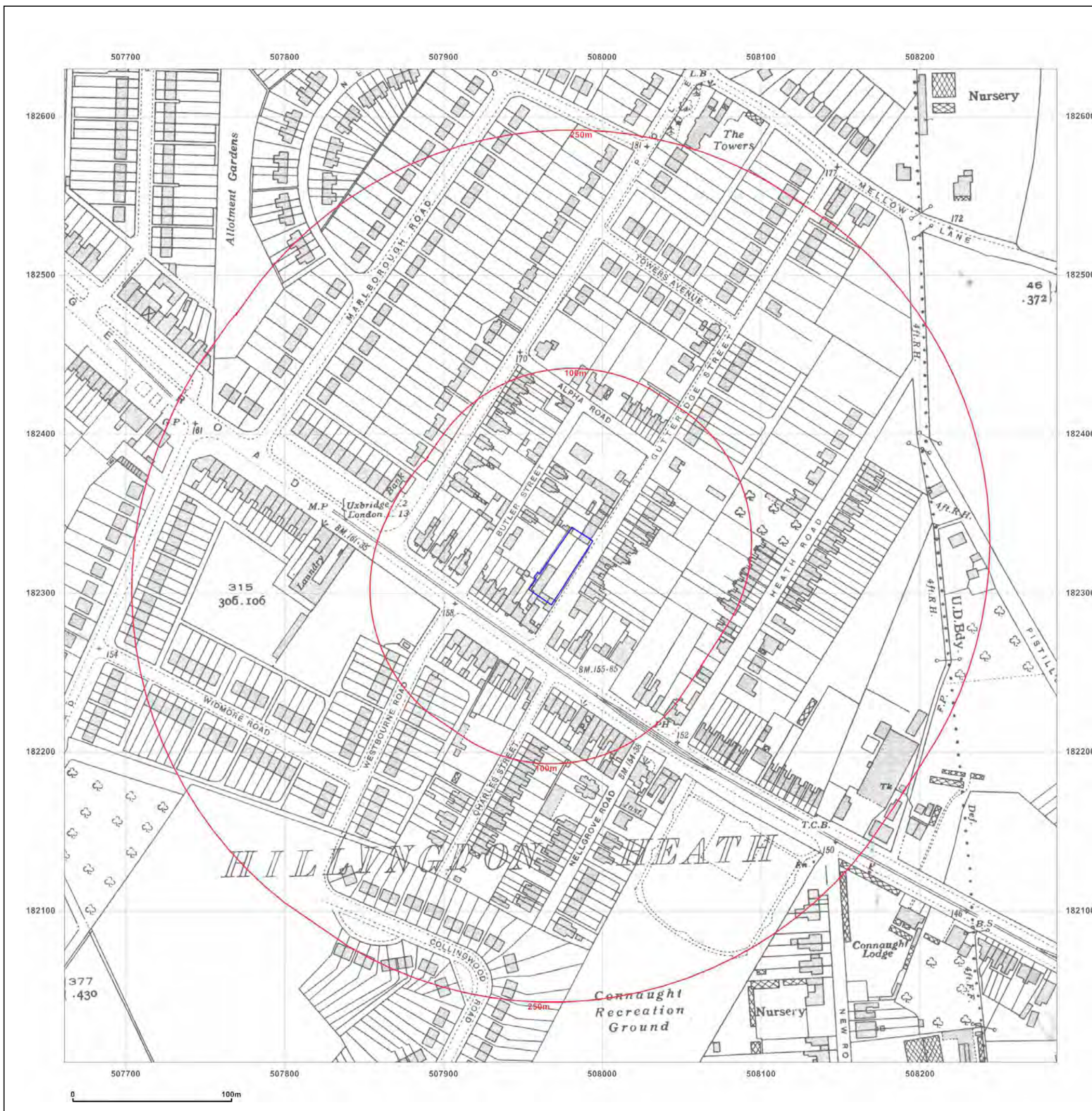


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Map legend available at:
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Site Details:

UB10 0LZ

Client Ref: P19-1780_Former_Star_PH
Report Ref: GS-6107110
Grid Ref: 507974, 182317

Map Name: National Grid

Map date: 1963-1965

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed 1963
 Revised 1963
 Edition 1965
 Copyright 1965
 Levelled 1957



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Surveyed 1963
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Surveyed N/A
 Revised N/A
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