

SEP Construction

Desk Study Report

For

Dye House, Liverpool Road

August 2022

REPORT NO: 22SEP003/DS

- *Desk Studies and Site Walkovers*
- *Intrusive Contaminated Land Investigations*
- *Geotechnical Appraisals and Ground Investigations*
- *Landfill Gas Assessments and Remedial Design*
- *Remediation Design and Implementation*
- *Remediation Project Management and Supervision*
- *Site Abnormal Assessments (Foundations and Contaminated Land)*

GEOTECHNICAL - CONTAMINATED LAND - FLOOD RISK

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1 EXECUTIVE SUMMARY

Note – The following summary is not exhaustive and is to be used for guidance purposes only. The full report should be consulted for full details.

Site Location

The site is located at Dye House, Liverpool Road, Prescot, L34 3LX. The coordinates on the British National Grid CRS are 345829, 392776. The proposed site is approximately 1.12 hectares in total.

Proposed Development

The proposed development consists of a proposed residential development comprising 2/2.5 storey dwellings and 2/3 storey apartment blocks with all associated infrastructure and landscaping.

Site Description

On Site

Site is accessed via a driveway from Liverpool Road to the south. Site is topographically lower by circa 1m to the adjacent Taylor Wimpey building site. Site also falls away from the road down towards the house itself. To the southeast of the house there is a small shed outbuilding with sheeting sides and roof (potential ACM). Possible septic tank or other drainage to the south of site marked by 3 close together manhole covers. The house and lawned garden are in the centre of site, this area is generally level. There is a brick garage/outbuilding adjacent to the house. The remainder of the site is overgrown with semi mature and mature trees. These areas are inaccessible to walk through/gates are overgrown.

Site History

On Site

The earliest available map is the 1850 1:10,560 map which shows Dye House, the north section of Brook Farm and gardens with a Well and Prescot Brook is shown flowing from north-west to south-east across site. Several field boundaries are also shown.

No further major changes occur onsite until the 1891 1:10,560 map when an additional building is shown immediately to the west of Dye House, the well is no longer shown and Brook Farm is no longer shown and replaced with woodland. No further major changes occur onsite to date.

Published Geology

The BGS map shows the geology (1:50,000) beneath the site as the following:

- Artificial Ground and Landslip – None Recorded.
- Drift – Till, Devensian – Diamicton.
- Solid – Pennine Lower Coal Measures Formation – Mudstone, Siltstone & Sandstone.

Radon Protection

The site lies within a low-risk area of radon where less than 1% of homes are estimated to be above the action level, based on the BRE 211 guidance.

Summary of Environmental Data

Possible Contamination Sources;

- Current Site Use – Residential, field, Woodland – Significant Risk; Possible (Localised).
- Historic Site Use – Dye House & Brook Farm – Significant Risk; Possible (Localised).
- Shallow Coal Workings/Bell Pits – Onsite – Significant Risk; Possible.
- Whittakers Garden Centre – 0m East of Site – Significant Risk; Possible.
- Former Tan Yard – 50m South of Site – Significant Risk; Unlikely.
- Garage - ~60m South-West of Site – Significant Risk; Unlikely.
- Electricity Substation - ~80m South-West of Site – Significant Risk; Low.
- Former Prescot Brook Colliery - ~100m South of Site – Significant Risk; Unlikely.
- Former Brook Pottery Works – 200m East of Site – Significant Risk; Low.

Pathways and Receptors

- Aquifers – Below Site – Significant Risk; Unlikely.
- Site End Users – Onsite – Significant Risk; Possible (Localised).
- Prescot Brook – Onsite – Significant Risk; Possible (Localised).

Qualitative Risk Assessment:

In this qualitative risk assessment, a generally Low – Moderate (Localised) risk for contamination and ground gas exists onsite. SI is required to confirm the risk potential and design remedial actions where necessary.

Coal Mining Risk Assessment:

In this qualitative risk assessment, a generally HIGH risk for unrecorded shallow workings / seams and shafts onsite. SI is required to confirm the risk potential and design remedial actions where necessary.

Geotechnical Risk Items:

- Possible service easements – liaison with utility providers advised.
- Potential foundations on site from former site use.
- Very high potential shallow mine workings with voids and bell pits / shafts (site wide drill and grout anticipated on 4.5m grid).
- Near surface coal likely to be encountered in deep excavations.
- Former well (probable shaft?).
- Retaining anticipated along northern boundary due to existing residential development levels
- Potential flood risk to site.
- Potential heave from trees/cohesive strata – piling may be problematic due to shallow workings.

Proposed Ground Investigation Scope:

On assessing the potential risks on site, we have compiled the following recommendations for initial investigation;

- Rotary coal mining investigation under coal authority licence comprising 15 No Open hole boreholes using water flush to a depth of 30-40m.
- Six (6 No.) window sample boreholes advanced to 3mbgl targeting former buildings and achieving site spread all installed with gas monitoring wells.
- Six (6 No.) ground gas monitoring visits over 3 months at varying barometric pressures.
- One (1 No.) day trial pitting targeting buildings and achieving site spread.
- Twenty (20 No.) soil samples taken for chemical assessment for soil cart-off - depending on ground conditions encountered this should include testing (topsoil, made ground and natural) to benchmark contamination levels across the site and allow for cart-off assessment. Proposed testing will include but not be limited to the following; heavy metals suite (comprising; As, Cd (low level), Cr Vi, Pb, Hg, Se, Ni, Cu, Zn), Organic Matter, Sulphate, pH, speciated polycyclic aromatic hydrocarbons and TPH CWG. Asbestos testing within topsoil and Made Ground (if present) with quantification for positive samples.
- Three (3 No.) water samples taken from Prescott Brook (upstream, midstream & downstream) for a standard suite of contaminants.
- Geotechnical analysis if clay strata is encountered for tree heave protection and concrete design classification (anticipated).

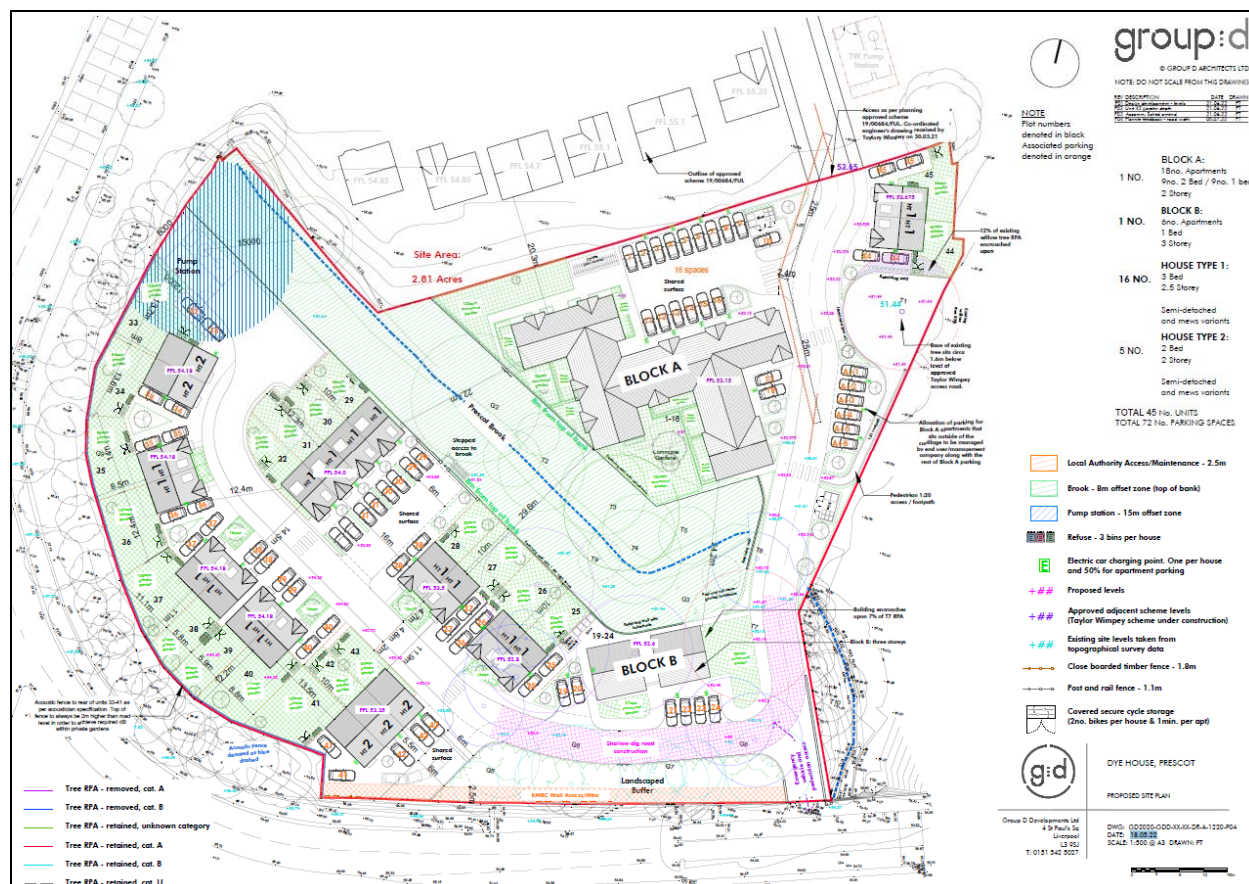
The scope of works should be agreed with the Local Authority prior to the intrusive ground investigation and as such may change.

2 SITE DESCRIPTION

2.1 Introduction

This investigation was carried out on the instruction of SEP Construction. The purpose of the work was to carry out a Desk Study to provide preliminary geotechnical and contamination risk assessment information to support a planning application for proposed residential development with roadways, gardens and associated landscaping. The site red edge can be seen below;





Proposed layout ref GD2020-GDD-XX-XX-DR-A-1220-P04 dated 18.05.22.

BLOCK A: 18no. Apartments 2 Storey.
BLOCK B: 6no. Apartments 3 Storey.

16No. HOUSE TYPE 1: 2.5 Storey Semi-detached and mews variants.
5No. 2 Storey Semi-detached and mews variants.

2.2 Site Location

The site is located at Dye House, Liverpool Road, Prescott, L34 3LX. The coordinates on the British National Grid CRS are 345829, 392776. The proposed site is approximately 1.12 hectares in total. See Site Location Plan in Appendix A.

2.3 Site Description

2.3.1 On Site

Site was visited by Betts Geo on 18th August 2022 and the following description outlines the main features of site, note; the majority of the site was not accessible on foot principally the wooded areas and field to the west of Dye House. Photographs from the site walkover can be seen in APPENDIX A.

Site is accessed via a driveway from Liverpool Road to the south. Site is topographically lower by circa 1m to the adjacent Taylor Wimpey building site. Site also falls away from the road down towards the house itself. To the southeast of the house there is a small shed outbuilding with sheeting sides and roof (potential ACM). Possible septic tank or other drainage to the south of site marked by 3 close together manhole covers. The house and lawned garden are in the centre of site, this area is generally level. There is a brick garage/outbuilding adjacent to the house. The remainder of the site is overgrown with semi mature and mature trees. These areas are inaccessible to walk through/gates are overgrown.

2.3.2 Surrounding Area

Surrounding land uses for the site are as follows:

- North – 0 – 100 m N residential development (in progress), 100 – 150m N is A58 by-pass, 150 – 500m N is agricultural land forming park of the Knowsley Hall estate.
- West – 0 – 500m West is Junction 2 of the M57 with woodland landscaping with Forest Farm at 400m West.
- South – 0m – 250m S is residential housing, 250 – 500m S is public open space and Carr Lane Park with M57 motorway.
- East – 0m – 200m E is residential development (in progress), 200 – 300m E is Whittakers Garden Centre, 300 – 500m E is the Prescot urban area.

3 SITE HISTORY

3.1 Site History from Ordnance Survey Maps

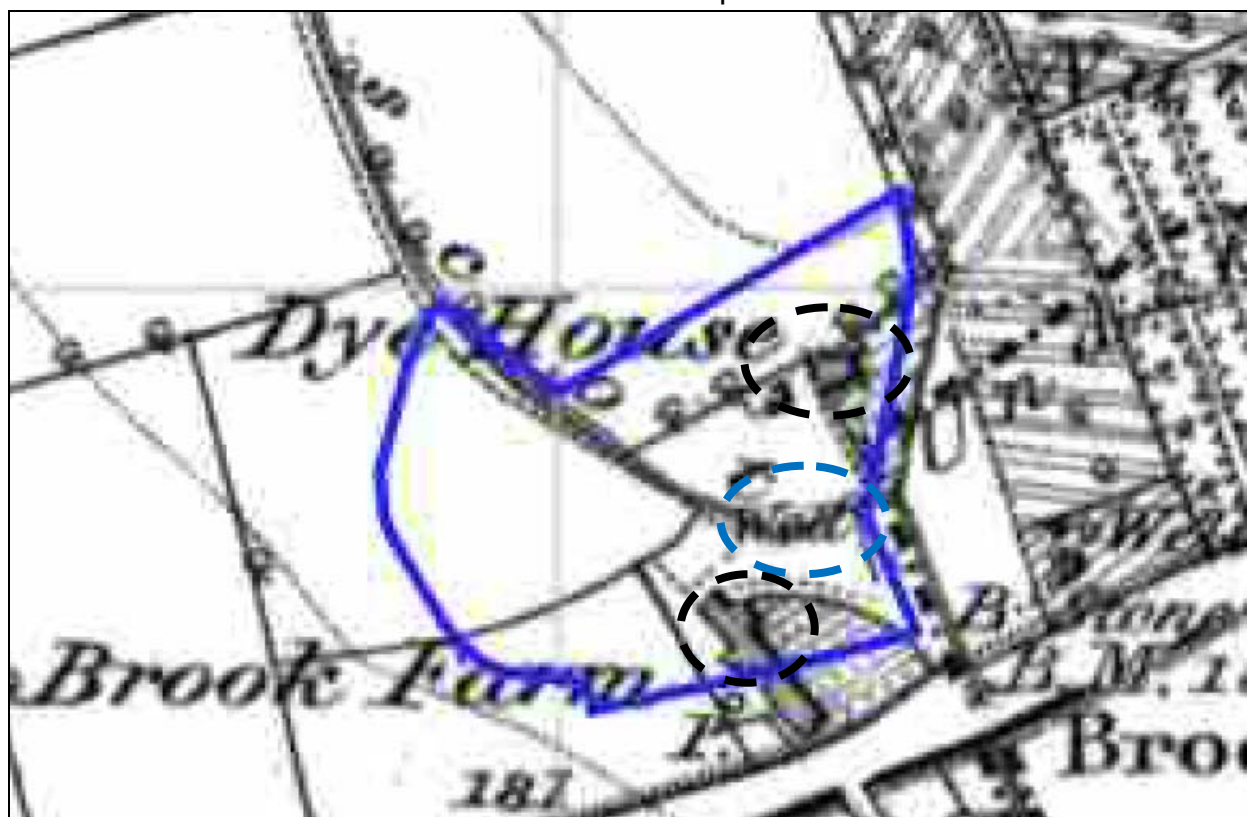
A search of available historic maps was undertaken to establish the land use history of the site. Extracts of the maps are discussed below and can be found in full in Appendix B of this report. All maps are Ordnance Survey unless otherwise stated. All distances quoted on OS maps are taken from the site boundary, which is marked on the map.

3.2 Summary of Site History

3.2.1 On Site

The earliest available map is the 1850 1:10,560 map which shows Dye House, the north section of Brook Farm and gardens with a Well and Prescott Brook is shown flowing from north-west to south-east across site. Several field boundaries are also shown. An extract is shown below:

1850 1:1056 Map



No further major changes occur onsite until the 1891 1:10,560 map when an additional building is shown immediately to the west of Dye House, the well is no longer shown and Brook Farm is no longer shown and replaced with woodland. An extract s shown below;

1891 1:10,560 Map



No further major changes occur onsite to date.

3.2.2 Surrounding Area

The following table summarises the significant changes in historical use surrounding the site:

Date	Land Uses
1850	0m East of Site – Nursery shown, expanded with glass houses by 1891, sequentially expanded with glass houses until 1966, no glass houses shown by 2001, limited building expansion by 2022 with residential development adjoining site. A well is shown off site to the east opposite on the opposite side of the brook (coincides with a shaft identified by Van Elle 2021) 50m South of Site – Tan Yard shown, no longer shown by 1891. 100m South of Site – Prescott Brook Colliery shown, no longer shown by 1891, redeveloped to residential housing by circa 1965. 200m East of Site – Brook Pottery (Coarse Earthenware) shown, no longer shown by 1891, site redeveloped to residential housing by 1925.
1906	300m South of Site – Huyton Golf Course shown, remains to present.
1925	250m East of Site – Residential expansion of the Prescott urban area, continues to present.
1954 – 1955	80m South-West of Site – Garage and electricity substation shown, remain to present.
1978	10m West of Site – Prescott bypass shown with M57 junction 2 beyond.

4 GEOLOGY

The following section details the published and available geological data available for the site and the surrounding area. All data is taken from the Groundsure Data report located in Appendix C unless otherwise stated. This report should be referred to for full details.

4.1 Published Geology

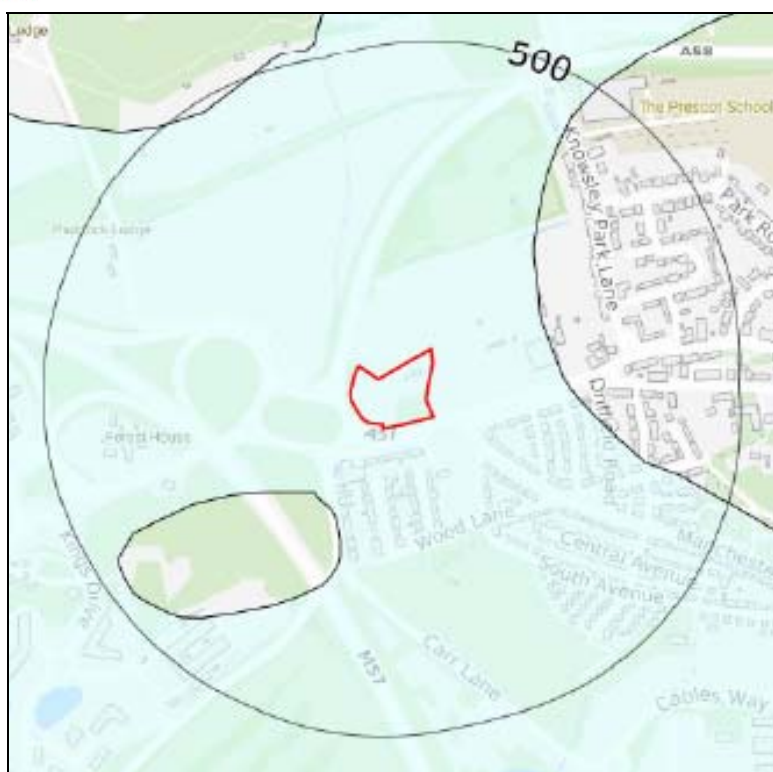
The documented geology of the site is summarised on the British Geological Survey map principally, with further site-specific details detailed below.

Geology	Artificial Ground & Land Slip	Drift	Solid
1:50,000	None Recorded*	Till, Devensian – Diamicton	Pennine Lower Coal Measures Formation – Mudstone, Siltstone & Sandstone

*Due to the sites development history the presence of made ground cannot be discounted despite none being recorded in the Groundsure dataset.

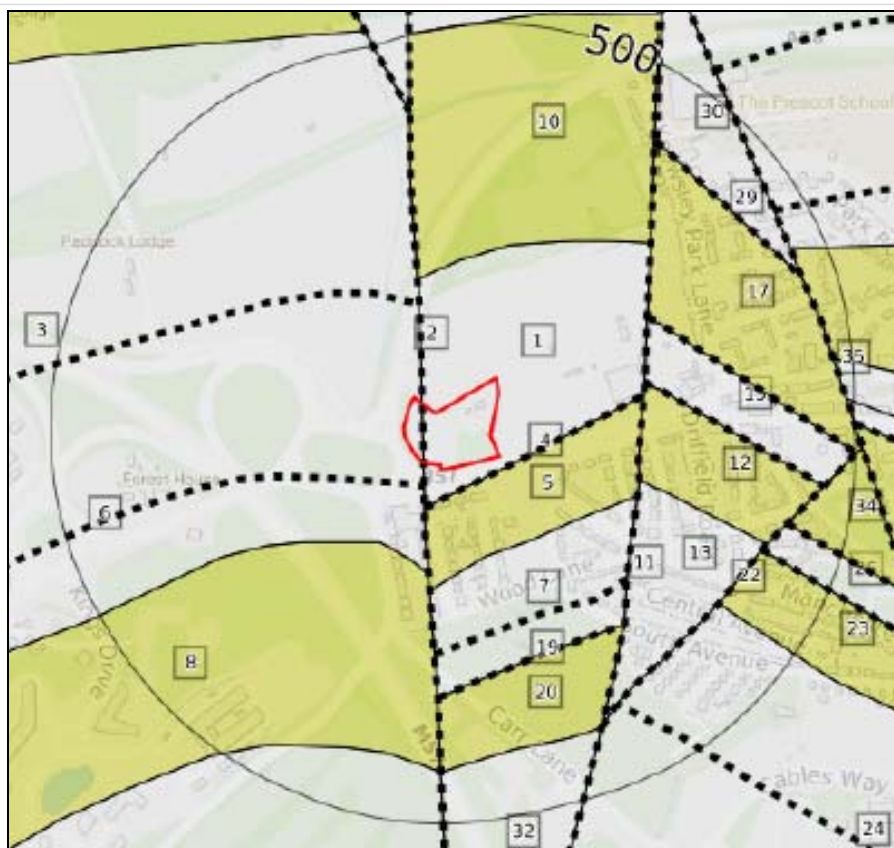
Superficial Geology

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON



Bedrock Geology

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

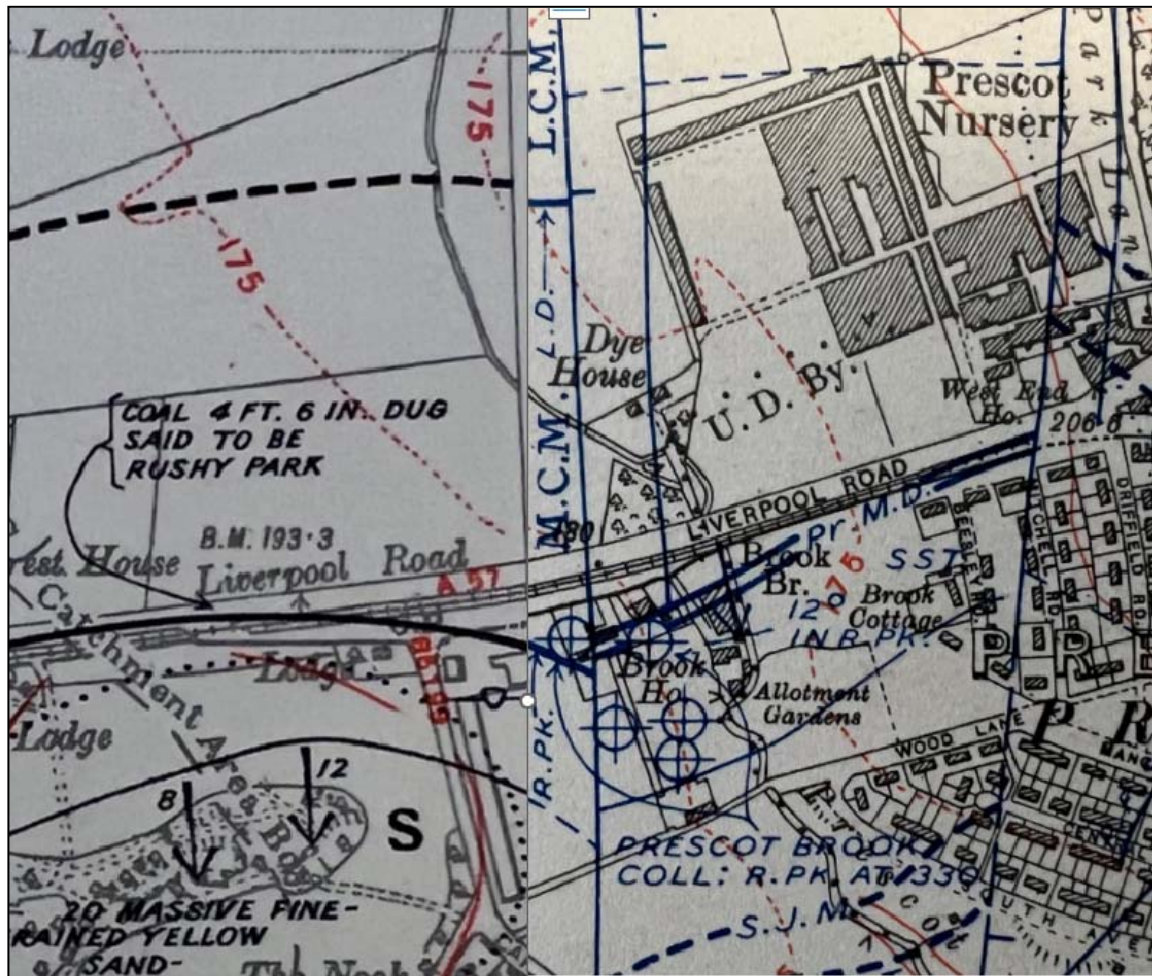


4.1.1 Linear Features

There is one (1 No.) entry for linear features onsite relating to a fault with a further seven (7 No.) entries within 250m of site. Extract below:

ID	Location	Category	Description
2	On site	FAULT	Fault, inferred
4	18m SE	ROCK	Coal seam, inferred
6	33m S	ROCK	Coal seam, inferred
9	133m N	ROCK	Coal seam, inferred
11	197m E	FAULT	Fault, inferred
14	207m E	ROCK	Coal seam, inferred
16	230m S	ROCK	Coal seam, inferred
18	231m E	ROCK	Coal seam, inferred

The BGS 6" series maps are split over two maps for the site 1928 BGS geology map sheet 107NE and 107NW



1928 BGS geology map sheet 107NE

The 6" map shows the Rushy Park seam to the north (considerable distance away) and the Prescott Main Delf seams to the south of Liverpool Road dipping southwards at 12 degrees.

This map also shows a further N-S trending Faultline on site with the down throw to the east (believed to be interpolated from workings in the Rushy Park Mine)

Insert 1928 BGS geology map sheet 107NW

The 6" map shows the Rushy Park seam (4ft 6 thick 'said to be Rushy Park') to the west running along Liverpool road before getting intersected by a N-S trending fault, showing it not to be present on site. Additionally the crop of Little Delf is noted to the west, again intersected by the same fault line, and absent on site. This map shows this crop with a ? marked on it – clearly the data being questioned in 1928. It is probably confused naming of seams due to the extensive faulting in this locality. Dip information is vague but anticipated to be between 8 and 12 degrees to the south.

Seam information:

Prescot Main Delf is a 4.0m thick seam separated by thin shale layers into 3 beds of coal. There are only two seams of economic importance below the Prescot Main Delf, these being the 1.4m thick Rushy Park Coal at 80m depth and the 0.8m thick Little Delf 60m below that seam.

4.1.2 Historic Borehole Records

Previous work undertaken By Wardell Armstrong (ref Wardell Armstrong LE14138/001/V0.3, dated May 2018) identified the seams upon the adjacent site at shallow depth.

There are several exploratory hole logs available nearby from site investigation works at the adjacent garden centre, some of the rotary borehole logs are summarised below and can be seen in APPENDIX A.

Rotary boreholes generally encountered clay or made ground over sequences of sandstone and mudstone of the lower coal measures from circa 3-6m and proven to 30mbgl with coal seams and former shallow coal workings encountered at 2.7 – 9.1mbgl.

Note: It is noted that this geological sequence does not correlate with the 1:50,000 and 6" 1928 published geology maps.

4.2 Geological Features

Several ground workings have been noted on and within 250 m of site, further details are provided in the sections below.

4.2.1 Surface ground workings

There are fifteen (15 No.) entries for surface ground workings within 250m of site and relate to colliery, cuttings, heaps, pits and quarries. Extract below;

ID	Location	Land Use	Year of mapping	Mapping scale
A	27m SE	Unspecified Ground Workings	1955	1:10560
A	39m S	Colliery	1851	1:10560
A	104m S	Unspecified Heap	1966	1:10560
A	140m S	Unspecified Pit	1966	1:10560
B	168m SW	Cuttings	1975	1:10000
B	168m SW	Cuttings	1990	1:10000
A	187m S	Unspecified Heap	1950	1:10560
1	190m NW	Pond	1851	1:10560
C	199m S	Unspecified Pit	1955	1:10560
D	206m SW	Unspecified Quarry	1891	1:10560
C	208m S	Unspecified Pit	1950	1:10560
E	209m W	Cuttings	1975	1:10000
E	209m W	Cuttings	1990	1:10000
D	218m SW	Unspecified Quarry	1925	1:10560
D	218m SW	Unspecified Quarry	1906	1:10560

4.2.2 Underground Workings

There are no recorded underground workings within 500m of site.

4.2.3 Coal Mining

The Coal Authority online records shows the site not to be at risk from shallow workings however the purchased records ref 51003304078001 states the following:

Past underground mining

No past mining recorded.

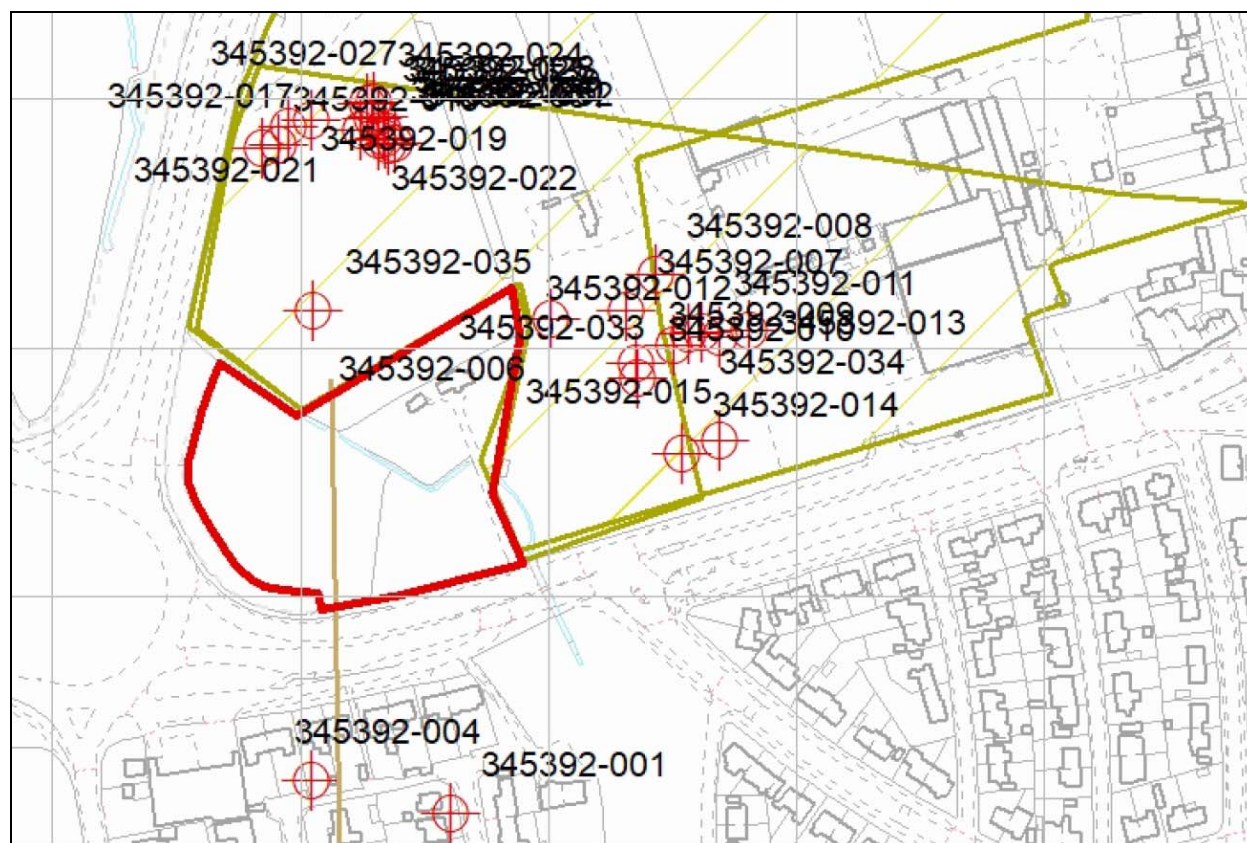
Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Local knowledge of the adjacent site has identified significant risk of shallow workings and multiple crown hole / soft push and bell pits / shafts. The CA records have been updated with this information and shown on the below excerpt with 23 shafts on the adjacent site to the east pressure grouted in 2021.



It is worth noting that the well noted on the 1850's OS map to the east is one of the coal shafts 014 which has been treated in the redevelopment by Taylor Wimpey/Van Elle.

The land to the east of the subject site has been investigated in the past, prior to the construction of the current garden centre buildings and car park. A Geotechnics investigation in 1989 located the outcrop and shallow workings in the Prescott Main Delf under the current car park and main building, 50m north of the Geological Survey location. The Prescott Main Delf seam appears to be some 200m north of the Geological Survey location.

Historically the logs show a coal seam 1.1m and 1.6m thick which Wardell interpreted as the Little Delf seam. The log descriptions lack detail and the coal encountered may be the Little Delf, as described by Wardell, but the thickness of the seam compared to the known recorded 0.8m thickness of the Little Delf and the depths that the coal was encountered may indicate that these holes passed through the remnants of workings in the Prescott Main Delf. In either case, mine workings are likely to extend across the site, all be it somewhat mixed up due to the probability of faulting under the site.

4.2.4 Non-Coal Mining

The site does not lie within an area of non-coal mining.

4.3 Radon

The site lies within a low-risk area of radon where less than 1% of homes are estimated to be above the action level, based on the BRE 211 guidance therefore no radon protection measures are required.

4.4 Hydrogeological and Hydrological Features

The table below summarises the presence/absence of any hydrological licences and incidents within 500m of the proposed site. If entries are present within 250m, further details are provided in the relevant subsection below;

Data Type	On Site	0 – 250m	250 – 500m
Hydrogeology & Hydrology			
Licensed Discharge Consents	-	-	2
Pollutant Release to Surface Waters (Red List Discharge Consents)	-	-	-
Pollution Incidents	-	2	-
Groundwater Abstraction Licences	-	-	-
Surface Water Abstraction Licences	-	2	-
Potable Water Abstraction Licences	-	-	-
Source Protection Zones	-	-	-
Groundwater Vulnerability & Soil Leaching Potential	Identified within 50m of site		
Surface Water Features	1	1	Not Searched

4.4.1 Pollution Incidents

There are two (2 No.) records for pollution incidents within 250 m of site relating to asbestos and other pollutant from 2001. An extract is provided below:

ID	Location	Details	
A	109m SW	Incident Date: 13/07/2001 Incident Identification: 16187 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
A	115m S	Incident Date: 13/08/2001 Incident Identification: 23908 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

4.4.2 Surface Water Abstraction Licenses

There are two (2 No.) entries for surface water abstraction licences within 250m of site and relate to historical licences for the abstraction of water from Prescott Brook for direct spray irrigation at the nearby Whittakers Garden Centre. Extract below;

ID	Location	Details	
A	17m SE	Status: Historical Licence No: 2569028003 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "LOGWOOD MILL BROOK AT LH'S PREMISES, PRESCOT, MERSEYSIDE" Data Type: Point Name: JAMES WHITAKER & SONS NURSERYMEN LTD Easting: 345900 Northing: 392700	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1999 Version End Date: -
A	17m SE	Status: Historical Licence No: 2569028003 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: LOGWOOD MILL BROOK AT LH'S PREMISES, PRESCOT, MERSEYSIDE Data Type: Point Name: JAMES WHITAKER & SONS NURSERYMEN LTD Easting: 345900 Northing: 392700	Annual Volume (m³): 772.82 Max Daily Volume (m³): 77.282 Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1999 Version End Date: -

4.4.3 Groundwater Vulnerability & Soil Leachig Potential

There soils beneath site are classified as having low vulnerability and low leaching potential. Extract below;

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300- 550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

4.4.4 Surface Water Features

There is one (1 No.) surface water feature recorded onsite with a further one (1 No.) surface water feature within 250m of site both relating to Prescott Brook.

4.4.5 Hydrogeology

- The superficial deposits of the glacial till are designated as a Secondary Undifferentiated aquifer.
- The bedrock deposits of the Pennine Lower Coal Measures Formation are designated as a Secondary A aquifer.
- The site does not lie within a source protection zone.
- The site contains areas classified as High and Medium risk from flooding.

5 ENVIRONMENTAL DATA

The following section details environmental data available for the site and the surrounding area. Full details can be found in the Groundsure Report by located in Appendix C.

The table below summarises the presence/absence of any waste, hazardous substance sites of industrial land uses within 500m of the proposed site. If entries are present within 250m, further details are provided in the relevant section below.

Data Type	On Site	0 – 50m	50 – 250m	250 – 500m
Current Industrial Land Use				
Recent Industrial Land Uses	-	-	4	-
Current or Recent Petrol Stations	-	-	1	-
Electricity Cables	-	-	-	-
Gas Pipelines	-	-	-	-
Sites Determined as Contaminated Land	-	-	-	-
Control of Major Accident Hazards	-	-	-	-
Regulated Explosive Sites	-	-	-	-
Hazardous Substance/Storage	-	-	-	-
Historical Licensed Industrial Activities (IPC)	-	-	-	-
Licensed Industrial Activities	-	-	-	-
License Pollutant Release	-	-	-	-
Radioactive Substance Authorisations	-	-	-	-
Pollutant Release to Surface Waters	-	-	-	-
Pollutant Release to Public Sewer	-	-	-	-
List 1 & 2 Dangerous Substances	-	-	-	-
Pollution Incidents (EA/NRW)	-	-	-	-
Pollution Inventory Substances	-	-	-	-
Pollution Inventory Waste Transfers	-	-	-	-
Pollution Inventory Radioactive Waste	-	-	-	-
Waste and Landfill				
Active or recent landfill (EA/NRW)	-	-	-	-
Historical Landfill (BGS Records)	-	-	-	-
Historic Landfill (LA)	-	-	-	-
Historic Landfill (EA/ NRW)	-	-	-	-
Historical Waste Sites	-	-	-	-
Licensed Waste Sites (EA / NRW)	-	-	-	-
Waste Exemptions	1	-	8	-
Past Land Use				
Historical Industrial Land Uses	10	7	17	19

Historical Tanks	-	-	3	6
Historical Energy Features	-	-	2	5
Historical Petrol Stations	-	-	-	-
Historical Garages	-	-	3	-
Environmental Designations				
Sites of Special Scientific Interest (SSSI)	-	-	-	-
Special Areas of Conservation (SAC)	-	-	-	-
Special Protection Areas (SPA)	-	-	-	-
Areas of Outstanding Natural Beauty (AONB)	-	-	-	-
National Parks	-	-	-	-
Green Belt Land	-	1	-	-
Nitrate Vulnerable Zones	1	-	-	1

5.1 Current Industrial Land Use

5.1.1 Recent Industrial Land Uses

There are four (4 No) entries for recent industrial land uses within 250m of site and relate to a nearby garage, substation, vehicle repair and servicing business and a tanks. Extract below;

ID	Location	Company	Address	Activity	Category
A	76m SW	Huyton Lane Garage	Brookbridge Garage, Liverpool Road, Prescot, Merseyside, L34 1NL	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	95m SW	Electricity Sub Station	Merseyside, L34	Electrical Features	Infrastructure and Facilities
1	185m SE	Auto Cosmetic Solutions	40, Wood Lane, Prescot, Merseyside, L34 1LW	Vehicle Repair, Testing and Servicing	Repair and Servicing
2	232m NE	Tank	Merseyside, L34	Tanks (Generic)	Industrial Features

5.1.2 Current or Recent Petrol Stations

There is one (1 No.) entry for current or recent petrol stations within 250m of site and relate to an obsolete address to the south of on Liverpool road. Extract below;

ID	Location	Company	Address	LPG	Status
A	64m S	OBSOLETE	Liverpool Road, Prescot, Merseyside, L34 1NN	Not Applicable	Obsolete

5.2 Waste & Landfill

5.2.1 Waste Exceptions

There is one (1 No.) entry for a waste exception for onsite with a further eight (8 No.) entries within 250m of site. The entry for onsite relates to the management of silt from Prescott Brook with use either for construction or the garden centre. The surrounding entries relate to various horticulturally related operations at Whittakers garden centre and a couple for a farm fronting Liverpool Road. Extract below;

ID	Location	Site	Reference	Category	Sub-Category	Description
1	On site	Prescot brook with current silt management in place. Existing garden centre to remain for 2 years of initial site remediation	WEX268937	Using waste exemption	Not on a farm	Use of waste in construction
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Disposing of waste exemption	Both agricultural and non-agricultural waste	Burning waste in the open
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Treating waste exemption	Both agricultural and non-agricultural waste	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste in construction
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of mulch
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Using waste exemption	Both agricultural and non-agricultural waste	Spreading of plant matter to confer benefit
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Using waste exemption	Both agricultural and non-agricultural waste	Incorporation of ash into soil
A	188m E	LIVERPOOL ROAD, PRESCOT, L34 3LX	WEX061986	Using waste exemption	On a farm	Spreading waste on non-agricultural land to confer benefit
A	188m E	LIVERPOOL ROAD, PRESCOT, L34 3LX	WEX061986	Using waste exemption	On a farm	Use of mulch

5.3 Past Land Use

5.3.1 Historical Industrial Land Uses

There are ten (10 No.) entries for historical industrial land uses relating the Dye House, nursery and unspecified commercial/industrial with a further twenty-four (24 No.) entries within 250m of site relating to a range of historical land uses. Extract below;

ID	Location	Land use	Dates present	Group ID
A	On site	Nursery	1925	859770
B	On site	Dye House	1955	896032
B	On site	Dye House	1950	954305
B	On site	Dye House	1851	973203
C	On site	Nursery	1950	870017
C	On site	Nursery	1955	903324
D	On site	Nursery	1990	935132
D	On site	Nursery	1966 - 1975	964074
D	On site	Unspecified Commercial/Industrial	1950 - 1955	970823
1	14m S	Tramway Sidings	1955	854072
E	26m S	Railway Sidings	1950	794599
E	26m S	Tramway Sidings	1925 - 1938	892387
F	27m SE	Unspecified Ground Workings	1955	799863
E	27m S	Tramway Sidings	1925	985822
F	33m S	Tan Yard	1851	797996
F	39m S	Colliery	1851	798241
F	104m S	Unspecified Heap	1966	803300
F	140m S	Unspecified Pit	1966	839691
2	145m E	Earthenware Pottery	1851	834889
H	168m SW	Cuttings	1975	900674
H	168m SW	Cuttings	1990	978280
3	179m NE	Nursery	1906 - 1938	916443
F	187m S	Unspecified Heap	1950	803294
4	199m S	Unspecified Pit	1950 - 1955	873550
I	206m SW	Unspecified Quarry	1891	918037
J	209m W	Cuttings	1975	898753
J	209m W	Cuttings	1990	990987
K	211m NE	Unspecified Tank	1950	824618
I	218m SW	Unspecified Quarry	1906 - 1925	862419
K	220m NE	Unspecified Tank	1955	824619

5.3.2 Historical Tanks

There are three (3 No.) entries for historical tanks within 250m of site. Extract below;

ID	Location	Land use	Dates present	Group ID
K	212m NE	Unspecified Tank	1937	113181
K	221m NE	Unspecified Tank	1995	123065
K	221m NE	Unspecified Tank	1955 - 1974	127986

5.3.3 Historical Energy Features

There are two (2 No.) entries for historical energy features within 250m of site and relate to electricity substations. Extract below;

ID	Location	Land use	Dates present	Group ID
G	76m SW	Electricity Substation	1954 - 1993	69128
G	96m SW	Electricity Substation	1976	74008

5.3.4 Historical Garages

There are three (3 No.) entries for historical garages within 250m of site. Extract below;

ID	Location	Land use	Dates present	Group ID
G	55m S	Garage	1976	20983
G	56m S	Garage	1954 - 1993	26870
G	57m S	Garage	1954 - 1965	26011

5.4 Environmental Designations

5.4.1 Greenbelt Land

There is one (1 No.) entry for greenbelt land within 250m of site and relates to the Merseyside and Greater Manchester greenbelt. Extract below;

ID	Location	Name	Local Authority name
1	9m SW	Merseyside and Greater Manchester	Knowsley

5.4.2 Nitrate Vulnerable Zones

There is one (1 No.) entry for nitrate vulnerable zones for onsite and relates to surface water of the brook running through site. Extract below;

Location	Name	Type	NVZ ID	Status
On site	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing

6 SUMMARY OF ENVIRONMENTAL SENSITIVITY

The following section is a review of the environmental sensitivity of the site as discussed in Sections 2 - 6. Significant potential risks are discussed in the following subsections and will then be evaluated as part of the Site Conceptual Model in Section 8.

Sources are defined as where pollution comes from, pathways are a route in which the pollution travels and receptors are anything affected by a pollutant. Further details on Source-Pathway-Receptor methodology can be found in Appendix D.

The table in section 6.1 focuses on significant site-specific sources, pathways and receptors. More 'generic' pathways and receptors (such as site end uses) will be covered as part of the full Site Conceptual Model in Section 7.

6.1 Sources

Source	Distance/ Direction	Details	Significant Risk
Current Site Uses	On Site	The site is currently used as a dwelling with outbuilding and driveway, majority of site is covered with grassed field and woodland with a brook dissecting site. Potential for localised residential related contamination	Possible (Localised)
Historic Site Use (Dye House & Brook Farm)	On Site	potential localised contamination from former site use as a Dye House with outbuilding. Brook Farm is also shown in earliest mapping straddling the south boundary of site, assumed demolished by circa 1890, potential for localised contamination and demolition materials at former footprint.	Possible (Localised)
Shallow Coal Workings/Bell Pits	On Site	Due to mining history of the area, nearby sites and geology, bell pits may exist onsite with colliery related contamination from spoil/excavation arisings. Ground gas risk from shallow workings is deemed probable.	Possible
Whittakers Garden Centre	0m East of Site	Potential range of contamination from long standing nursery business located adjacent to site, many waste exceptions recorded and silt management potentially used onsite.	Possible
Former Tan Yard	50m South of Site	Former tan yard only shown on earliest mapping and located downstream from site reduces risk to site.	Unlikely
Garage	~60m South-West of Site	Active Garage fronting Liverpool Road, potential for vehicular related contamination from vehicle leaks and maintenance, distance from site reduces risk.	Unlikely
Electricity Substation	~80m South-west of Site	Existing substation unlikely to contain PCBs due to legislation banning containing products.	Low
Former Prescott Brook Colliery	~100m South of Site	Former colliery shown on earliest mapping, later redeveloped to residential housing, some colliery waste/contamination may remain but distance from site reduces risk.	Unlikely
Former Brook Pottery Works	200m East of Site	Former pottery works later redeveloped to housing, some contamination may remain however distance from site reduces risk.	Low

6.2 Pathways and Receptors

Pathways and Receptors	Distance/ Direction	Details	Significant Risk
Aquifers	Below Site	The bedrock deposits on site are designated as a Secondary A aquifer with the superficial deposits recorded as Secondary	Unlikely

		differentiated aquifer will limit vertical and lateral contamination spread. Site does not lie within Source Protection Zone.	
Site End Users	On Site	Proposed site end use is residential which presents a highly sensitive receptor, potential for localised contamination onsite.	Possible (Localised)
Prescot Brook	On Site	Brook running through site presents a sensitive receptor and is also recorded as within a nitrate vulnerable zone for surface waters. Potential for localised contamination onsite.	Possible (Localised)

7 INITIAL CONTAMINATION CONCEPTUAL MODEL

For details on how the conceptual model is evaluated please refer to Appendix D.

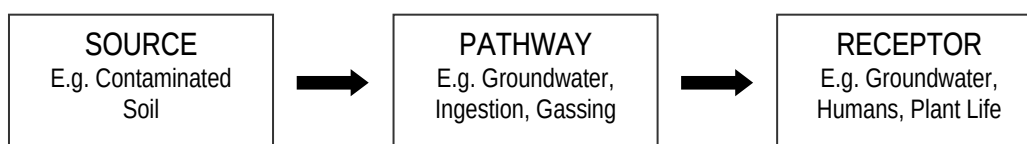
This section of the report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

Potential contamination sources and environmentally sensitive receptors have been discussed in Section 6. Potentially significant risks are evaluated as part of the subsequent sub-sections.

7.1 Source-Pathway-Receptor-Linkages

The risk assessment uses a 'Source-Pathway-Receptor' methodology for assessing whether a source of contamination could potentially lead to harmful consequences. This means that there needs to be a pollutant linkage from source to receptor for harm to be caused, this linkage consisting of; a source of pollution; a pathway for the pollutant to move along; a receptor that is affected by the pollutant.

The current potential risks to site arising from various Source-Pathway-Receptor linkages are assessed below. A risk may be considered significant if all three of the stages are present and therefore providing a pollution linkage. The various sources, pathways and receptors are considered separately. The assessment is based on the future use, which is understood to be residential 2-2.5 storey residential and apartment blocks with associated gardens and carparking .



Type of Contamination	Potential Sources	Potential Pathway	Potential Receptors	Pollution Linkage	Comment	Estimated Level of Risk
Ground Gas	Historic Site Uses	Inhalation of Vapours	Construction/ Maintenance Workers	Potentially Active	Potential for ground gas on site from buried organics within made ground and seepage from shallow coal workings beneath site. Ground investigation to confirm. PPE to protect construction workers.	Moderate
	Shallow Coal Workings	Vapours Penetrating Unprotected Buildings	Future Site Users	Potentially Active	Potential for ground gas on site from buried organics within made ground and seepage from shallow coal workings beneath site. Cohesive superficial deposits onsite may limit for ground gas migration. Future end use to be residential therefore high sensitivity. Ground investigation to confirm.	Moderate
	Adjacent Garden Centre					
Surface and Near Surface Contaminants Within Soils	Current Site Use Historic Site Use Shallow Coal Workings/Bell Pits Adjacent Garden Centre	Ingestion, Inhalation, Dermal Contact	Current Site Users	Potentially Active	Site is currently occupied by Dye House with associated outbuilding, garden and driveway, majority of site is grassed field with woodland.	Low – Moderate (Localised)
			Construction Workers	Potentially Active	Potential for localised contamination onsite. Ground investigation to confirm. Suitable PPE to protect workers.	Low – Moderate (Localised)
			Future Site Users	Potentially Active	Potential for localised contamination onsite. Future site use is residential therefore high sensitivity end use.	Low – Moderate (Localised)
			Adjacent Land Users	Potentially Active	Adjacent site use is mainly roads and residential/garden centre. Some contamination anticipated on site although likely to be localised. Cohesive superficial deposits will limit contaminant spread.	Low - Moderate
		Direct Contact	Structures	Potentially Active	Potential for localised contamination onsite, no significant widespread contamination expected. Unlikely to affect structures.	Low
		Absorption in Root Zone	Plants	Potentially Active	Potential for localised contamination onsite. Future site use is residential therefore is a high sensitivity proposed site end use.	Low – Moderate (Localised)
		Mobile Contaminants, Leachables e.g. from Pollution Sources Adjacent to Site/On Site	Current Site Use	Leaching into Groundwater	Groundwater	Potentially Active
Historic Site Use						
Shallow Coal Workings/Bell Pits	Off-site Migration in Groundwater		Abstractions	Potentially Active	Historical surface water abstraction nearby (assumed defunct), no further water abstractions identified within 250m of site. Site does not lie within Groundwater Source Protection Zone.	Low
Adjacent Garden Centre			Controlled Waters	Potentially Active	Potential for localised contamination onsite. Prescott Brook flows through site presenting a sensitive receptor to mobilizable contamination.	Low – Moderate
Organic and Inorganic Contaminants Within Soils / Groundwater	Current Site Use Historic Site Use Shallow Coal Workings/Bell Pits Adjacent Garden Centre	Potable Water Supply Pipes	Utilities Workers	Potentially Active	Potential for localised contamination onsite. SI required to confirm. Requirement for UU Assessment not anticipated.	Low – Moderate (Localised)

7.2 Contamination Summary

In this qualitative risk assessment, a generally Low – Moderate (Localised) risk for contamination and ground gas exists onsite. SI is required to confirm the risk potential and design remedial actions where necessary.

7.3 Geotechnical Constraints

- Possible service easements – liaison with utility providers advised.
- Potential foundations on site from former site use.
- Very high potential shallow mine workings with voids and bell pits / shafts (site wide drill and grout anticipated on 4.5m grid).
- Near surface coal likely to be encountered in deep excavations.
- Former well (probable shaft?).
- Retaining anticipated along northern boundary due to existing residential development levels
- Potential flood risk to site.
- Potential heave from trees/cohesive strata – piling may be problematic due to shallow workings.

8 SCOPE OF GROUND INVESTIGATION

8.1 Objectives of the Ground Investigation

The objectives of the intrusive ground investigation will be to:

- Clarify the 'Initial Contamination Conceptual Model'.
- Clarify the initial risk assessment.
- Benchmark the contamination status of the site.
- Provide data for the design of any remedial works that may be required.
- Provide a geotechnical appraisal for the site.

8.2 Proposed Ground Investigation Scope

On assessing the potential risks on site, we have compiled the following recommendations for initial investigation;

- Rotary coal mining investigation under coal authority licence comprising 15 No Open hole boreholes using water flush to a depth of 30-40m.
- Six (6 No.) window sample boreholes advanced to 3mbgl targeting former buildings and achieving site spread all installed with gas monitoring wells.
- Six (6 No.) ground gas monitoring visits over 3 months at varying barometric pressures.
- One (1 No.) day trial pitting targeting buildings and achieving site spread.
- Twenty (20 No.) soil samples taken for chemical assessment for soil cart-off - depending on ground conditions encountered this should include testing (topsoil, made ground and natural) to benchmark contamination levels across the site and allow for cart-off assessment. Proposed testing will include but not be limited to the following; heavy metals suite (comprising; As, Cd (low level), Cr Vi, Pb, Hg, Se, Ni, Cu, Zn), Organic Matter, Sulphate, pH, speciated polycyclic aromatic hydrocarbons and TPH CWG. Asbestos testing within topsoil and Made Ground (if present) with quantification for positive samples.
- Three (3 No.) water samples taken from Prescott Brook (upstream, midstream & downstream) for a standard suite of contaminants.
- Geotechnical analysis if clay strata is encountered for tree heave protection and concrete design classification (anticipated).

The scope of works should be agreed with the Local Authority prior to the intrusive ground investigation and as such may change.

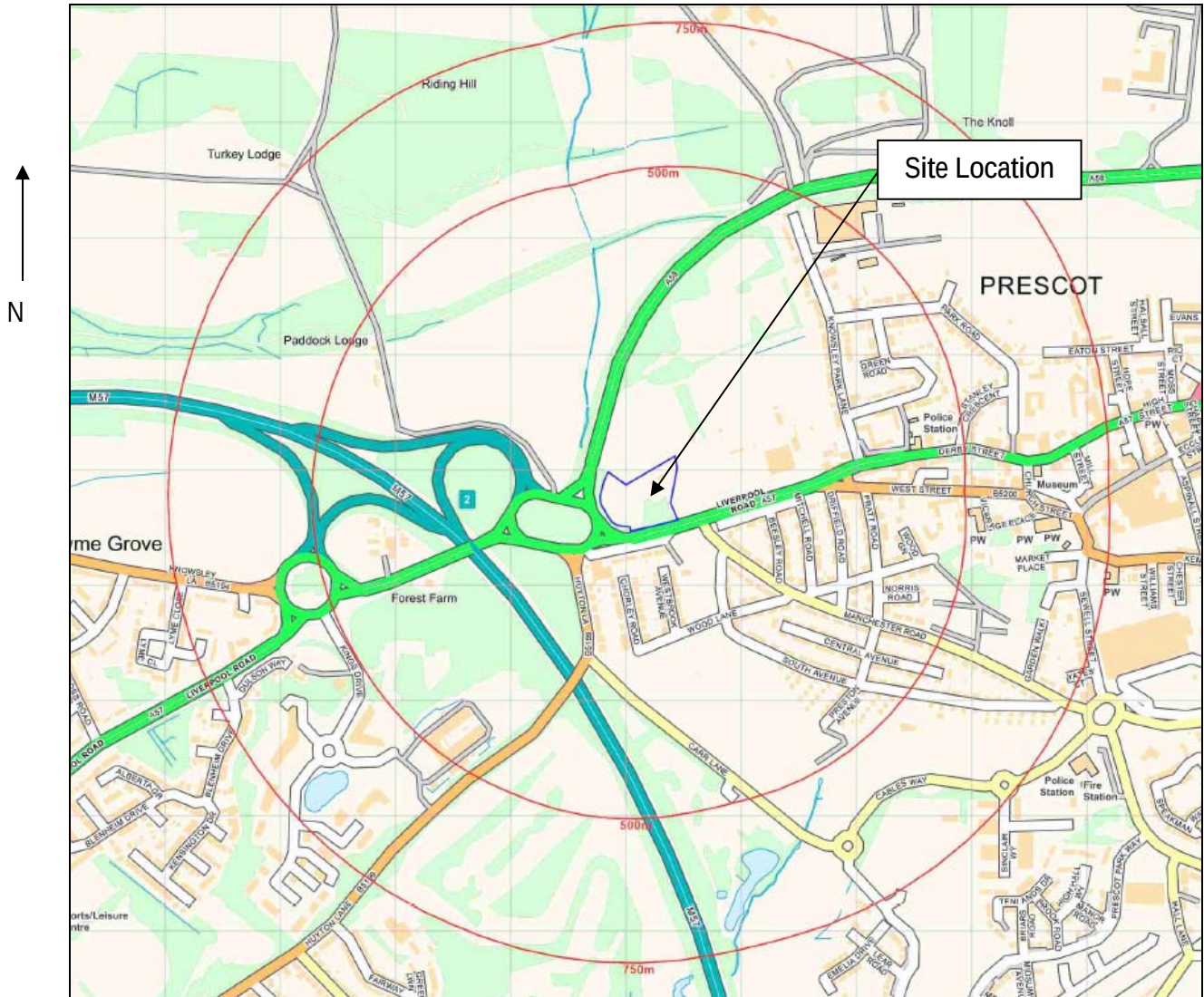
Notes on limitations of this report can be found in Appendix E.

9 REFERENCES

- 9.1 *Phase 2 Ground Investigation Report for Whitakers Garden Centre, by Wardell Armstrong on behalf of Beesley and Fildes Ltd, ref. LE14138/001/V0.3, dated May 2018.*
- 9.2 *BS 5930:2015 Code of Practice for Ground Investigation.*
- 9.3 Investigation of Potentially contaminated sites BS10175:2011 +A1:2013.
- 9.4 BS8576:2013 Guidance on investigations for ground gas.
- 9.5 R & D Publication CLR 8 (March 2002) Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Soil Guideline Values and Related Research. Environment Agency.
- 9.6 R & D Publication CLR 10 (March 2002) The Contaminated Land Exposure Assessment Model (CLEA): Technical basis and algorithms. Environment Agency.
- 9.7 Contaminated Land Risk Assessment; a Guide to Good Practice; CIRIA C552: 2001.
- 9.8 BRE 211 Radon: guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment) (2007 edition).
- 9.9 Assessment of risks to human health from land contamination: an overview of the development of guideline values and related research. EA, 2002.
- 9.10 Health and Safety in Construction, HSG150, HSE, 1996.
- 9.11 Baker W (1987), Investigation Strategy - lecture at City of Birmingham Development Department Symposium on Methane Generating Sites, 9 December 1987, Industrial Research Laboratories, Birmingham.
- 9.12 NHBC Standards, Chapter 4.2, 2017 Building Near Trees.
- 9.13 'Guidance on Evaluation of Development Proposals on Sites Where Methane and Carbon Dioxide are Present', Report Edition No.04 March 2007 NHBC – designed for use with low rise residential properties.
- 9.14 CIRIA C665 'Assessing risks posed by hazardous ground gases for buildings' 2007 - for high rise residential / flats.
- 9.15 BS8485:2015 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.
- 9.16 BRE 414 'Protective measures for housing on gas-contaminated land' Roger Johnson, Parkman Environment 2001.
- 9.17 BS 8500-2:2015+A1:2016 'Concrete British Standard to BS EN 206. Specification for constituent materials and concrete'.
- 9.18 CLR11 'Model Procedures for the Management of Land Contamination' DEFRA 2004.

APPENDIX A

(i) Site Location Plan



Site Location Plan

The site is located at Dye House, Liverpool Road, Prescot, L34 3LX. The coordinates on the British National Grid CRS are 345829, 392776. The proposed site is approximately 1.12 hectares in total.

(ii) Site Walkover Photos



Photo 1; Looking north from Liverpool Road towards Dye House.



Photo 2; Looking west from driveway towards wooded area.



Photo 3; Looking north to Dye House from grasses garden area.



Photo 4; Outbuilding and wall to the side of Dye House.



Photo 5; Metal clad outbuilding.



Photo 6; Looking north west towards adjacent site under development (right) and field (left).



Photo 7; Looking west from garden area towards field beyond gate.



Photo 8; Looking north down the driveway to Dye House.

BOREHOLE RECORD - Rotary

SJ498E 90 460-929

Client FINLAN PROPERTY DEVELOPMENTS LTD

Borehole 3R

Sheet 1 of 2

Project No 6102

22SEP003/DS
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Project PROPOSED GARDENSTORE DEVELOPMENT

Client FINLAN PROPERTY DEVELOPMENTS LTD

Borehole 3R

Sheet 2 of 2

Location WHITAKERS NURSERY, LIVERPOOL ROAD, PRESCOT **Engineer** A.WILDER AND ASSOCIATES

Project No 6102

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BOREHOLE RECORD - Rotary

SJ49SE 95 460-929

Project PROPOSED GARDENSTORE DEVELOPMENT

Client FINLAN PROPERTY DEVELOPMENTS LTD

Borehole BR

Sheet 1 of 1

Location WHITAKERS NURSERY, LIVERPOOL ROAD, PRESCOT Engineer A.WILDER AND ASSOCIATES

Project No 6102

Drilling		Core				Strata		Depth		Level			
Depths of Core Run	Depth Cased	Recovery % (Total Solid(S))	Length Max Min	R.Q.D. %	Fracture Index	Description	Detail	Depth	Legend	Level	00		
						Tarmac. Bricks, clay, etc. - FILL.		0.20		13.80			
						Brown clay.		2.00		12.00			
						Soft COAL.		2.70		11.30			
								5.00		9.00			
						Grey mudstone.		5.30		8.70			
						Dark grey mudstone.							
								7.75		6.25			
						Hard COAL.		8.20		5.80			
						Grey sandy MUDSTONE.							
								12.00		2.00			
Drilling						Progress				Groundwater			
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	am pm	Date	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	Remarks
12.00	150mm	AIR Open Hole Rotary	WK(GS)	Start 12.00 End				15/11 AM 15/11 15/11	5.00 7.75				
Remarks The strata descriptions are the drillers estimate based on sediment return in the circulating air. geotechnics													
Logged by: WK Symbols and abbreviations are explained on the accompanying key. All linear dimensions are in metres. Scale: 1:100													

BOREHOLE RECORD - Rotary SJ49SE 88 460-929

Project PROPOSED GARDENSTORE DEVELOPMENT

Client FINLAN PROPERTY DEVELOPMENTS LTD

Borehole 1R

Sheet 1 of 2

Location WHITAKERS NURSERY, LIVERPOOL ROAD, PRESCOT Engineer A.WILDER AND ASSOCIATES

Project No 6102

Drilling		Core				Strata		Groundwater					
Depths of Core Run	Depth Cased	Recovery %	Length Max Min	R.Q.D. %	Fracture Index	Description	Depth	Legend	Level				
						General	Detail						
						Clay, bricks, etc. - MADE GROUND.			14.00				
						Soft brown CLAY.			12.50				
						Soft MUDSTONE.			8.00				
						COAL			7.20				
						Stained COAL, MUDSTONE and WOOD. - POSSIBLE OLD WORKINGS.			6.70				
						Dark MUDSTONE.			4.90				
						Grey MUDSTONE.			3.50				
						Dark MUDSTONE.			1.70				
						Grey MUDSTONE.			1.30				
Drilling						Progress				Groundwater			
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	am pm	Date	Depth Struck	Depth Cased	Depth after 20 mins.	Depth Sealed	Remarks
30.00	117mm	AIR Open Hole Rotary	(GS) WK	Start 30.00 End	9.50		AM	04/09 04/09	6.00				
Remarks The strata descriptions are the drillers estimate based on sediment return in the circulating air. Pushed rods from 7.3-9.10m, very weak zone, loss of air.													
Logged by: WK(GS) Symbols and abbreviations are explained on the accompanying key. All linear dimensions are in metres. Scale: 1:100													

BOREHOLE RECORD - Rotary SJ49SE 88

Project PROPOSED GARDENSTORE DEVELOPMENT

Client FINLAN PROPERTY DEVELOPMENTS LTD

Borehole 1R

Sheet 2 of 2

Location WHITAKERS NURSERY, LIVERPOOL ROAD, PRESCOT Engineer A.WILDER AND ASSOCIATES

Project No 6102

Drilling		Core				Strata		Groundwater						
Depths of Core Run	Depth Cased	Recovery % (Total (L) Solid (S))	Length Max Min	R.Q.D. %	Fracture Index	Description	Depth	Legend	Level 00					
						General	Detail							
						Sandy MUDSTONE.			18.00	-4.00				
						SANDSTONE.			22.00	-8.00				
						Grey MUDSTONE. MUDSTONE with sandstone bands.			24.00 23.30	-10.00 -9.300				
									30.00	-16.00				
Drilling						Progress				Groundwater				
Depth	Dia	Technique		Crew	Depth of Hole	Depth Cased	Depth to Water	am pm	Date	Depth Struck	Depth Cased	Depth after 20 mins	Depth Sealed	Remarks
30.00	117mm	AIR Open Hole Rotary		(GS) WK	Start 30.00	End 9.50			04/09 AM 04/09	6.00				
Remarks The strata descriptions are the drillers estimate based on sediment return in the circulating air. Pushed rods from 7.3-9.10m, very weak zone, loss of air.														

geotechnics

Logged by: WK(GS) Symbols and abbreviations are explained on the accompanying key. All linear dimensions are in metres. Scale: 1:100

APPENDIX B

(i) Historical Mapping

Site Details:

DYE HOUSE, LIVERPOOL
ROAD, PRESCOT, L34 3LX

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Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: 1056 Scale Town Plan

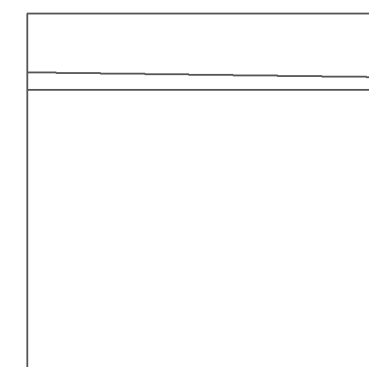
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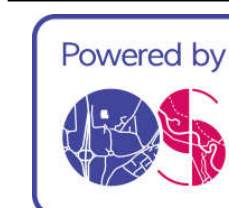
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Revised N/A
Edition N/A
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Revised N/A
Edition N/A
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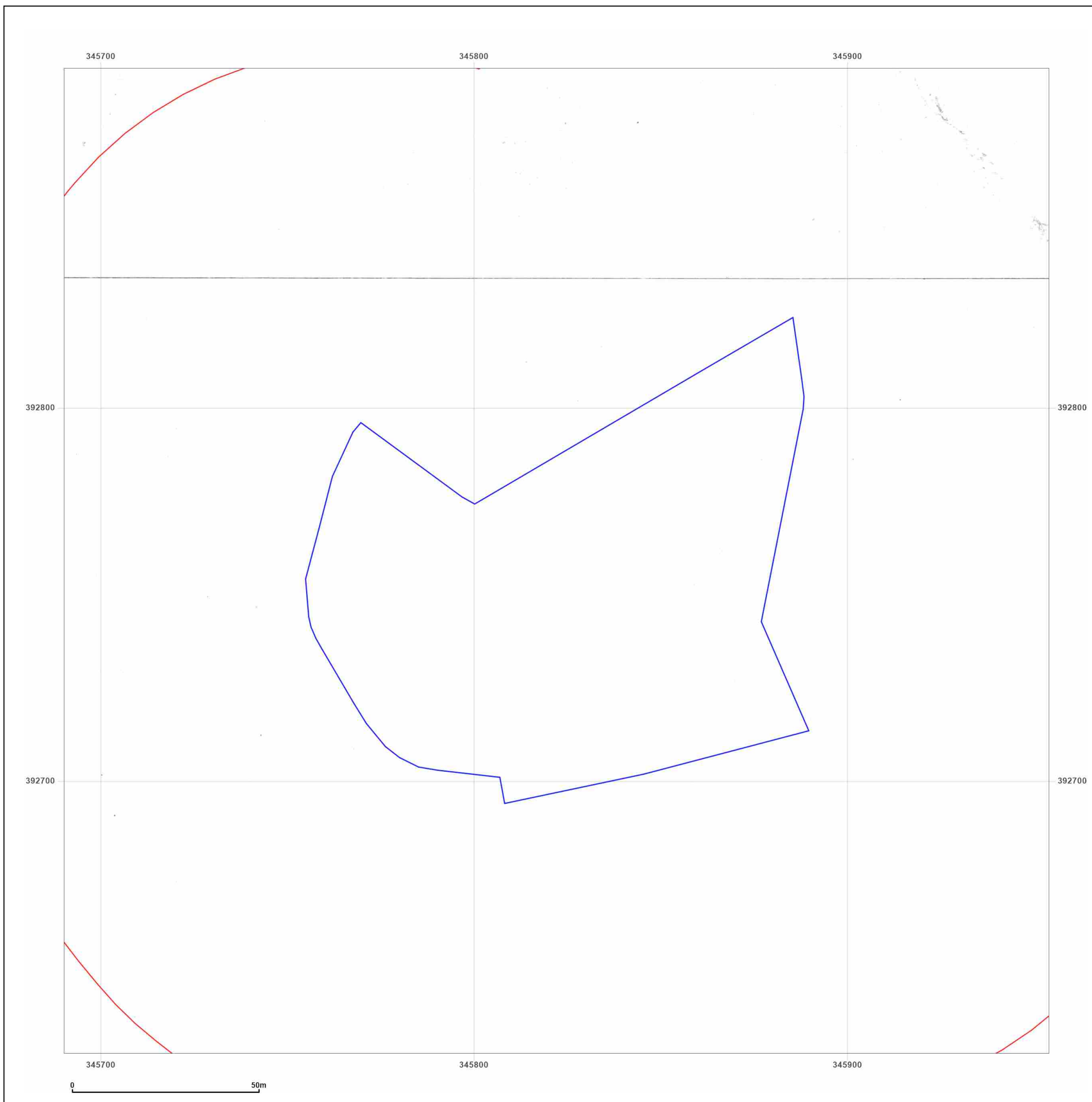


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Site Details:

DYE HOUSE, LIVERPOOL
ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1893

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
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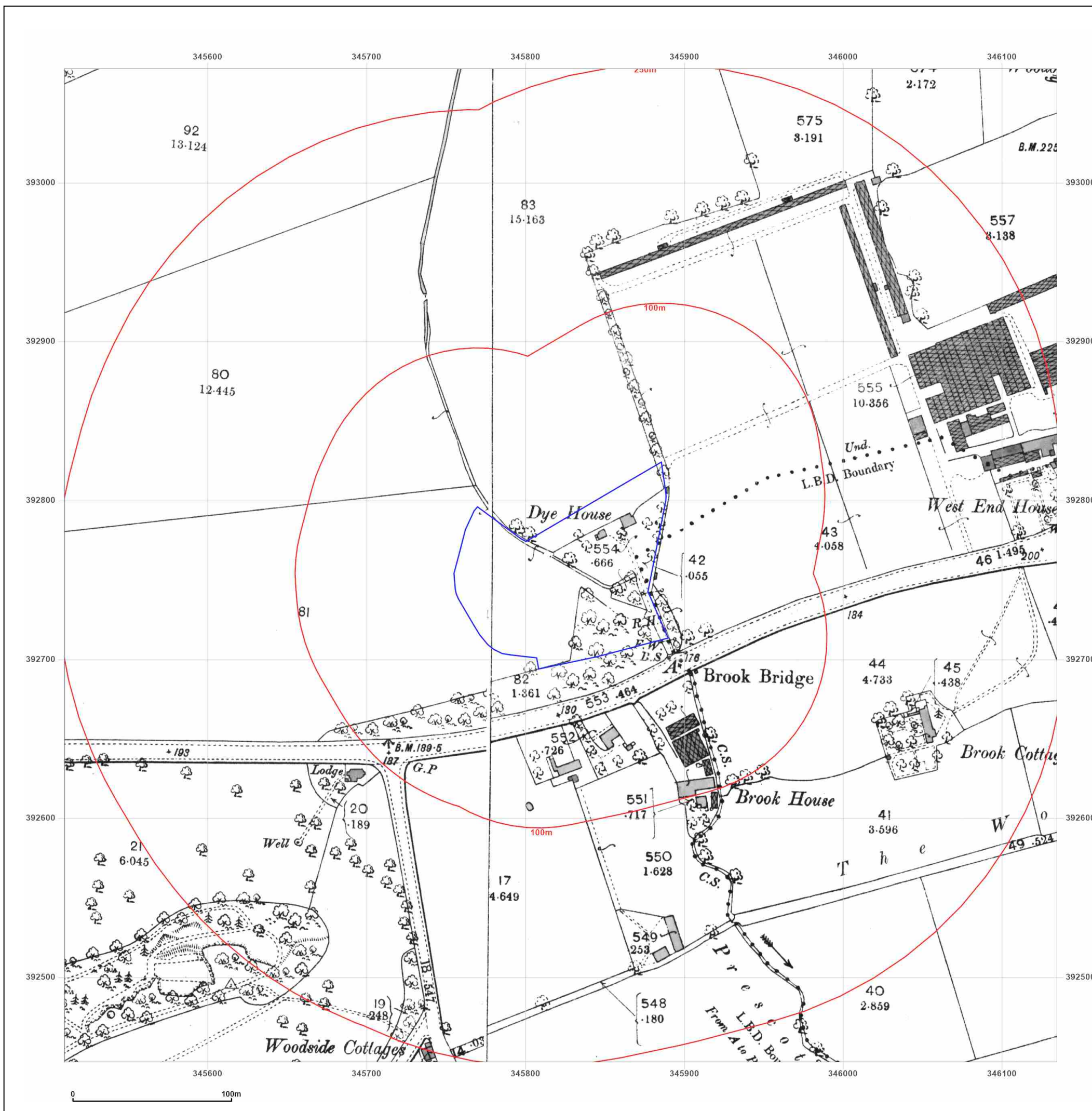


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Site Details:

DYE HOUSE, LIVERPOOL
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Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1908

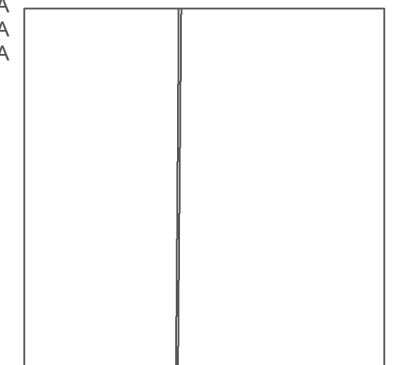
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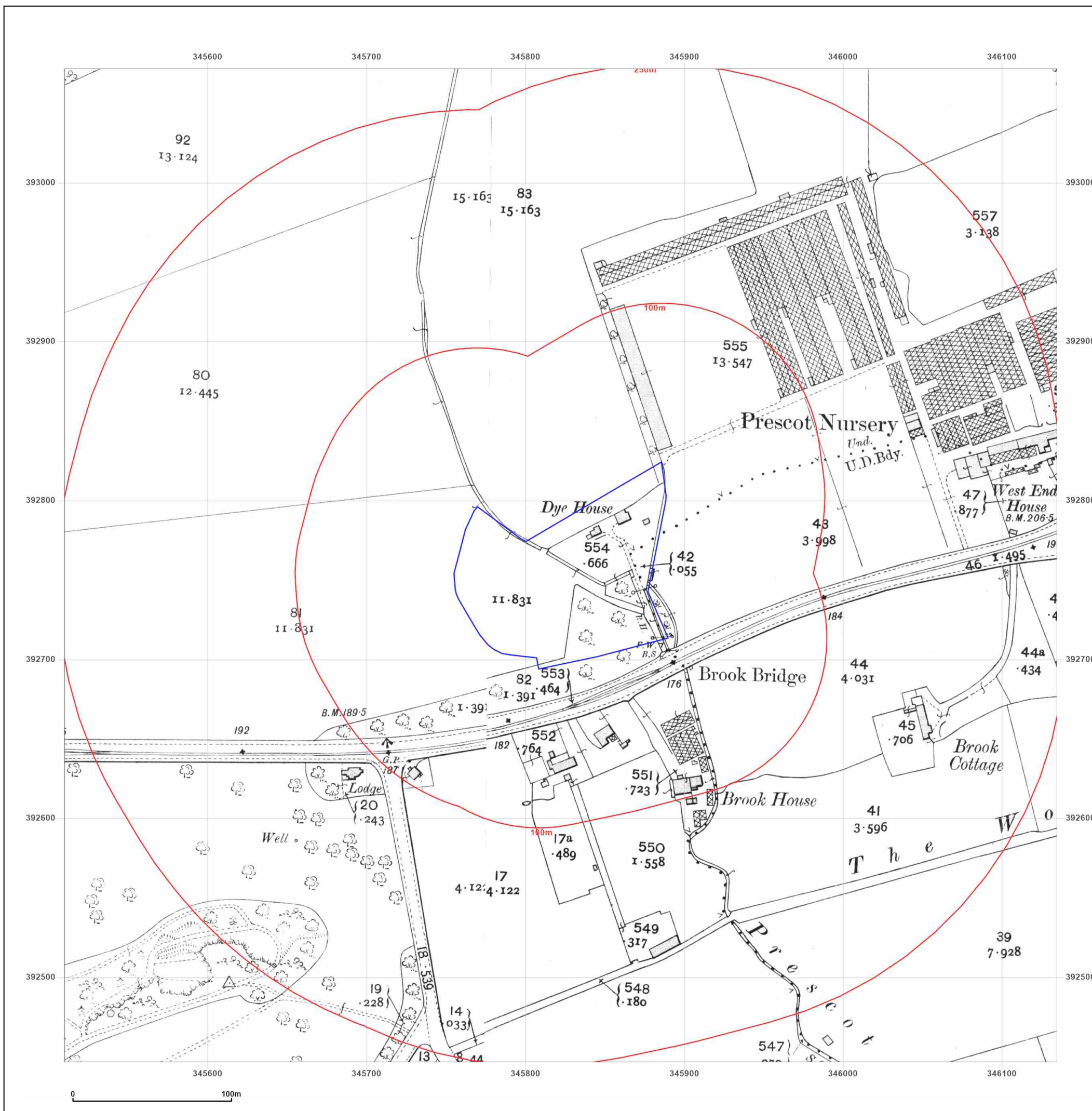


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Site Details:

DYE HOUSE, LIVERPOOL
ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1927

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1927
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1927
Revised 1927
Edition N/A
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Site Details:

DYE HOUSE, LIVERPOOL ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1937

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1937
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Edition N/A
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Revised 1937
Edition N/A
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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 1954-1955

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1955
Revised 1955
Edition N/A
Copyright N/A
Levelled 1926

Surveyed 1954
Revised 1954
Edition N/A
Copyright N/A
Levelled 1947

Surveyed 1954
Revised 1954
Edition N/A
Copyright N/A
Levelled 1946



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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 1955

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed N/A
Revised N/A
Edition N/A
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Site Details:

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Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 1955-1956

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1955
 Revised 1955
 Edition 1956
 Copyright N/A
 Levelled 1926

Surveyed 1954
 Revised 1954
 Edition 1955
 Copyright N/A
 Levelled 1947

Surveyed 1954
 Revised 1954
 Edition 1955
 Copyright N/A
 Levelled 1946



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Site Details:

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Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 1965-1966

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1954
 Revised 1965
 Edition N/A
 Copyright 1965
 Levelled 1957

Surveyed 1954
 Revised 1965
 Edition N/A
 Copyright 1966
 Levelled 1957



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Site Details:

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Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 1974-1976

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1955
Revised 1974
Edition N/A
Copyright 1974
Levelled 1957

Surveyed 1954
Revised 1975
Edition N/A
Copyright 1976
Levelled 1957

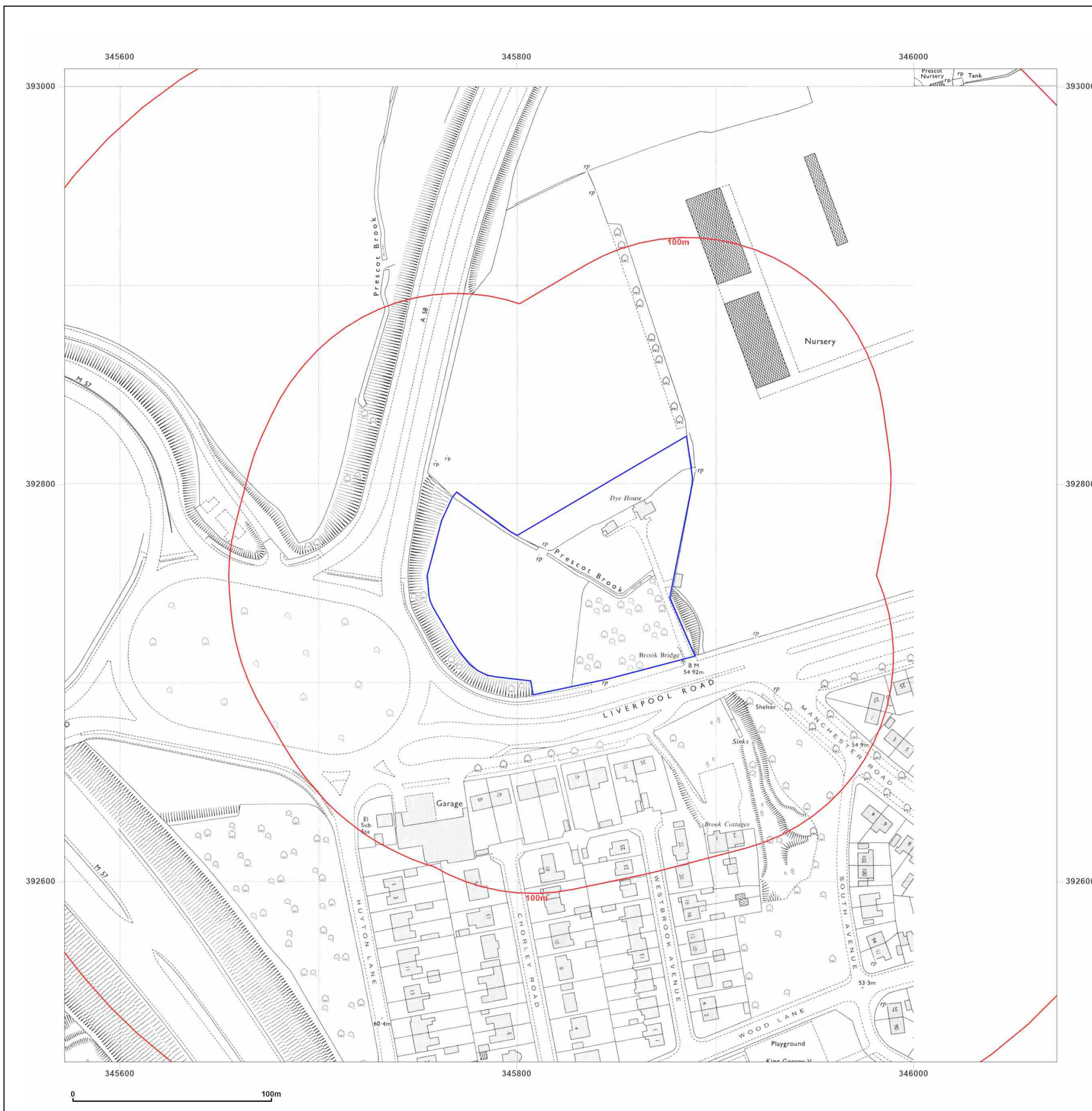


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Site Details:

DYE HOUSE, LIVERPOOL ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1993
 Levelled N/A

Surveyed 1993
 Revised 1993
 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed 1993
 Revised 1993
 Edition N/A
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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



2003



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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1850

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1847
Revised N/A
Edition 1850
Copyright N/A
Levelled N/A

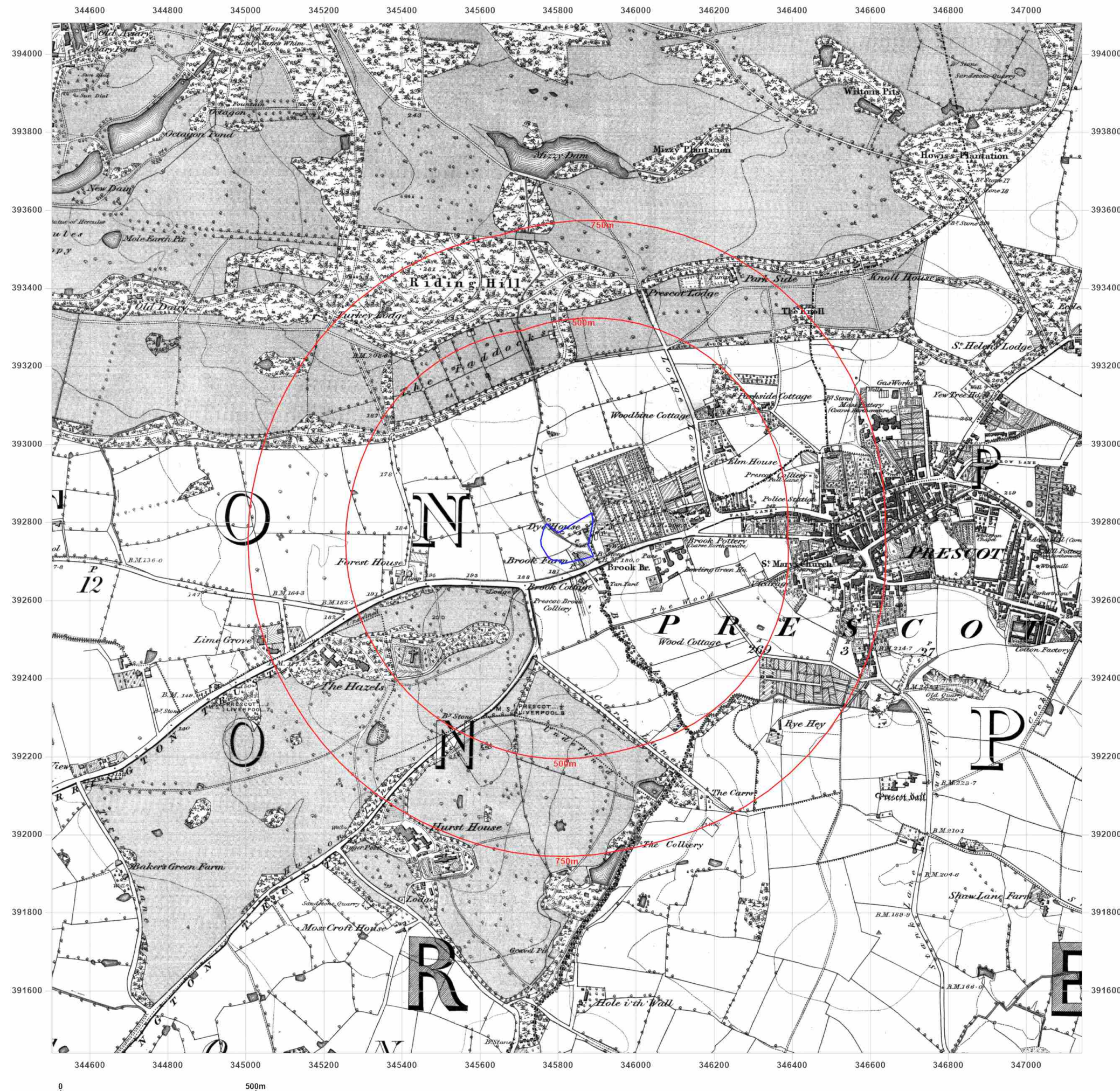


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Site Details:

DYE HOUSE, LIVERPOOL
ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1891

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

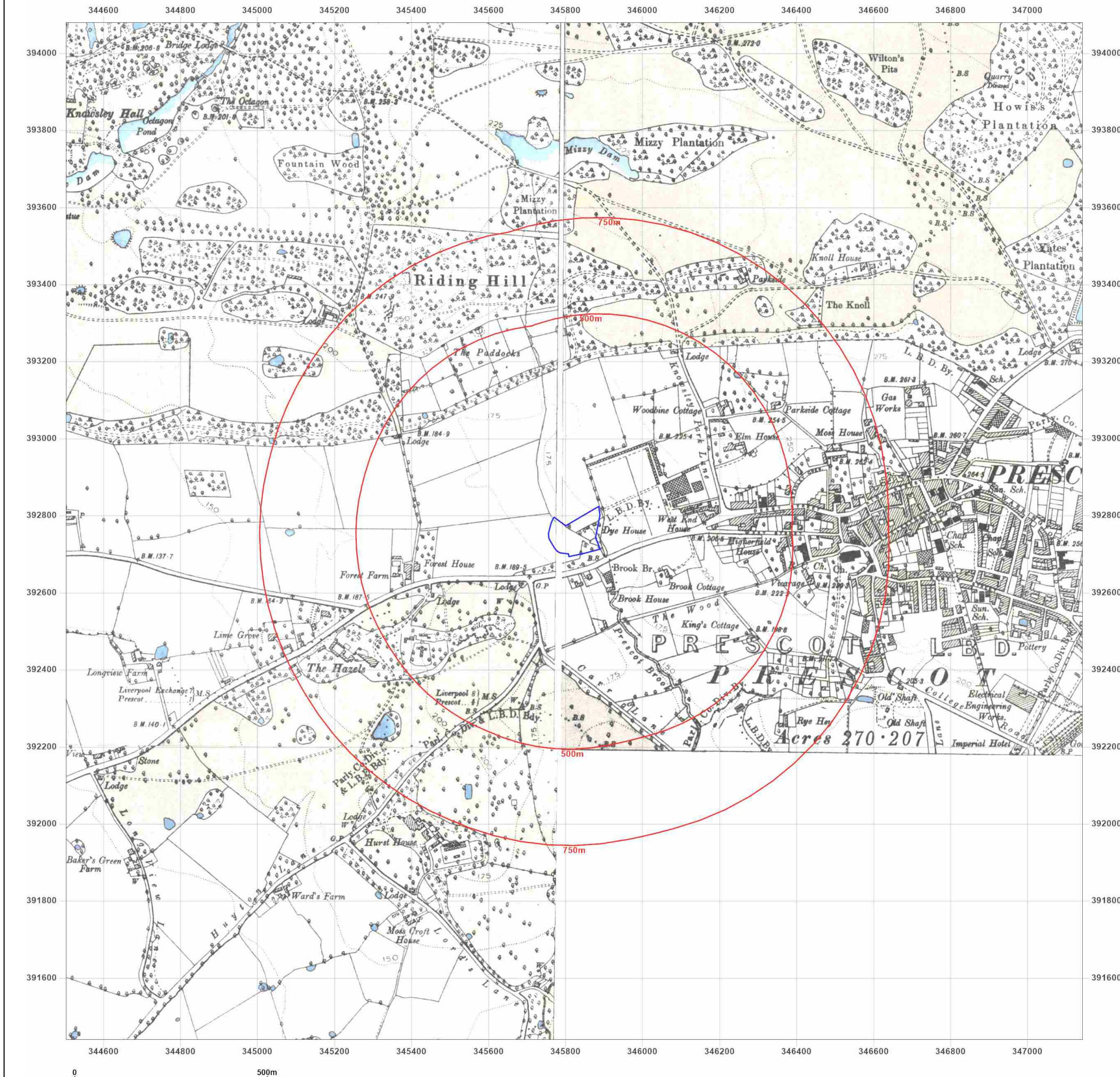


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Production date: 11 August 2022

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Site Details:

DYE HOUSE, LIVERPOOL
ROAD, PRESCOT, L34 3LX

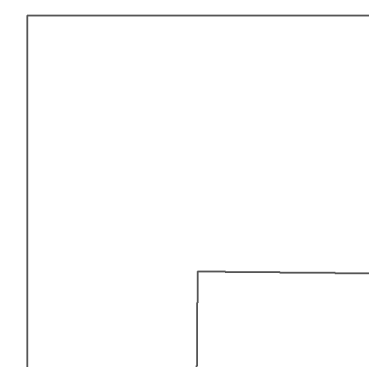
Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1891

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

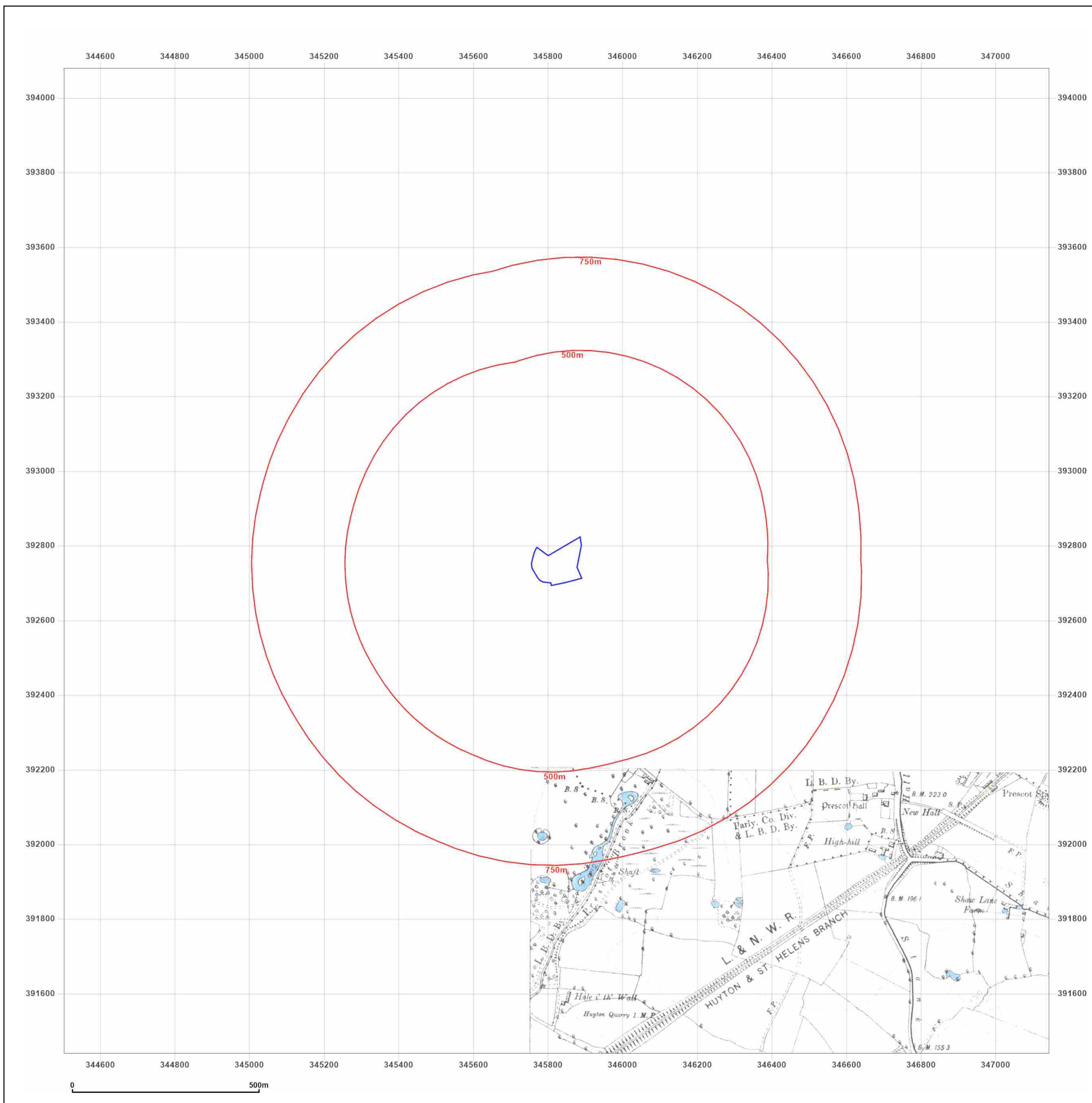


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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1906

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1891
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

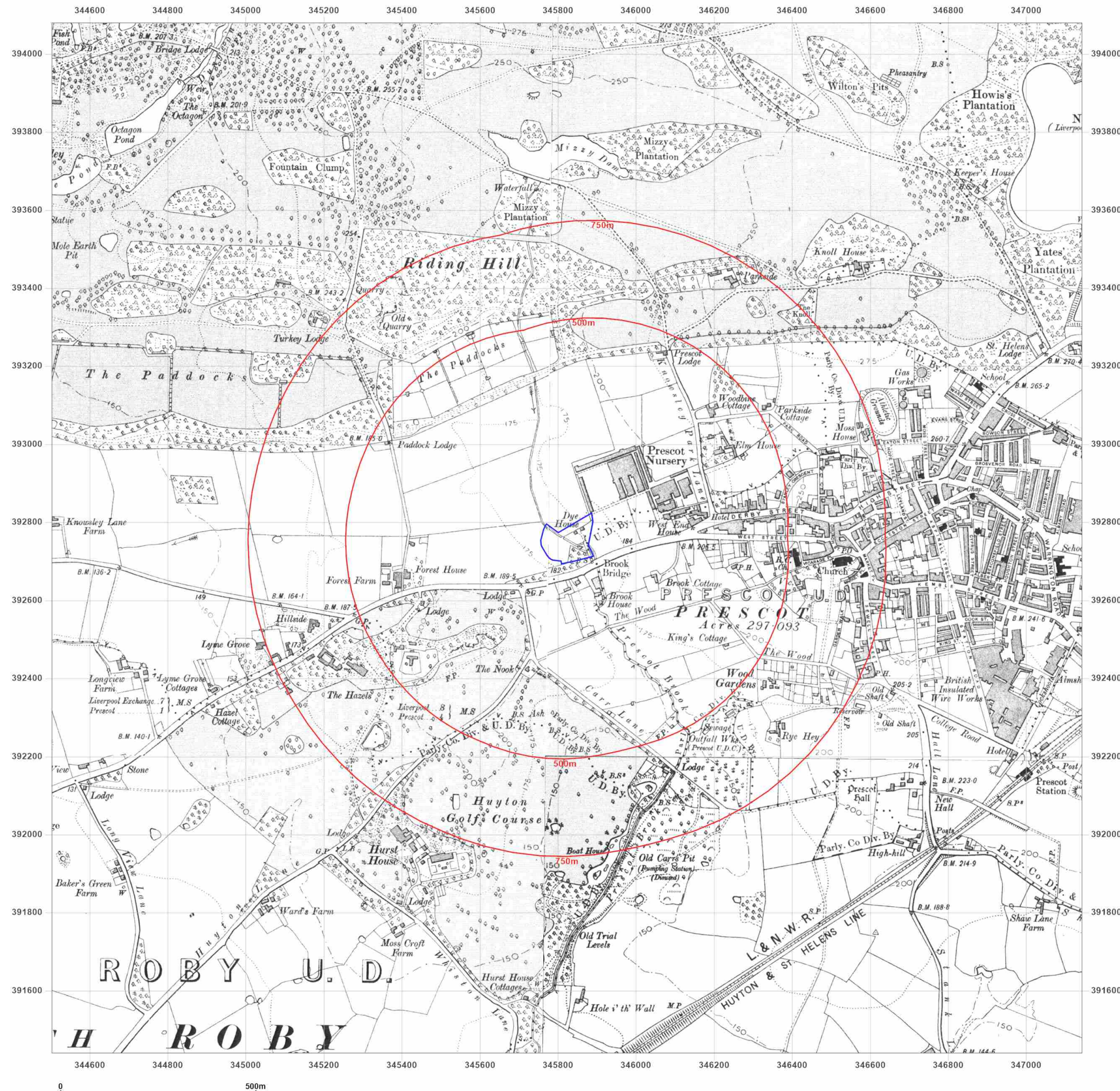


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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1925

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1849
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1847
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1846
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

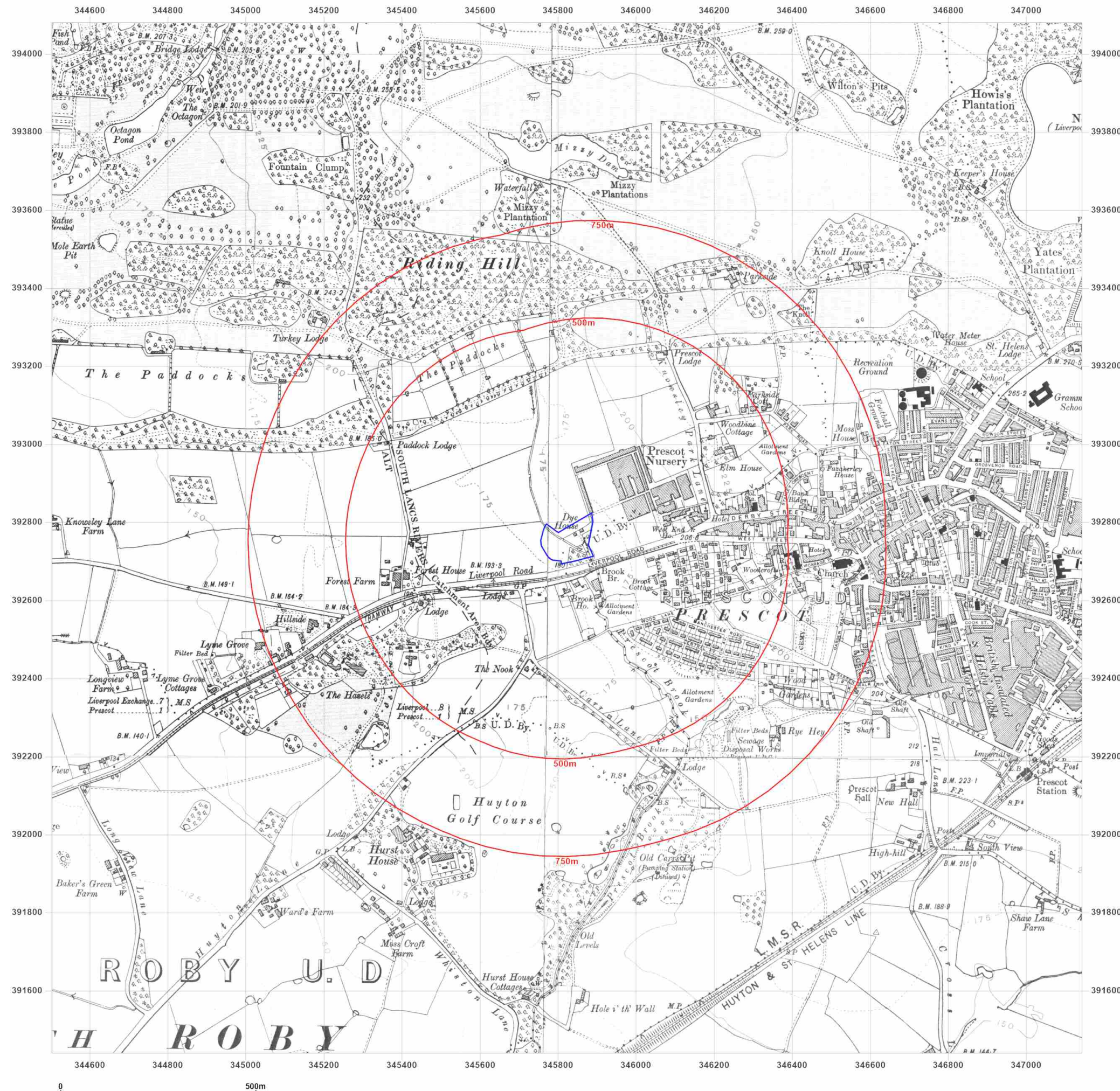


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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1925

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1849
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1847
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

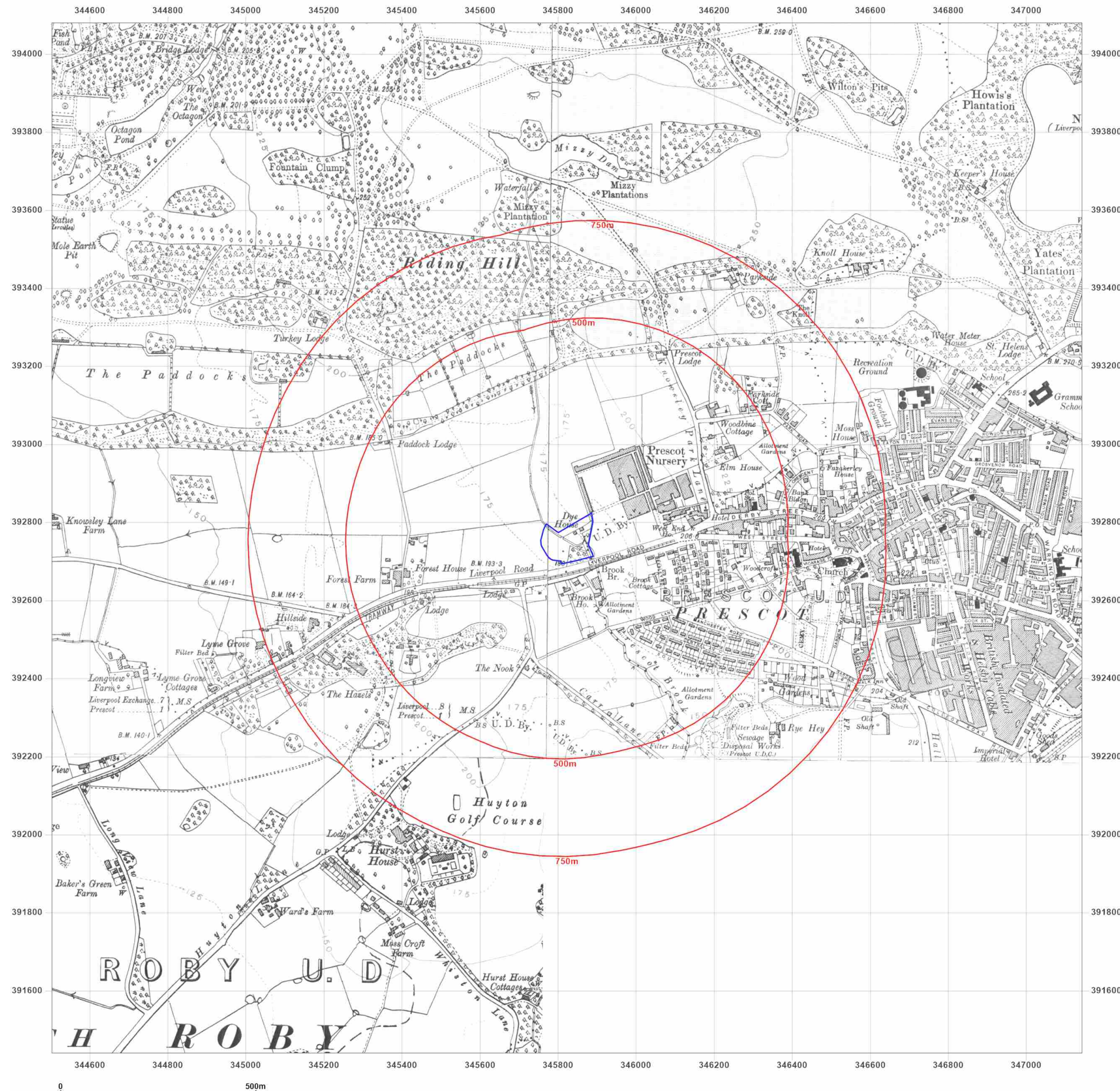


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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1849
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1847
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1846
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

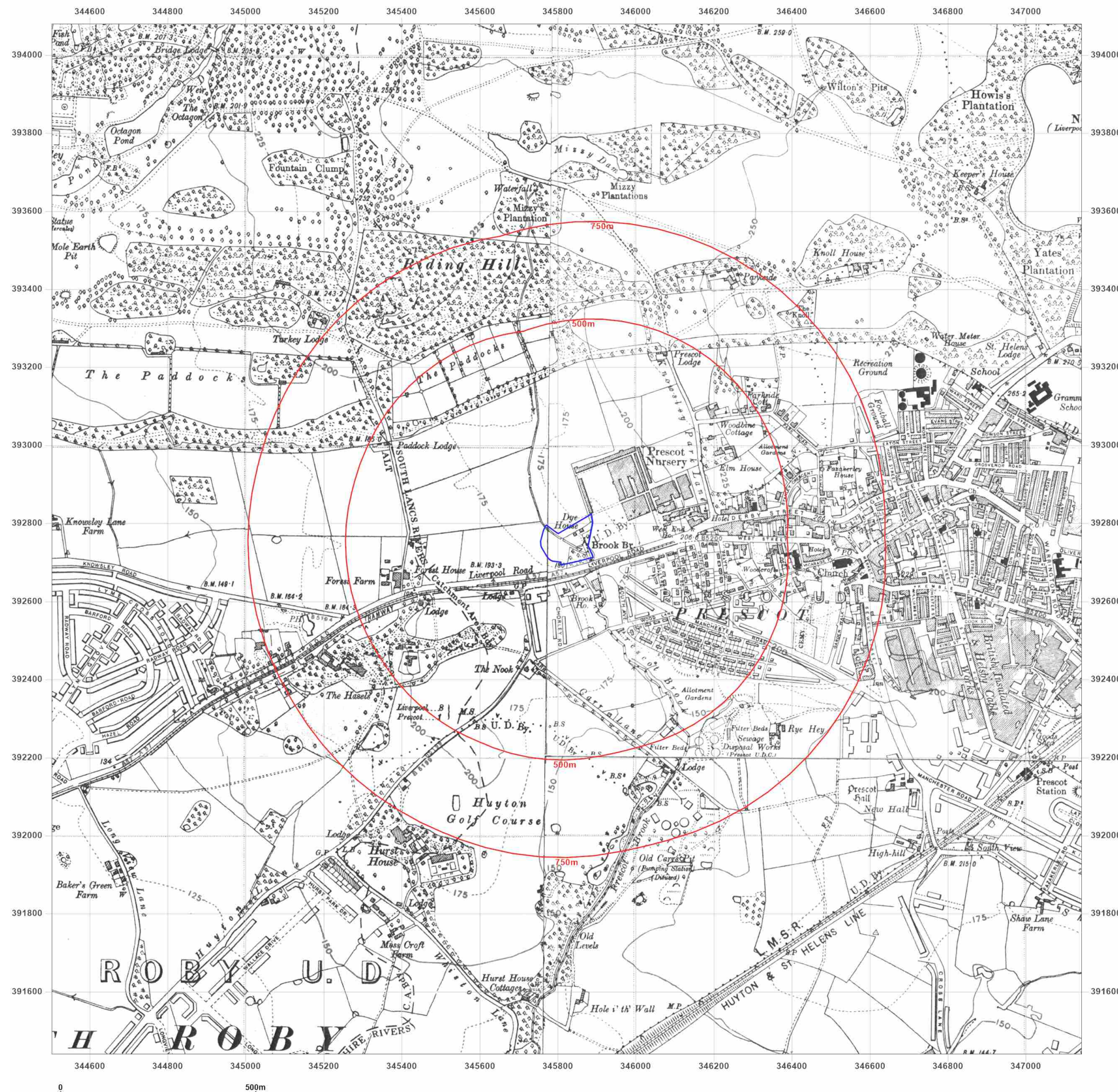


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Site Details:

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Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: County Series

Map date: 1947-1950

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1847
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1846
Revised 1947
Edition N/A
Copyright N/A
Levelled N/A

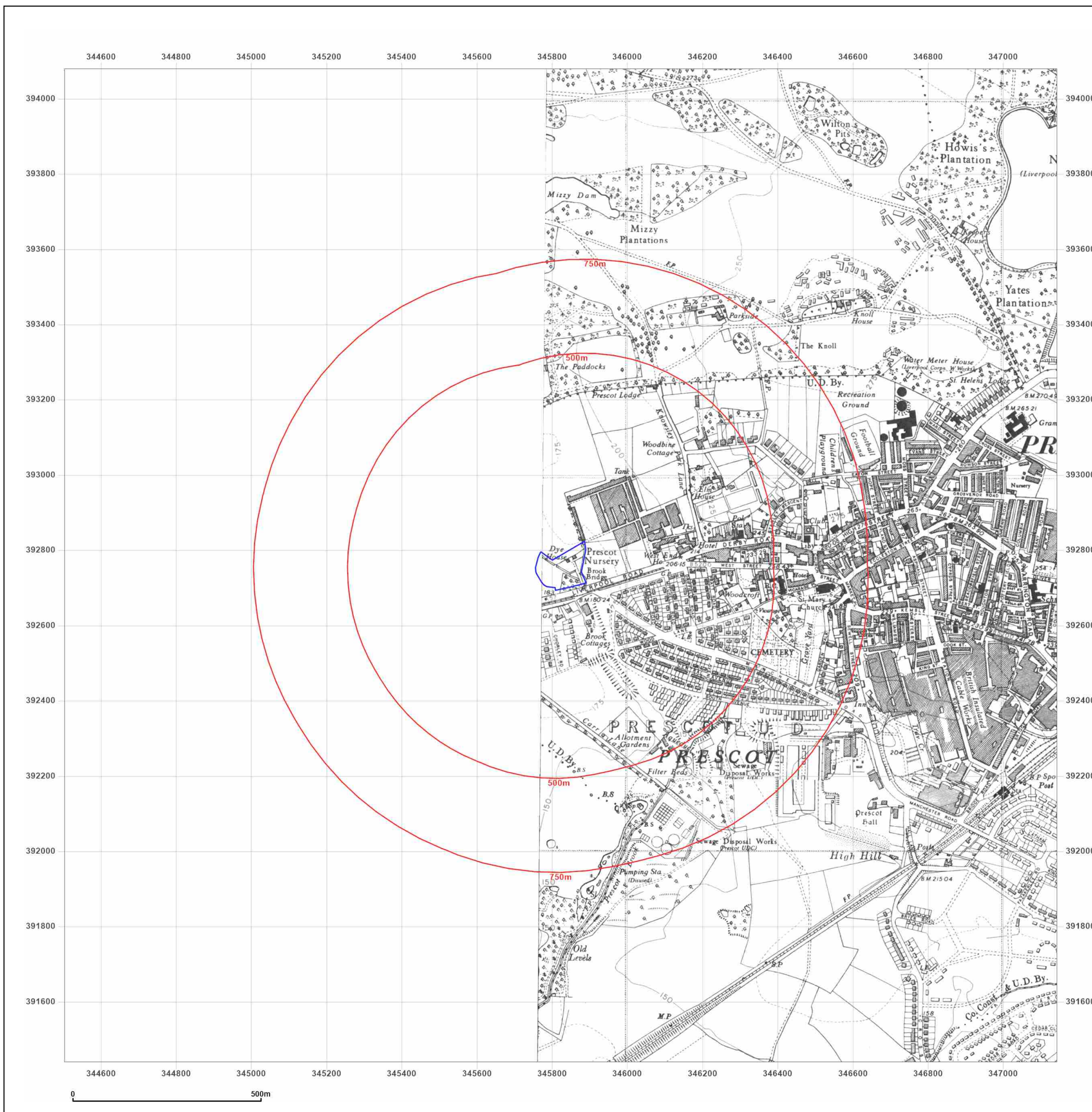


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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: Provisional

Map date: 1965-1966

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1966
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A

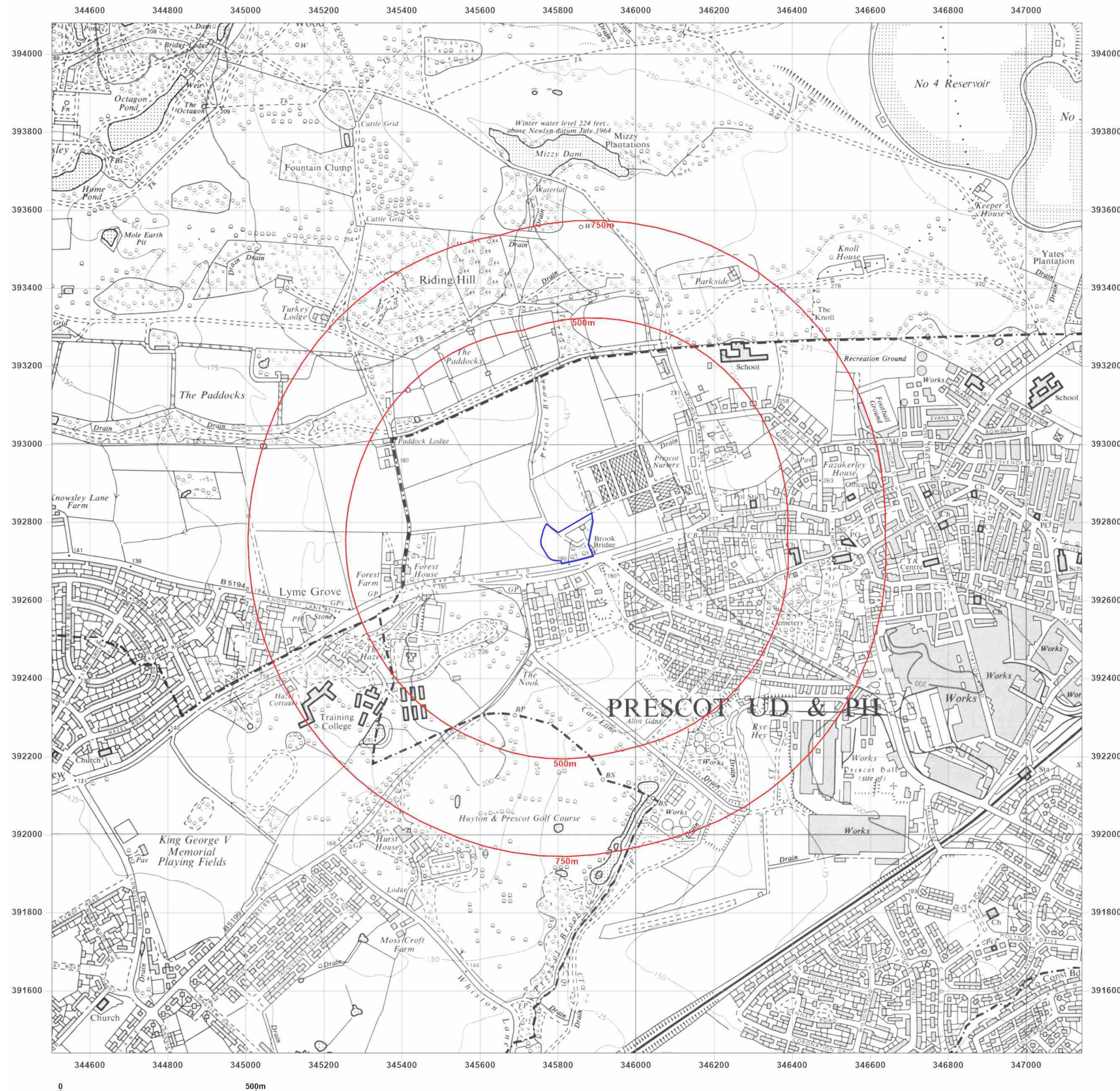


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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 1978

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1975
Revised 1977
Edition N/A
Copyright 1978
Levelled 1955

Surveyed 1975
Revised 1978
Edition N/A
Copyright 1978
Levelled 1964

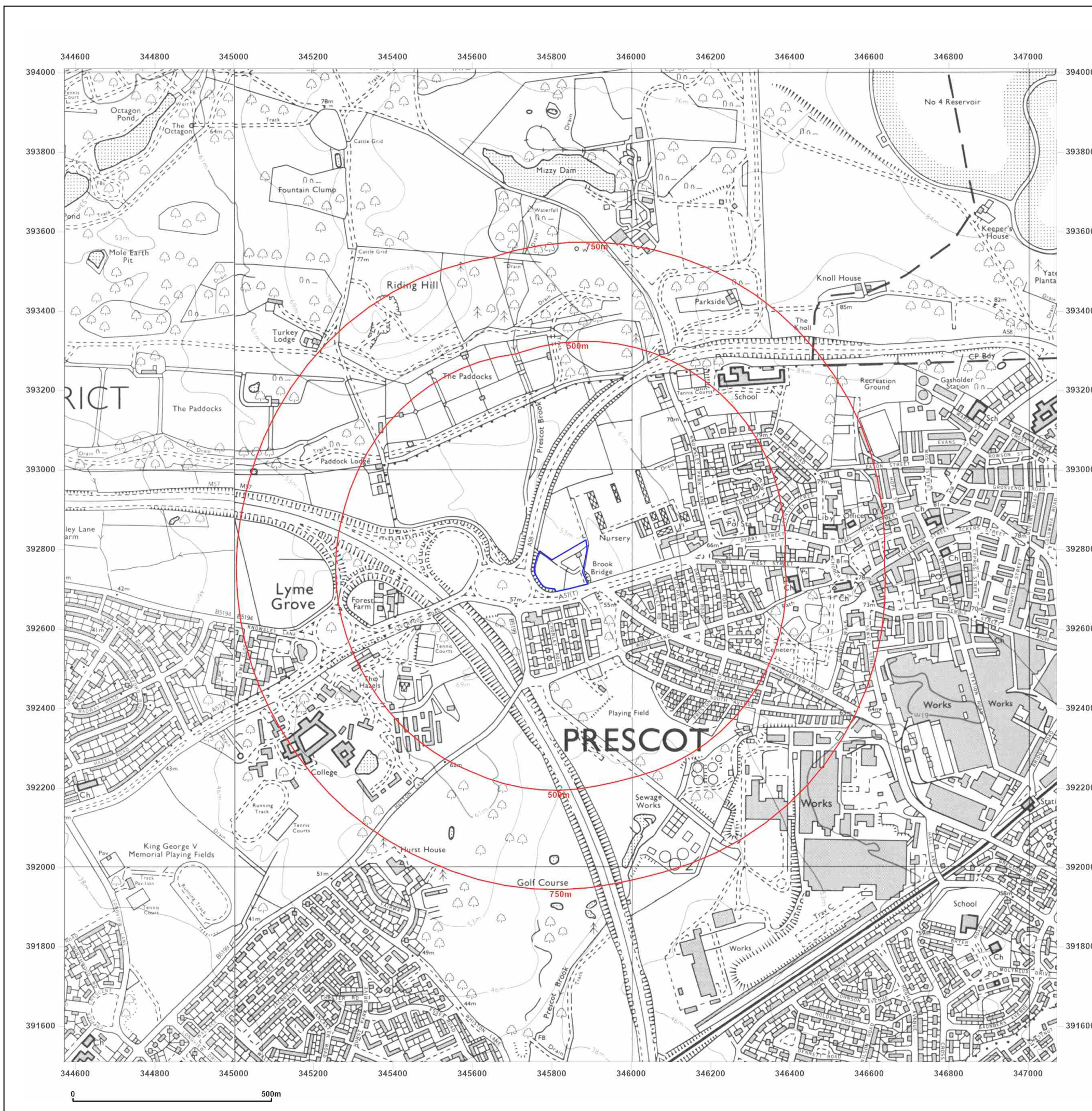


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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 1989-1990

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1987
Revised 1989
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1989
Revised 1990
Edition N/A
Copyright N/A
Levelled N/A

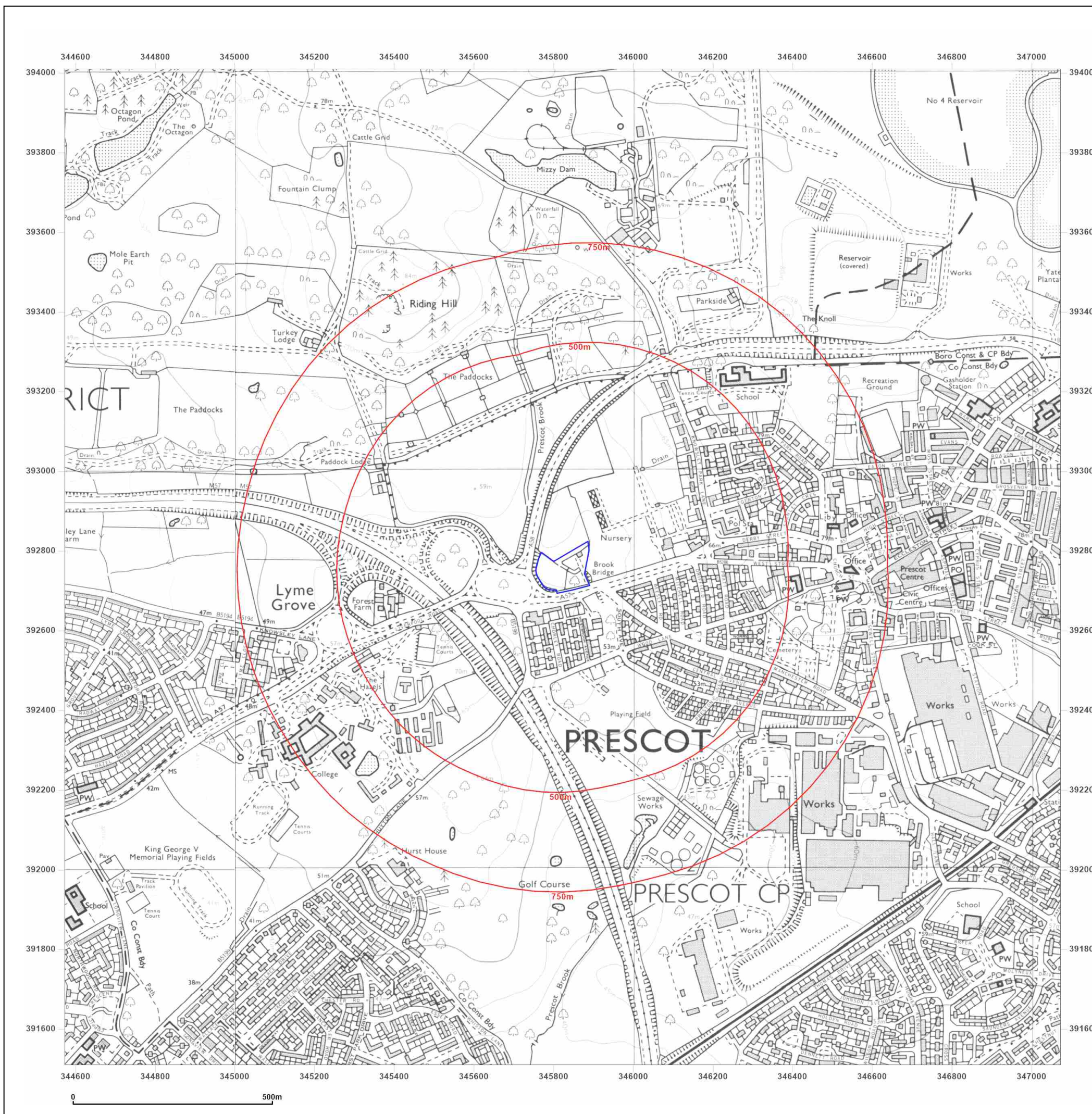


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Site Details:

DYE HOUSE, LIVERPOOL
ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



2001

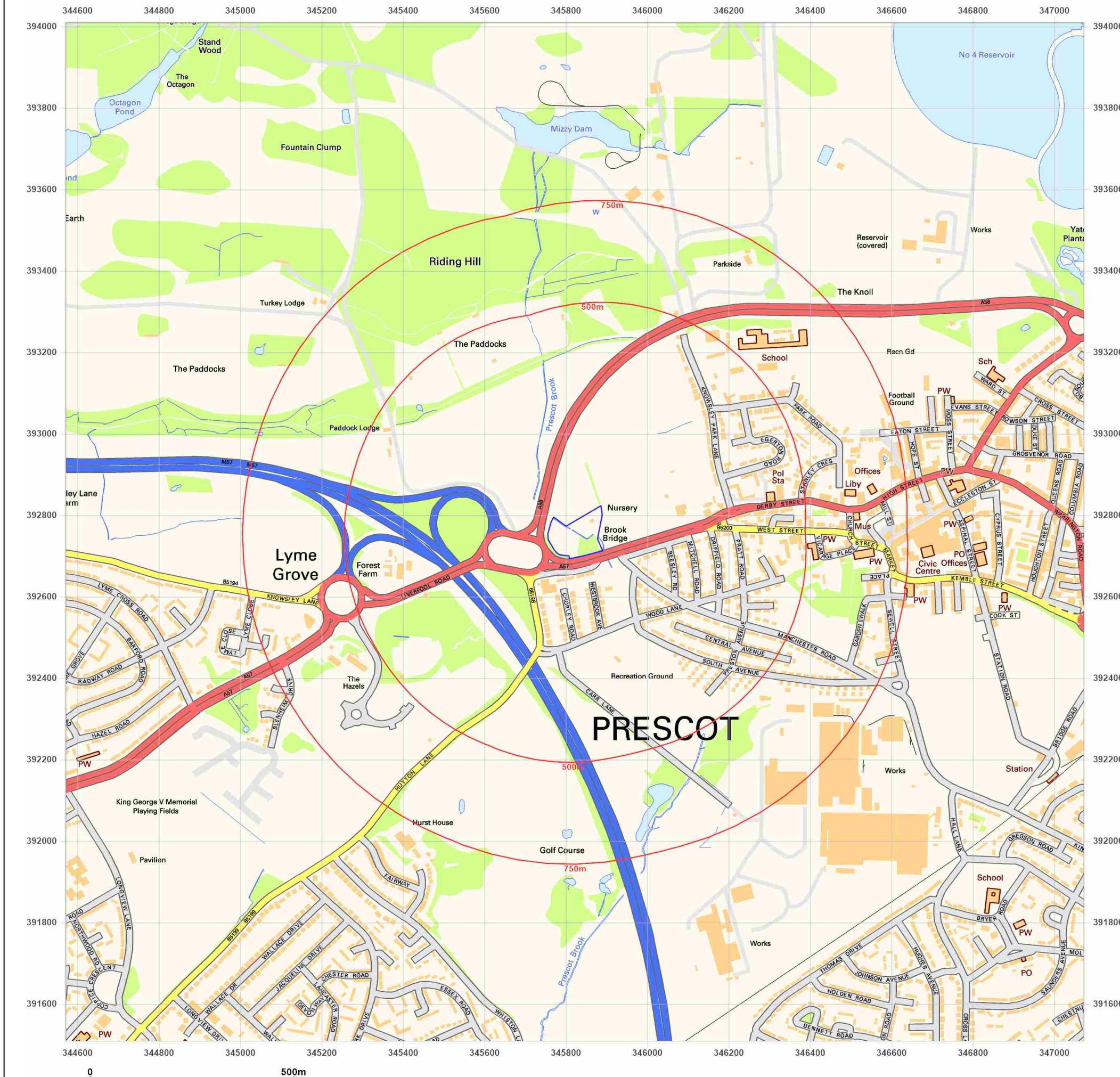


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Site Details:

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ROAD, PRESCOT, L34 3LX

Client Ref: 22SEP003_BG4717
Report Ref: GS-8974469
Grid Ref: 345822, 392759

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010

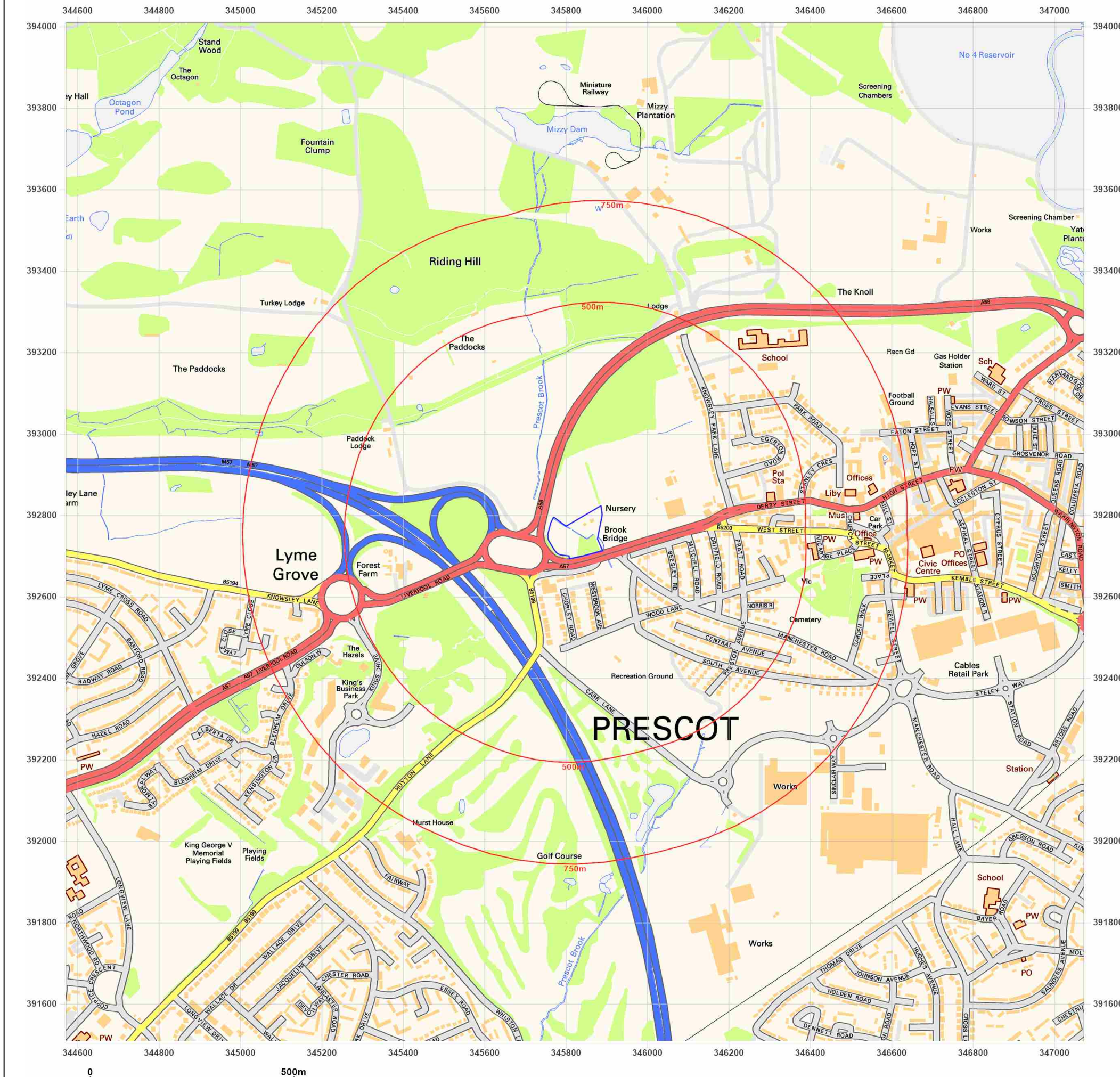


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APPENDIX C

- (i) Groundsure Report
- (ii) Consultants Coal Mining Report

DYE HOUSE, LIVERPOOL ROAD, PRESCOT, L34 3LX**Order Details**

Date: 11/08/2022
Your ref: 22SEP003_BG4717
Our Ref: GS-8974471

Site Details

Location: 345829 392776
Area: 1.12 ha
Authority: [Knowsley Metropolitan Borough Council](#)



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Summary of findings**p. 2 Aerial image****p. 8****OS MasterMap site plan****p.12 groundsure.com/insightuserguide**

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	<u>Historical industrial land uses</u>	10	7	14	19	-
15	1.2	<u>Historical tanks</u>	0	0	3	6	-
16	1.3	<u>Historical energy features</u>	0	0	2	5	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	<u>Historical garages</u>	0	0	3	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	2.1	<u>Historical industrial land uses</u>	11	9	18	27	-
21	2.2	<u>Historical tanks</u>	0	0	6	13	-
22	2.3	<u>Historical energy features</u>	0	0	4	11	-
23	2.4	Historical petrol stations	0	0	0	0	-
23	2.5	<u>Historical garages</u>	0	0	5	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
25	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
25	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
25	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
25	3.7	<u>Waste exemptions</u>	1	0	8	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
27	4.1	<u>Recent industrial land uses</u>	0	0	4	-	-
28	4.2	<u>Current or recent petrol stations</u>	0	0	1	0	-
28	4.3	Electricity cables	0	0	0	0	-
28	4.4	Gas pipelines	0	0	0	0	-
28	4.5	Sites determined as Contaminated Land	0	0	0	0	-



29	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.7	Regulated explosive sites	0	0	0	0	-
29	4.8	Hazardous substance storage/usage	0	0	0	0	-
29	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
30	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
30	4.12	Radioactive Substance Authorisations	0	0	0	0	-
30	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	0	2	-
31	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.15	Pollutant release to public sewer	0	0	0	0	-
31	4.16	List 1 Dangerous Substances	0	0	0	0	-
31	4.17	List 2 Dangerous Substances	0	0	0	0	-
31	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	2	0	-
32	4.19	Pollution inventory substances	0	0	0	0	-
32	4.20	Pollution inventory waste transfers	0	0	0	0	-
32	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
33	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
34	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
35	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
36	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
36	5.5	Groundwater vulnerability- local information	None (within 0m)				
37	5.6	Groundwater abstractions	0	0	0	0	0
38	5.7	<u>Surface water abstractions</u>	0	2	0	0	0
38	5.8	Potable abstractions	0	0	0	0	0
39	5.9	Source Protection Zones	0	0	0	0	-
39	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
40	6.1	<u>Water Network (OS MasterMap)</u>	5	2	6	-	-



42	6.2	<u>Surface water features</u>	0	0	5	-	-
42	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
42	6.4	<u>WFD Surface water bodies</u>	1	0	0	-	-
43	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
44	7.1	<u>Risk of flooding from rivers and the sea</u>	High (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
45	7.5	Flood Storage Areas	0	0	0	-	-
46	7.6	<u>Flood Zone 2</u>	Identified (within 50m)				
47	7.7	<u>Flood Zone 3</u>	Identified (within 50m)				
Page	Section	Surface water flooding					
48	8.1	<u>Surface water flooding</u>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
50	9.1	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
51	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
53	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
53	10.7	Designated Ancient Woodland	0	0	0	0	0
53	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
54	10.10	Marine Conservation Zones	0	0	0	0	0
54	10.11	<u>Green Belt</u>	0	1	0	0	1
54	10.12	Proposed Ramsar sites	0	0	0	0	0



54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
55	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
55	10.15	Nitrate Sensitive Areas	0	0	0	0	0
55	10.16	<u>Nitrate Vulnerable Zones</u>	1	0	0	1	3
56	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
57	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
58	11.1	World Heritage Sites	0	0	0	-	-
59	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
59	11.3	National Parks	0	0	0	-	-
59	11.4	<u>Listed Buildings</u>	0	0	1	-	-
60	11.5	<u>Conservation Areas</u>	0	0	1	-	-
60	11.6	Scheduled Ancient Monuments	0	0	0	-	-
60	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
61	12.1	<u>Agricultural Land Classification</u>	Grade 3b (within 250m)				
62	12.2	Open Access Land	0	0	0	-	-
62	12.3	<u>Tree Felling Licences</u>	0	0	7	-	-
63	12.4	<u>Environmental Stewardship Schemes</u>	0	0	1	-	-
63	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
64	13.1	<u>Priority Habitat Inventory</u>	1	3	4	-	-
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
66	14.1	<u>10k Availability</u>	Identified (within 500m)				
67	14.2	Artificial and made ground (10k)	0	0	0	0	-
68	14.3	Superficial geology (10k)	0	0	0	0	-

68	14.4	Landslip (10k)	0	0	0	0	-
69	14.5	Bedrock geology (10k)	0	0	0	0	-
69	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
70	15.1	<u>50k Availability</u>	Identified (within 500m)				
71	15.2	Artificial and made ground (50k)	0	0	0	0	-
71	15.3	Artificial ground permeability (50k)	0	0	-	-	-
72	15.4	<u>Superficial geology (50k)</u>	1	0	0	0	-
73	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
73	15.6	Landslip (50k)	0	0	0	0	-
73	15.7	Landslip permeability (50k)	None (within 50m)				
74	15.8	<u>Bedrock geology (50k)</u>	2	1	7	14	-
76	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
76	15.10	<u>Bedrock faults and other linear features (50k)</u>	1	2	5	9	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
78	16.1	<u>BGS Boreholes</u>	0	0	31	-	-
Page	Section	Natural ground subsidence					
80	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
81	17.2	<u>Running sands</u>	Very low (within 50m)				
82	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
83	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
84	17.5	<u>Landslides</u>	Very low (within 50m)				
85	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
86	18.1	Natural cavities	0	0	0	0	-
87	18.2	BritPits	0	0	0	0	-
87	18.3	<u>Surface ground workings</u>	0	2	13	-	-
88	18.4	<u>Underground workings</u>	0	0	0	0	14
88	18.5	Historical Mineral Planning Areas	0	0	0	0	-



89	18.6	Non-coal mining	0	0	0	0	0
89	18.7	Mining cavities	0	0	0	0	0
89	18.8	JPB mining areas	None (within 0m)				
89	18.9	<u>Coal mining</u>	Identified (within 0m)				
90	18.10	Brine areas	None (within 0m)				
90	18.11	Gypsum areas	None (within 0m)				
90	18.12	Tin mining	None (within 0m)				
90	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
91	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
92	20.1	<u>BGS Estimated Background Soil Chemistry</u>	2	1	-	-	-
92	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
92	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
93	21.1	Underground railways (London)	0	0	0	-	-
93	21.2	Underground railways (Non-London)	0	0	0	-	-
94	21.3	Railway tunnels	0	0	0	-	-
94	21.4	<u>Historical railway and tunnel features</u>	0	5	0	-	-
94	21.5	Royal Mail tunnels	0	0	0	-	-
95	21.6	Historical railways	0	0	0	-	-
95	21.7	Railways	0	0	0	-	-
95	21.8	Crossrail 1	0	0	0	0	-
95	21.9	Crossrail 2	0	0	0	0	-
95	21.10	HS2	0	0	0	0	-



Recent aerial photograph



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Capture Date: 22/04/2019

Site Area: 1.12ha



Recent site history - 2015 aerial photograph



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Capture Date: 11/06/2015

Site Area: 1.12ha



Recent site history - 2005 aerial photograph



Capture Date: 02/09/2005

Site Area: 1.12ha



Recent site history - 2000 aerial photograph



Capture Date: 21/07/2000

Site Area: 1.12ha



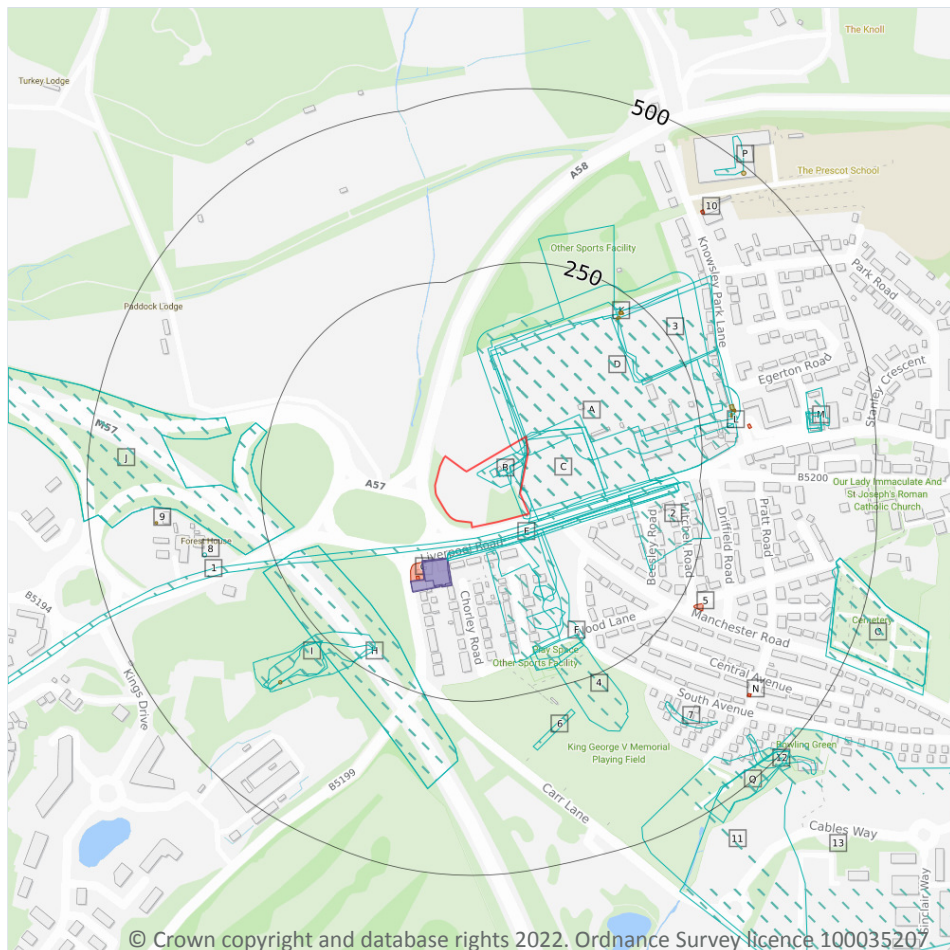
OS MasterMap site plan



Site Area: 1.12ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

50

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
A	On site	Nursery	1851	850321



ID	Location	Land use	Dates present	Group ID
A	On site	Nursery	1925	859770
B	On site	Dye House	1955	896032
B	On site	Dye House	1950	954305
B	On site	Dye House	1851	973203
C	On site	Nursery	1950	870017
C	On site	Nursery	1955	903324
D	On site	Nursery	1990	935132
D	On site	Nursery	1966 - 1975	964074
D	On site	Unspecified Commercial/Industrial	1950 - 1955	970823
1	14m S	Tramway Sidings	1955	854072
E	26m S	Railway Sidings	1950	794599
E	26m S	Tramway Sidings	1925 - 1938	892387
F	27m SE	Unspecified Ground Workings	1955	799863
E	27m S	Tramway Sidings	1925	985822
F	33m S	Tan Yard	1851	797996
F	39m S	Colliery	1851	798241
F	104m S	Unspecified Heap	1966	803300
F	140m S	Unspecified Pit	1966	839691
2	145m E	Earthenware Pottery	1851	834889
H	168m SW	Cuttings	1975	900674
H	168m SW	Cuttings	1990	978280
3	179m NE	Nursery	1906 - 1938	916443
F	187m S	Unspecified Heap	1950	803294
4	199m S	Unspecified Pit	1950 - 1955	873550
I	206m SW	Unspecified Quarry	1891	918037
J	209m W	Cuttings	1975	898753
J	209m W	Cuttings	1990	990987
K	211m NE	Unspecified Tank	1950	824618



ID	Location	Land use	Dates present	Group ID
I	218m SW	Unspecified Quarry	1906 - 1925	862419
K	220m NE	Unspecified Tank	1955	824619
I	256m SW	Unspecified Quarry	1938 - 1955	942049
6	287m S	Unspecified Ground Workings	1975	799862
L	288m E	Unspecified Tanks	1955	815148
L	292m E	Unspecified Tanks	1950	815147
7	335m SE	Unspecified Ground Workings	1925 - 1938	942574
8	341m W	Pump	1851	826860
M	403m E	Police Station	1990	848585
M	403m E	Police Station	1966 - 1975	877999
M	403m E	Police Station	1925 - 1950	899232
M	407m E	Police Station	1955	860103
11	439m SE	Unspecified Works	1966	882261
O	443m E	Cemetery	1950 - 1955	868720
O	447m E	Cemetery	1990	938974
O	447m E	Cemetery	1966 - 1975	985196
12	448m SE	Unspecified Ground Workings	1925 - 1938	847780
P	465m NE	Unspecified Ground Workings	1975	799848
Q	480m SE	Unspecified Pit	1966	961148
13	482m SE	Sewage Disposal Works	1955	955403
Q	482m SE	Unspecified Pit	1955	929379

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

9

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.



Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
K	212m NE	Unspecified Tank	1937	113181
K	221m NE	Unspecified Tank	1995	123065
K	221m NE	Unspecified Tank	1955 - 1974	127986
L	295m E	Tanks	1908 - 1937	133952
L	296m E	Tanks	1982	132179
L	299m E	Tanks	1954 - 1993	138418
I	338m SW	Unspecified Tank	1893 - 1908	140161
9	402m W	Unspecified Tank	1954	143621
P	488m NE	Unspecified Tank	1937	113185

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

7

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
G	76m SW	Electricity Substation	1954 - 1993	69128
G	96m SW	Electricity Substation	1976	74008
5	272m SE	Electricity Substation	1954 - 1993	77747
L	318m E	Electricity Substation	1982 - 1993	76582
10	408m NE	Electricity Substation	1974 - 1995	77412
N	408m SE	Electricity Substation	1994	80899
N	408m SE	Electricity Substation	1972	72250

This data is sourced from Ordnance Survey / Groundsure.



1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

3

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
G	55m S	Garage	1976	20983
G	56m S	Garage	1954 - 1993	26870
G	57m S	Garage	1954 - 1965	26011

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

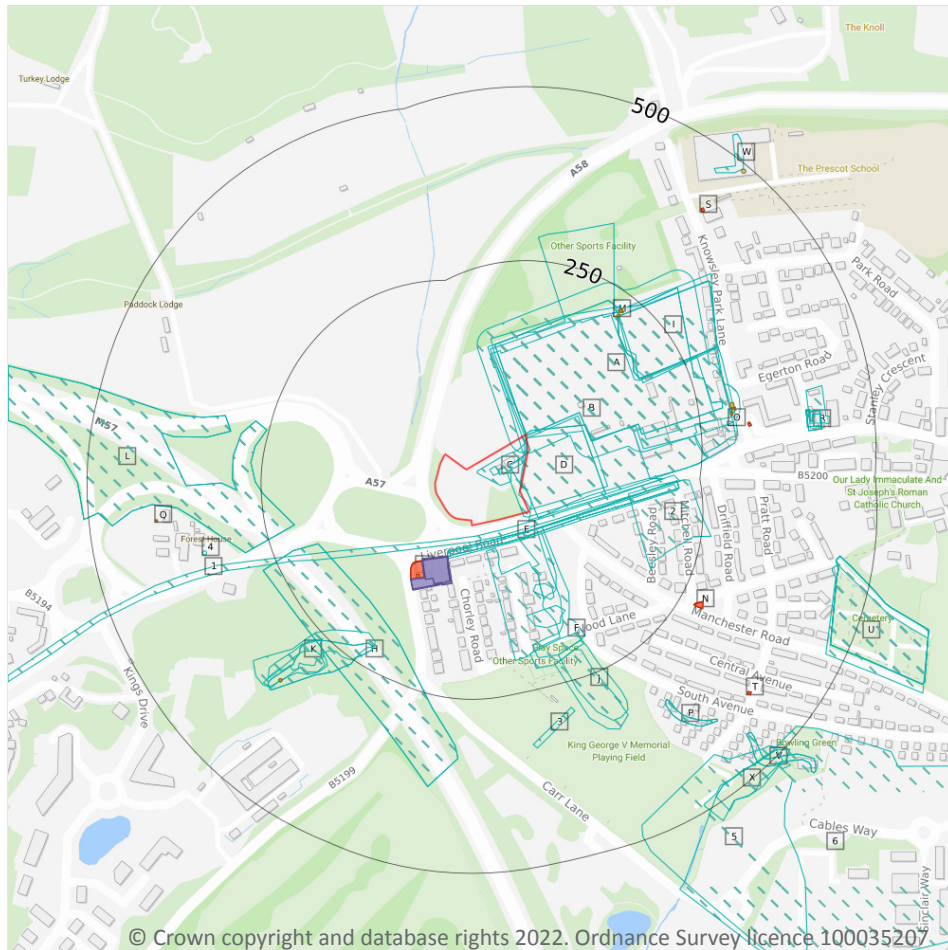
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

65

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
A	On site	Nursery	1990	935132
A	On site	Unspecified Commercial/Industrial	1950	970823
A	On site	Nursery	1975	964074



ID	Location	Land Use	Date	Group ID
A	On site	Nursery	1966	964074
B	On site	Nursery	1851	850321
B	On site	Nursery	1925	859770
C	On site	Dye House	1851	973203
C	On site	Dye House	1950	954305
C	On site	Dye House	1955	896032
D	On site	Nursery	1950	870017
D	On site	Nursery	1955	903324
A	2m NE	Unspecified Commercial/Industrial	1955	970823
1	14m S	Tramway Sidings	1955	854072
E	26m S	Tramway Sidings	1938	892387
E	26m S	Tramway Sidings	1925	892387
E	26m S	Railway Sidings	1950	794599
F	27m SE	Unspecified Ground Workings	1955	799863
E	27m S	Tramway Sidings	1925	985822
F	33m S	Tan Yard	1851	797996
F	39m S	Colliery	1851	798241
F	104m S	Unspecified Heap	1966	803300
F	140m S	Unspecified Pit	1966	839691
2	145m E	Earthenware Pottery	1851	834889
H	168m SW	Cuttings	1975	900674
H	168m SW	Cuttings	1990	978280
I	179m NE	Nursery	1938	916443
I	179m NE	Nursery	1925	916443
I	179m NE	Nursery	1906	916443
F	187m S	Unspecified Heap	1950	803294
J	199m S	Unspecified Pit	1955	873550
K	206m SW	Unspecified Quarry	1891	918037



ID	Location	Land Use	Date	Group ID
J	208m S	Unspecified Pit	1950	873550
L	209m W	Cuttings	1975	898753
L	209m W	Cuttings	1990	990987
M	211m NE	Unspecified Tank	1950	824618
K	218m SW	Unspecified Quarry	1925	862419
K	218m SW	Unspecified Quarry	1906	862419
M	220m NE	Unspecified Tank	1955	824619
K	256m SW	Unspecified Quarry	1955	942049
K	274m SW	Unspecified Quarry	1938	942049
3	287m S	Unspecified Ground Workings	1975	799862
O	288m E	Unspecified Tanks	1955	815148
O	292m E	Unspecified Tanks	1950	815147
P	335m SE	Unspecified Ground Workings	1938	942574
P	335m SE	Unspecified Ground Workings	1925	942574
4	341m W	Pump	1851	826860
R	403m E	Police Station	1938	899232
R	403m E	Police Station	1925	899232
R	403m E	Police Station	1950	899232
R	403m E	Police Station	1975	877999
R	403m E	Police Station	1990	848585
R	403m E	Police Station	1966	877999
R	407m E	Police Station	1955	860103
5	439m SE	Unspecified Works	1966	882261
U	443m E	Cemetery	1950	868720
U	447m E	Cemetery	1955	868720
U	447m E	Cemetery	1975	985196
U	447m E	Cemetery	1990	938974
U	447m E	Cemetery	1966	985196



ID	Location	Land Use	Date	Group ID
V	448m SE	Unspecified Ground Workings	1938	847780
V	448m SE	Unspecified Ground Workings	1925	847780
W	465m NE	Unspecified Ground Workings	1975	799848
X	480m SE	Unspecified Pit	1966	961148
6	482m SE	Sewage Disposal Works	1955	955403
X	482m SE	Unspecified Pit	1955	929379

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

19

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
M	212m NE	Unspecified Tank	1937	113181
M	221m NE	Unspecified Tank	1995	123065
M	221m NE	Unspecified Tank	1963	127986
M	221m NE	Unspecified Tank	1955	127986
M	222m NE	Unspecified Tank	1955	127986
M	222m NE	Unspecified Tank	1974	127986
O	295m E	Tanks	1908	133952
O	295m E	Tanks	1927	133952
O	295m E	Tanks	1937	133952
O	296m E	Tanks	1982	132179
O	299m E	Tanks	1966	138418
O	299m E	Tanks	1954	138418
O	299m E	Tanks	1954	138418
O	300m E	Tanks	1993	138418



ID	Location	Land Use	Date	Group ID
K	338m SW	Unspecified Tank	1893	140161
K	338m SW	Unspecified Tank	1908	140161
Q	402m W	Unspecified Tank	1954	143621
Q	402m W	Unspecified Tank	1954	143621
W	488m NE	Unspecified Tank	1937	113185

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

15

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
G	76m SW	Electricity Substation	1954	69128
G	77m SW	Electricity Substation	1954	69128
G	77m SW	Electricity Substation	1993	69128
G	96m SW	Electricity Substation	1976	74008
N	272m SE	Electricity Substation	1982	77747
N	273m SE	Electricity Substation	1954	77747
N	273m SE	Electricity Substation	1954	77747
N	274m SE	Electricity Substation	1993	77747
O	318m E	Electricity Substation	1982	76582
O	318m E	Electricity Substation	1993	76582
S	408m NE	Electricity Substation	1995	77412
T	408m SE	Electricity Substation	1994	80899
T	408m SE	Electricity Substation	1994	80899
T	408m SE	Electricity Substation	1972	72250
S	408m NE	Electricity Substation	1974	77412



This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

5

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

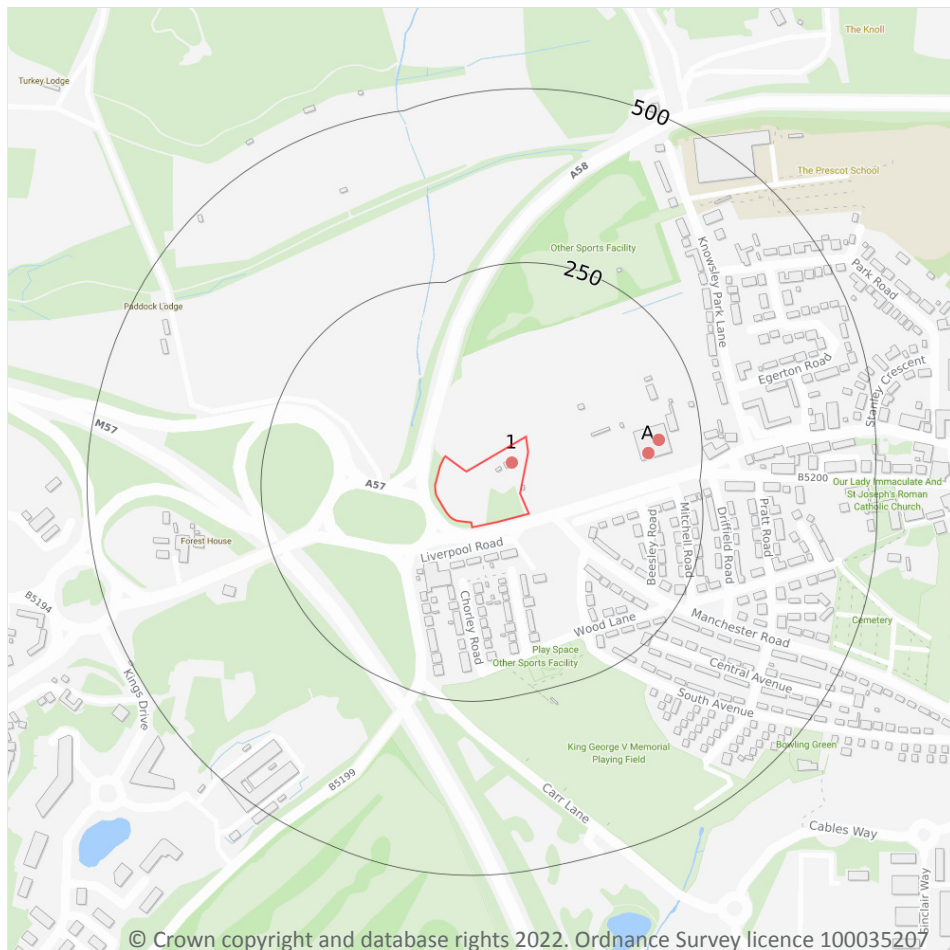
Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
G	55m S	Garage	1976	20983
G	56m S	Garage	1993	26870
G	56m S	Garage	1954	26870
G	57m S	Garage	1965	26011
G	57m S	Garage	1954	26011

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m**0**

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m**0**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m**9**

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

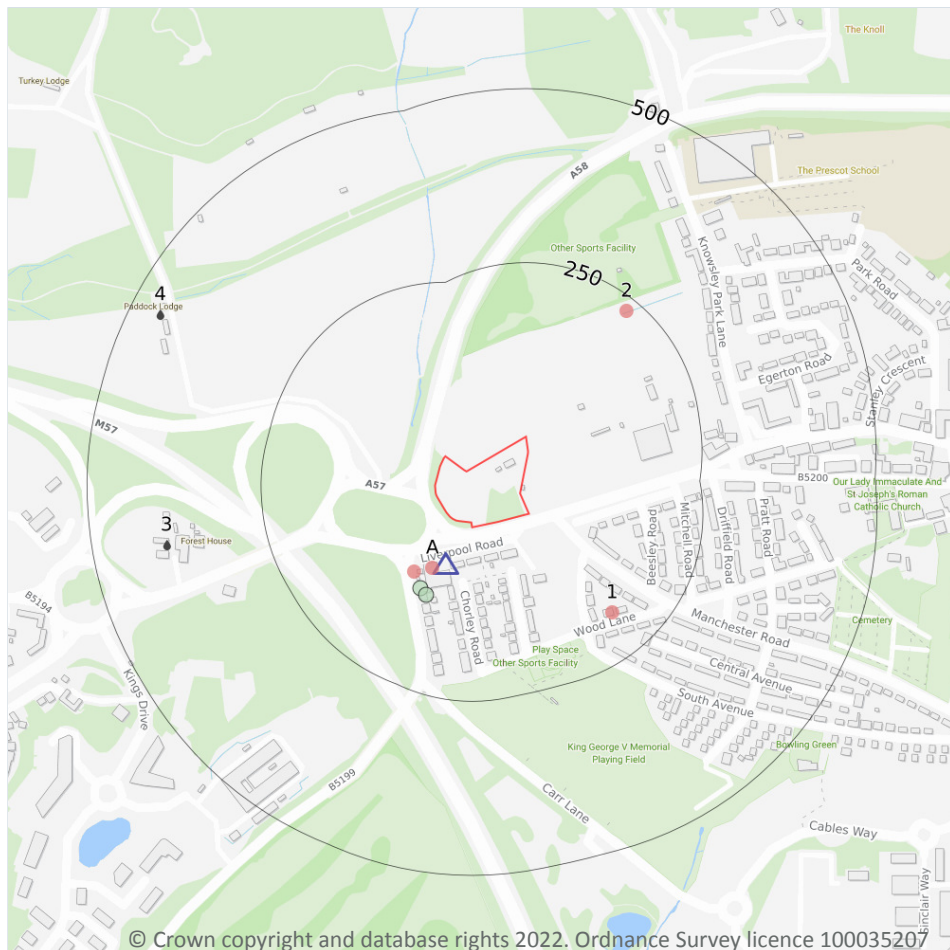
Features are displayed on the Waste and landfill map on **page 24**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	On site	Prescot brook with current silt management in place. Existing garden centre to remain for 2 years of initial site remediation	WEX268937	Using waste exemption	Not on a farm	Use of waste in construction
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Disposing of waste exemption	Both agricultural and non-agricultural waste	Burning waste in the open
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Treating waste exemption	Both agricultural and non-agricultural waste	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste in construction
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of mulch
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Using waste exemption	Both agricultural and non-agricultural waste	Spreading of plant matter to confer benefit
A	172m E	WHITAKERS GARDEN CENTRE Liverpool Road PRESCOT Merseyside L34 3LX	EPR/QF0738X X/A001	Using waste exemption	Both agricultural and non-agricultural waste	Incorporation of ash into soil
A	188m E	LIVERPOOL ROAD, PRESCOT, L34 3LX	WEX061986	Using waste exemption	On a farm	Spreading waste on non-agricultural land to confer benefit
A	188m E	LIVERPOOL ROAD, PRESCOT, L34 3LX	WEX061986	Using waste exemption	On a farm	Use of mulch

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- ◆ Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

4

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Company	Address	Activity	Category
A	76m SW	Huyton Lane Garage	Brookbridge Garage, Liverpool Road, Prescott, Merseyside, L34 1NL	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	95m SW	Electricity Sub Station	Merseyside, L34	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
1	185m SE	Auto Cosmetic Solutions	40, Wood Lane, Prescot, Merseyside, L34 1LW	Vehicle Repair, Testing and Servicing	Repair and Servicing
2	232m NE	Tank	Merseyside, L34	Tanks (Generic)	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Company	Address	LPG	Status
A	64m S	OBSOLETE	Liverpool Road, Prescot, Merseyside, L34 1NN	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.



4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m**0**

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m**0**

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m**0**

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m**0**

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m

2

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Address	Details	
3	393m W	DYE HOUSE, LIVERPOOL RD, PRESCOT, MERSEYSIDE, L34 1NR	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/339 Permit Version: 1 Receiving Water: PRECSOT BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 14/09/1962 Effective Date: 14/09/1962 Revocation Date: -
4	456m NW	PADDOCK ROAD, KNOWSLEY, LIVERPOOL, MERSEYSIDE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/311 Permit Version: 1 Receiving Water: TRIB OF RIVER ALT	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 08/07/1953 Effective Date: 08/07/1953 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.



4.14 Pollutant release to surface waters (Red List)

Records within 500m**0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m**2**

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Details	
A	109m SW	Incident Date: 13/07/2001 Incident Identification: 16187 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
A	115m S	Incident Date: 13/08/2001 Incident Identification: 23908 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

Records within 500m

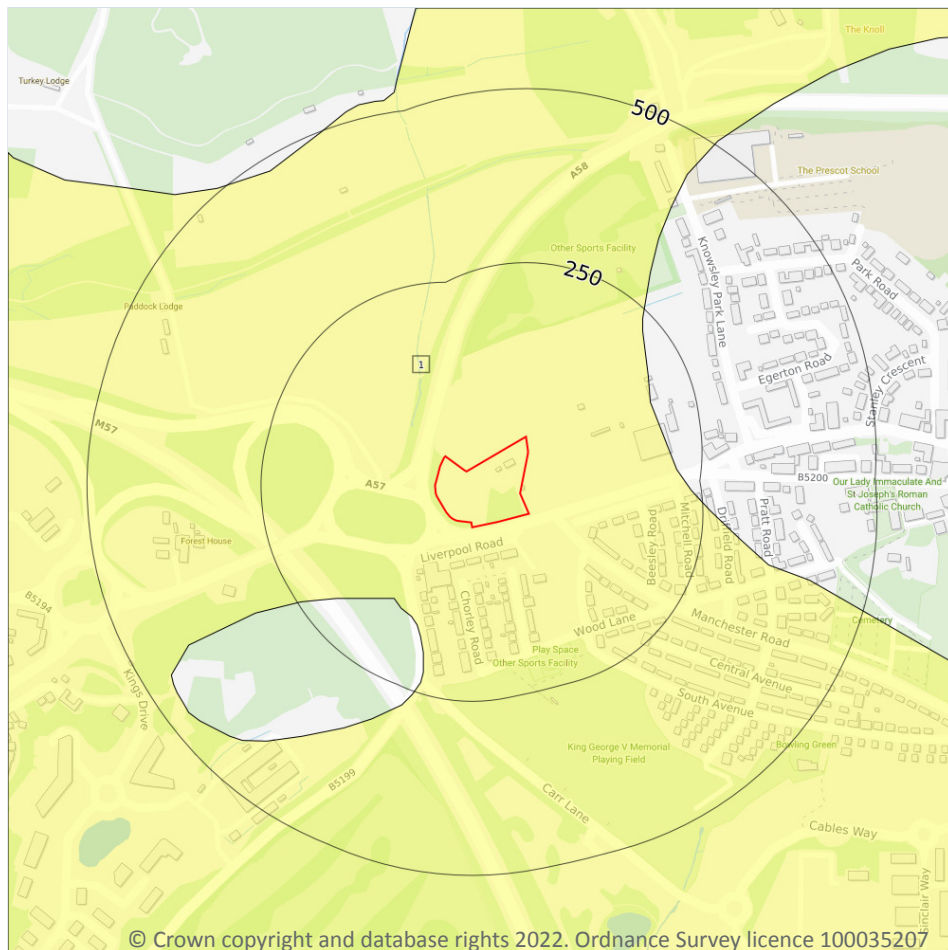
0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

1

Aquifer status of groundwater held within superficial geology.

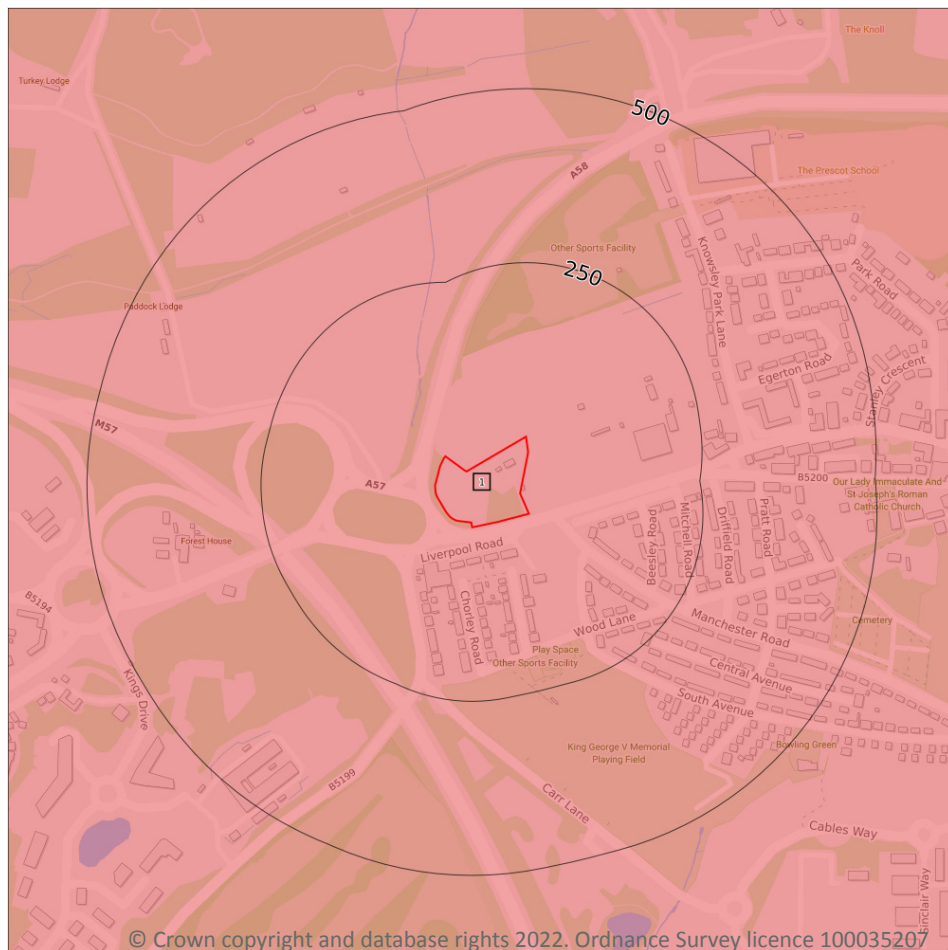
Features are displayed on the Hydrogeology map on **page 33**

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

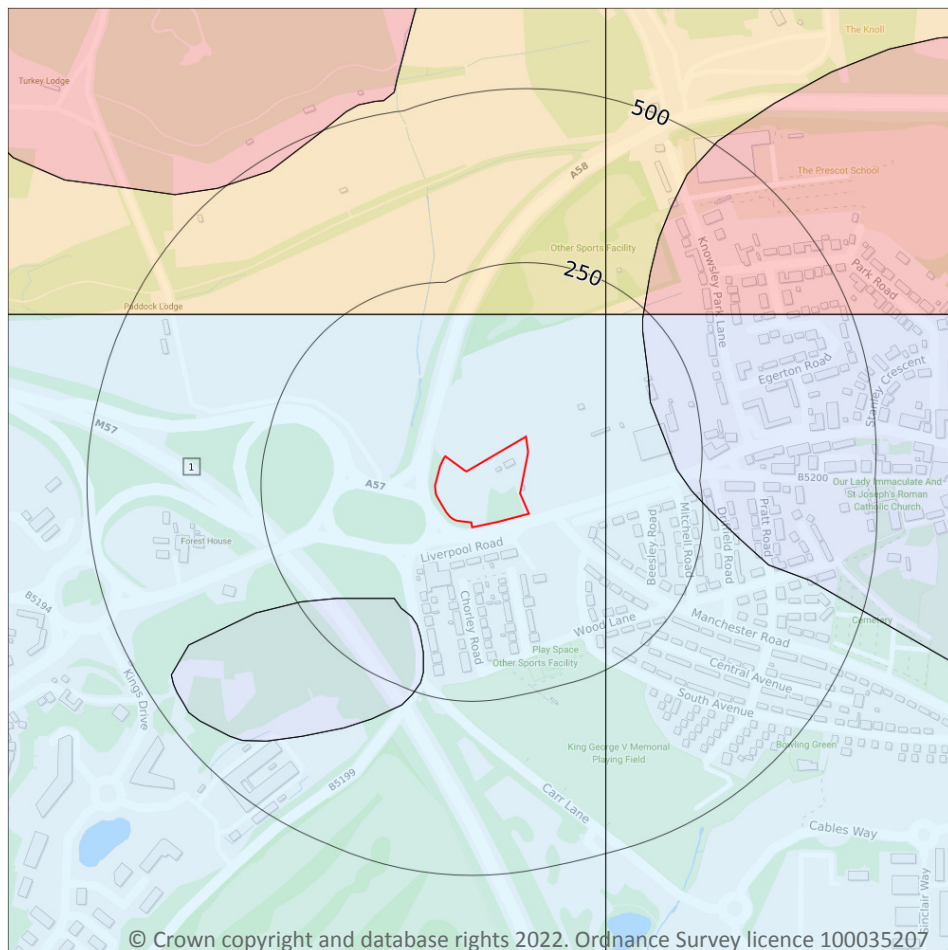
Features are displayed on the Bedrock aquifer map on **page 34**

ID	Location	Designation	Description
1	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

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



— Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m

1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 35**



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

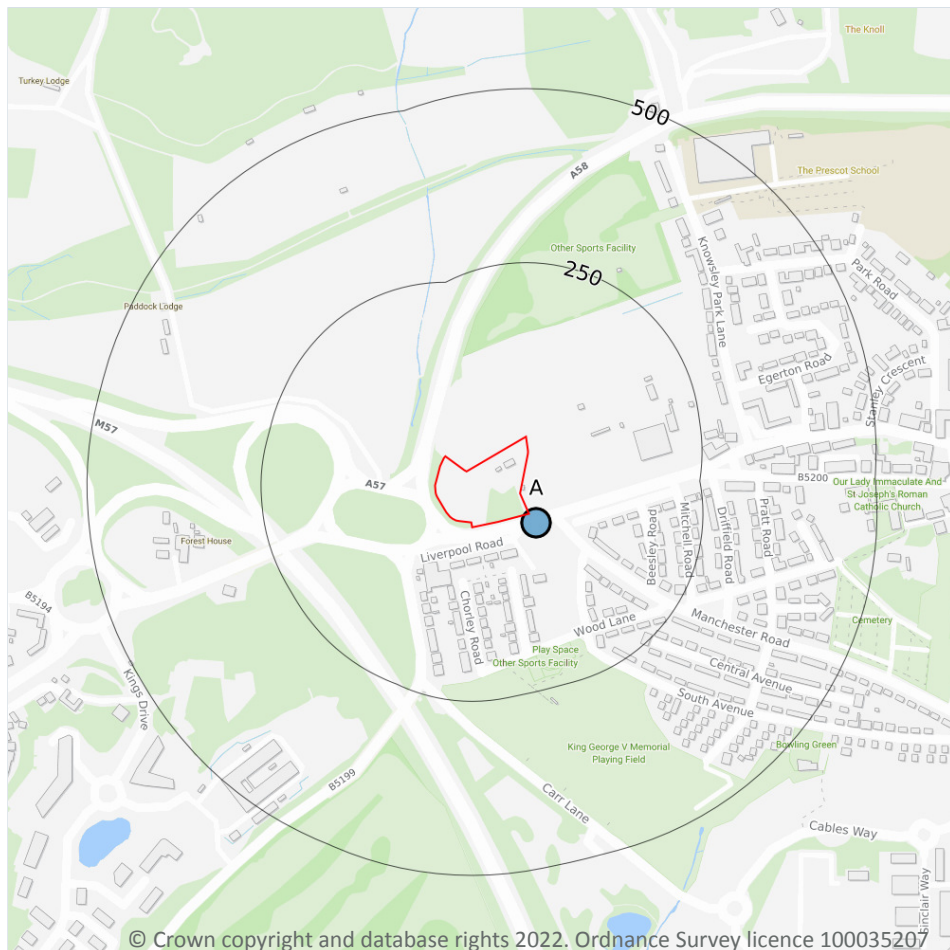
Records on site

0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

0

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.



5.7 Surface water abstractions

Records within 2000m

2

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 37**

ID	Location	Details	
A	17m SE	Status: Historical Licence No: 2569028003 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "LOGWOOD MILL BROOK AT LH'S PREMISES, PRESCOT, MERSEYSIDE" Data Type: Point Name: JAMES WHITAKER & SONS NURSERYMEN LTD Easting: 345900 Northing: 392700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1999 Version End Date: -
A	17m SE	Status: Historical Licence No: 2569028003 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: LOGWOOD MILL BROOK AT LH'S PREMISES, PRESCOT, MERSEYSIDE Data Type: Point Name: JAMES WHITAKER & SONS NURSERYMEN LTD Easting: 345900 Northing: 392700	Annual Volume (m ³): 772.82 Max Daily Volume (m ³): 77.282 Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1999 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.



5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

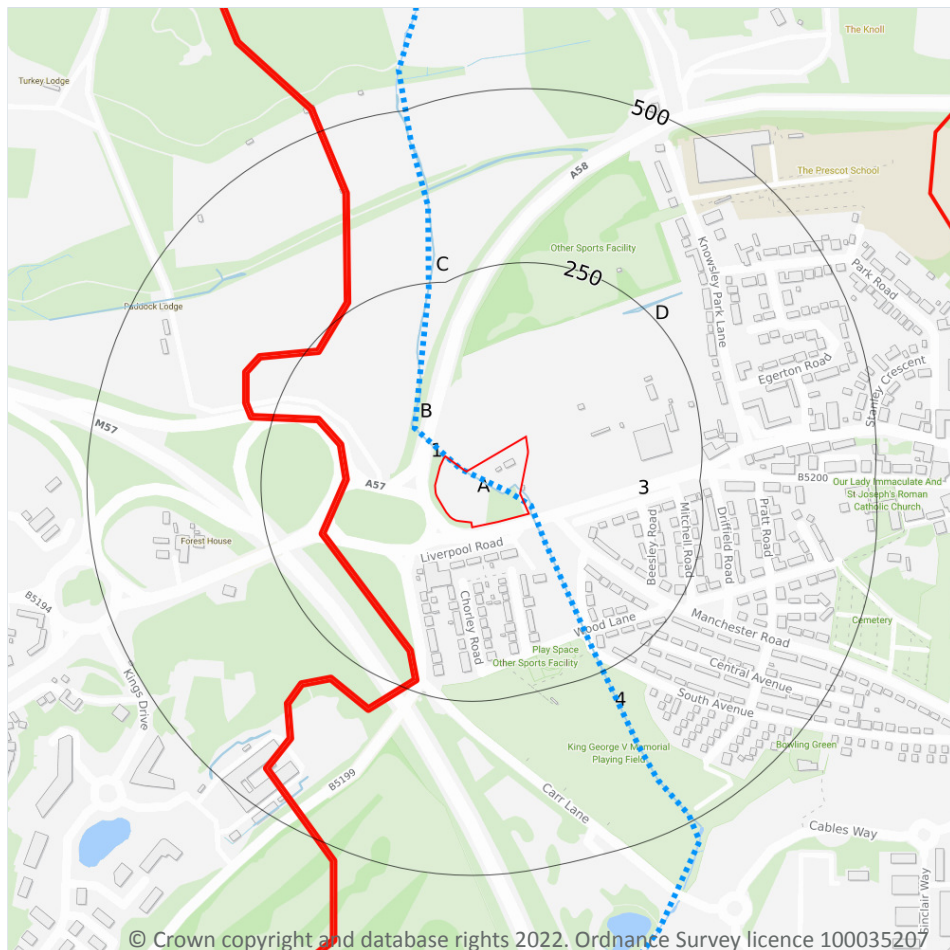
0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

13

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 40**

ID	Location	Type of water feature	Ground level	Permanence	Name
1	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Prescot Brook



ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Prescot Brook
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Prescot Brook
A	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Prescot Brook
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Prescot Brook
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Prescot Brook
4	47m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Prescot Brook
B	63m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Prescot Brook
B	117m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Prescot Brook
B	122m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Prescot Brook
B	182m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Prescot Brook
C	198m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Prescot Brook
D	225m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.



6.2 Surface water features

Records within 250m

5

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 40**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 40**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
3	On site	River	Prescot Brook (Logwood Mill Brook)	GB112069060710	Ditton	Mersey Lower

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified

1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 40**



ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
2	On site	River	Prescot Brook (Logwood Mill Brook)	<u>GB112069060710</u>	Poor	Fail	Poor	2019

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1
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Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 40**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Sankey and Glaze Carboniferous aquifers	<u>GB41202G100100</u>	Poor	Poor	Good	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- River and coastal flooding:
 - High
 - Medium
 - Low
 - Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m

9

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 44**

Distance	Flood risk category
On site	High
0 - 50m	High

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	0
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Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	0
----------------------------	----------

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	0
----------------------------	----------

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m	0
----------------------------	----------

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



[illegible]

 Flood zone 2

 Flood zone 3

46

7.7 Flood Zone 3

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

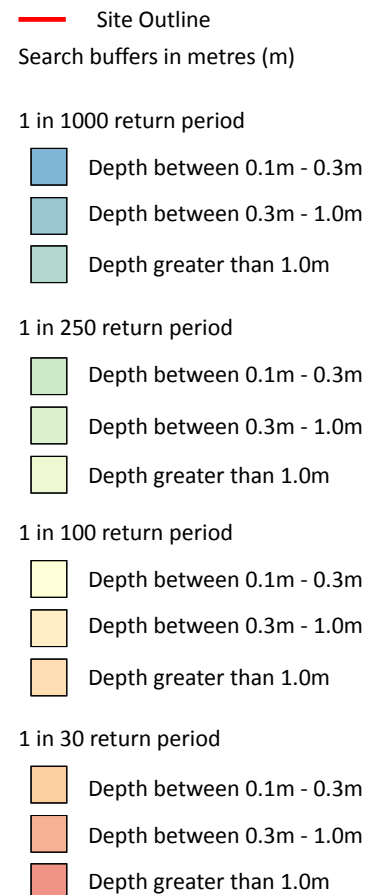
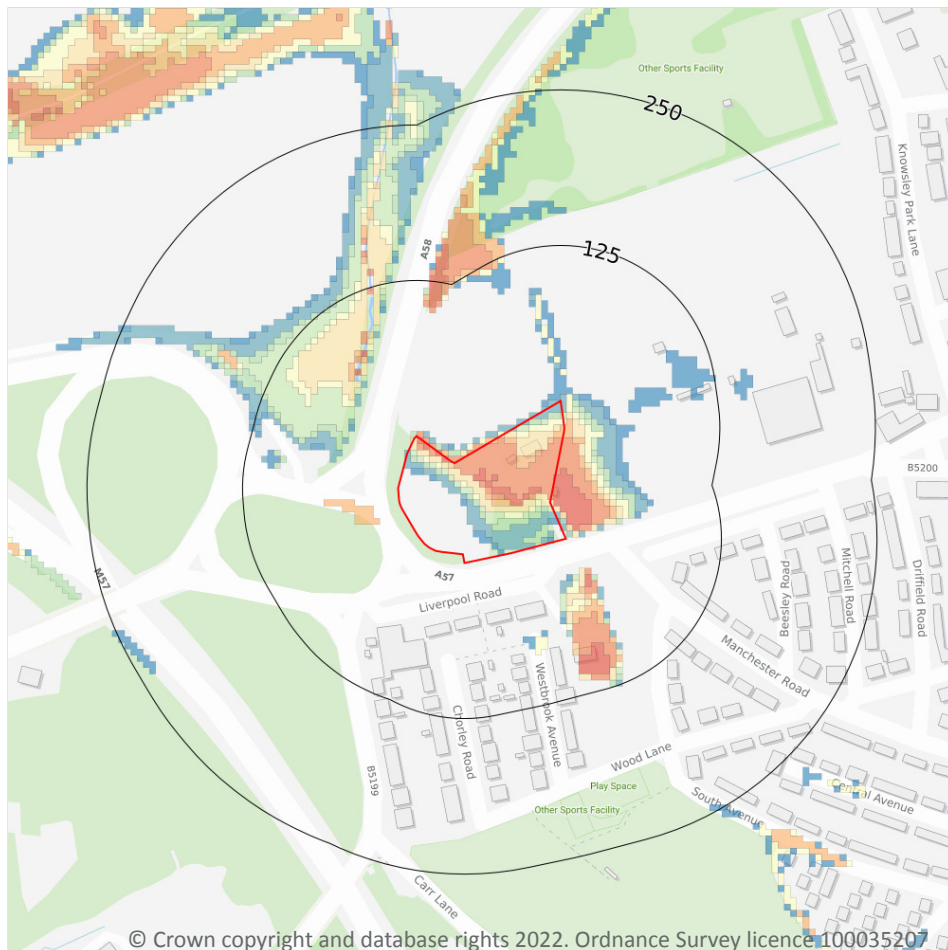
Features are displayed on the River and coastal flooding map on **page 44**

Location	Type
On site	Zone 3 - (Fluvial Models)

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 30 year, Greater than 1.0m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 48**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

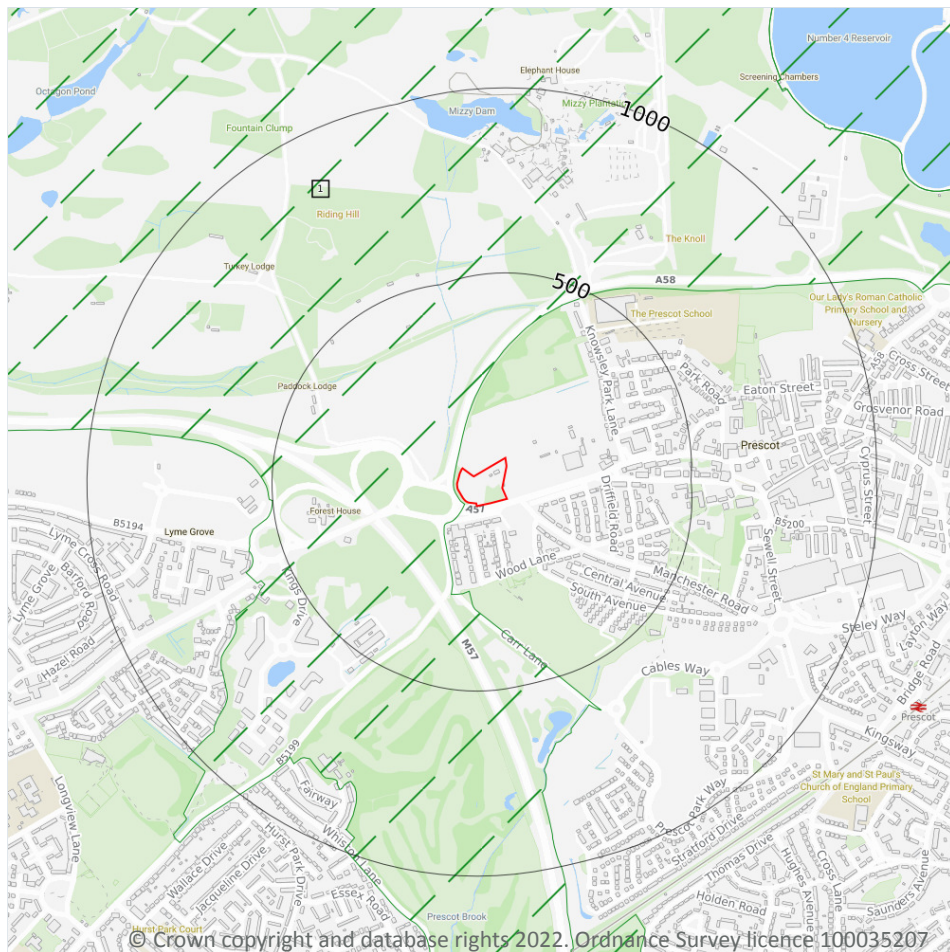
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

This data is sourced from Ambiantal Risk Analytics.



10 Environmental designations



— Site Outline
Search buffers in metres (m)
Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m**0**

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m**0**

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m**0**

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m**0**

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m**2**

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Local Authority name
1	9m SW	Merseyside and Greater Manchester	Knowsley
2	1238m NE	Merseyside and Greater Manchester	St. Helens

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m**0**

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

5

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing
292m NW	ALT NVZ	Surface Water	642	Existing
1182m N	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing
1186m E	Sankey Brook (Black Bk to Mersey) NVZ	Surface Water	639	Existing
1663m W	ALT NVZ	Surface Water	642	Existing

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 56**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.

This data is sourced from Natural England.

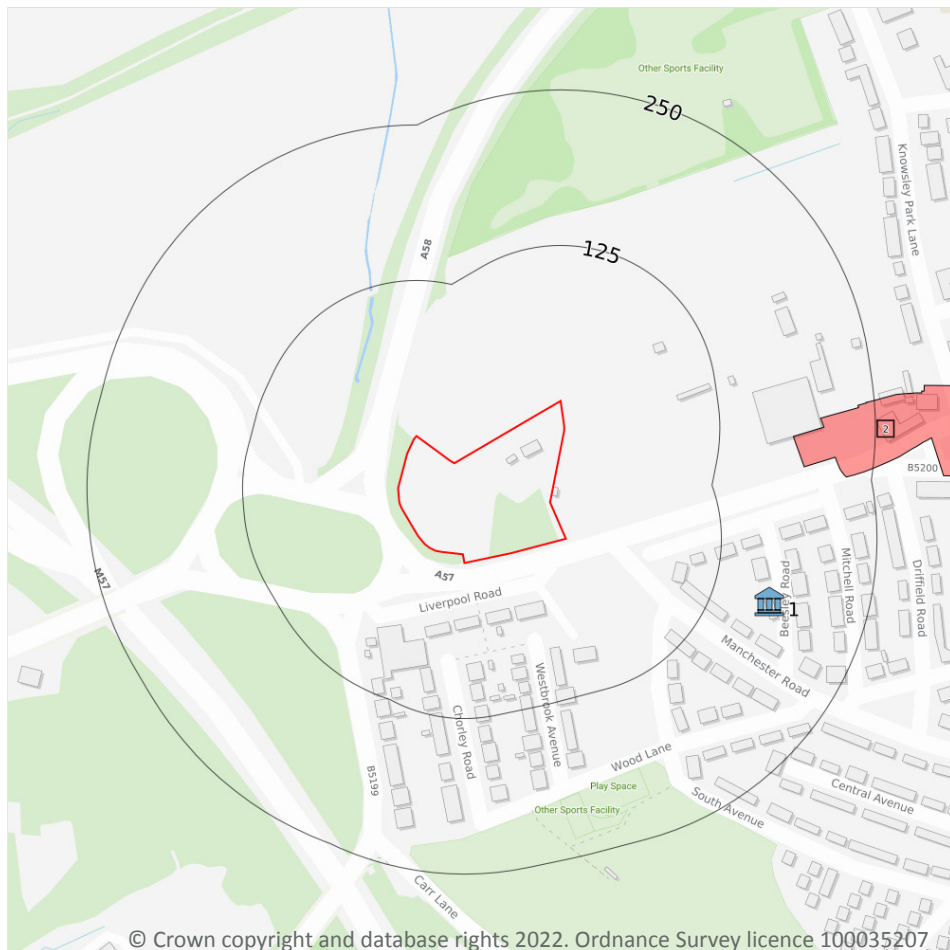
10.18 SSSI Units

Records within 2000m	0
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Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m**0**

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m**0**

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m**1**

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 58**

ID	Location	Name	Grade	Reference Number	Listed date
1	171m E	6 and 6a, Beesley Road, Prescot, Knowsley, L34	II	1075499	03/08/1981

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



11.5 Conservation Areas

Records within 250m

1

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

Features are displayed on the Visual and cultural designations map on **page 58**

ID	Location	Name	District	Date of designation
2	184m E	Prescot Town Centre, Knowsley	Knowsley	1974

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

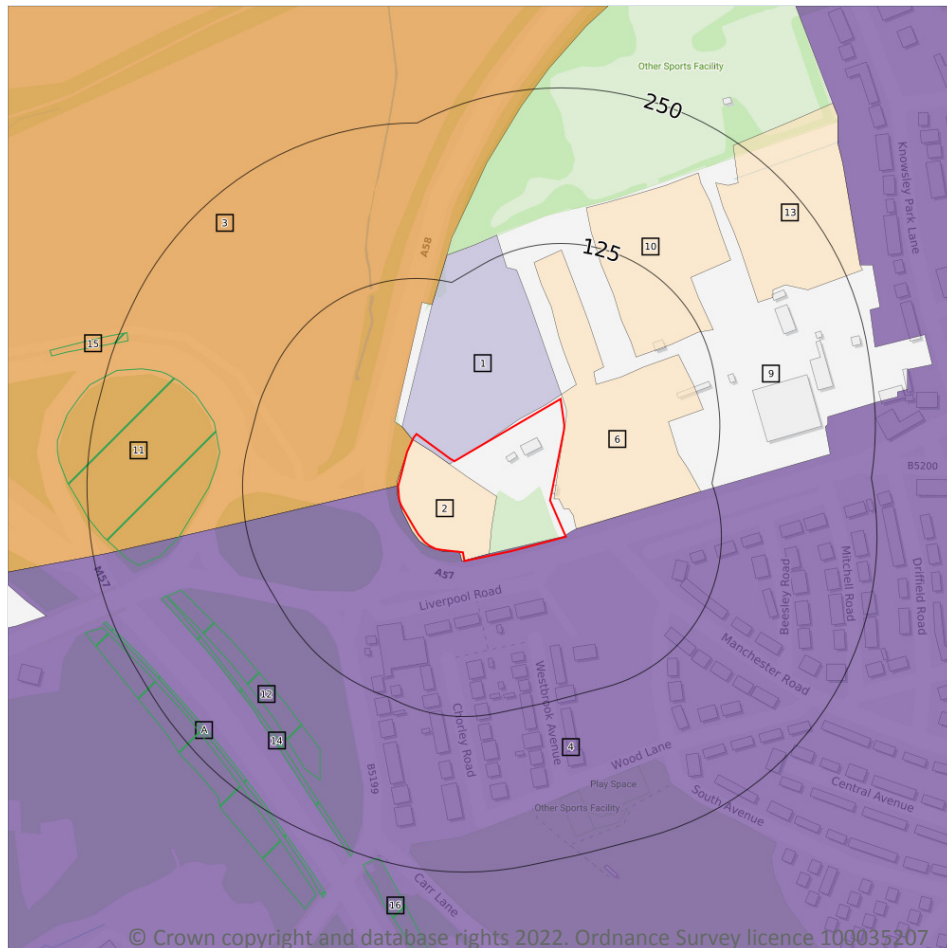
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Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

8

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 61**

ID	Location	Classification	Description
1	On site	Grade 5	Very poor quality agricultural land. Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.
2	On site	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

ID	Location	Classification	Description
3	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.
4	On site	Urban	-
6	0m E	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
9	31m E	Not Surveyed	-
10	69m NE	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
13	177m NE	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

7

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

Features are displayed on the Agricultural designations map on **page 61**

ID	Location	Description	Reference	Application date
11	146m W	Selective Fell/Thin (Unconditional)	018/366/15-16	-
12	169m SW	Selective Fell/Thin (Unconditional)	018/366/15-16	-



ID	Location	Description	Reference	Application date
14	188m SW	Selective Fell/Thin (Unconditional)	018/366/15-16	-
A	231m SW	Selective Fell/Thin (Unconditional)	018/366/15-16	-
A	237m SW	Selective Fell/Thin (Unconditional)	018/366/15-16	-
15	241m W	Selective Fell/Thin (Unconditional)	018/366/15-16	-
16	248m S	Selective Fell/Thin (Unconditional)	018/366/15-16	-

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

1

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

Location	Reference	Scheme	Start Date	End date
56m N	AG00304735	Entry Level plus Higher Level Stewardship	01/01/2011	31/12/2020

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

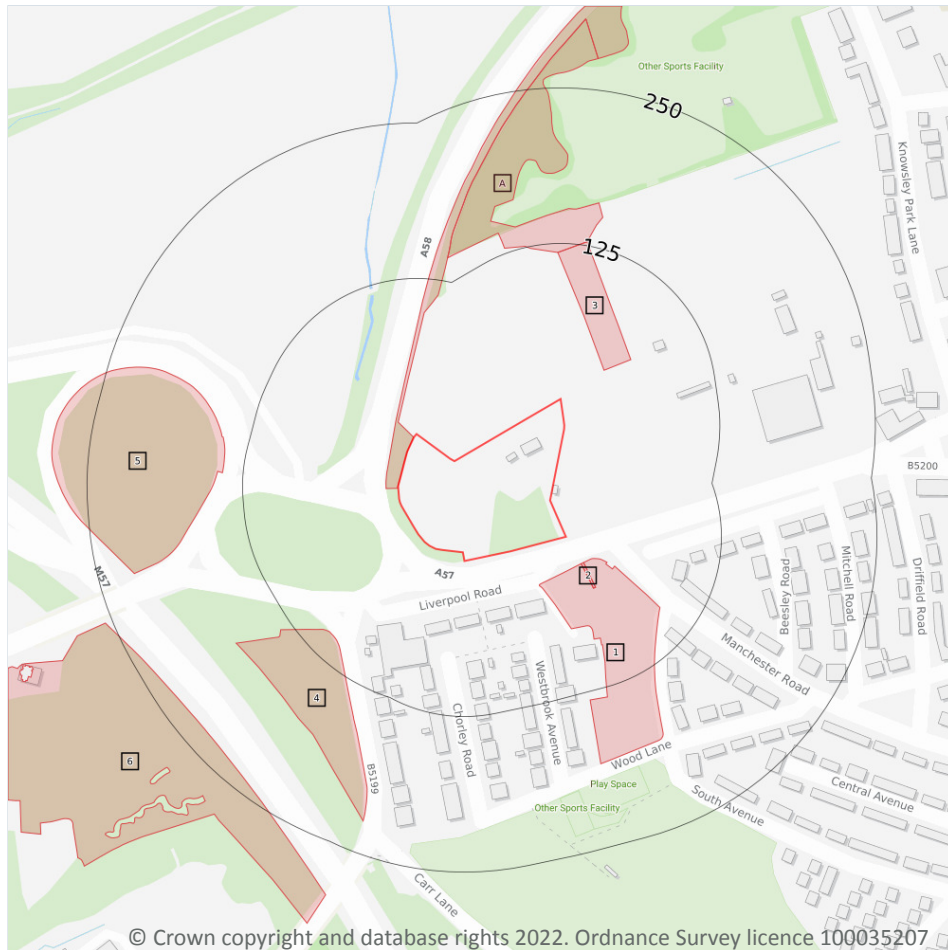
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Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



13 Habitat designations



- Site Outline**
- Search buffers in metres (m)**
- Priority Habitat Inventory
 - Open Mosaic Habitat
 - Limestone Pavement Orders
- Habitat Networks**
- Primary Habitat
 - Restorable Habitat
 - Associated Habitats
 - Habitat Restoration-Creation
 - Network Enhancement Zone 1
 - Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

8

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on **page 64**

ID	Location	Main Habitat	Other habitats
A	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
1	25m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	25m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	42m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
4	105m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	118m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	141m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	232m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0
----------------------------	----------

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0
----------------------------	----------

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0
----------------------------	----------

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 66**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	No coverage	No coverage	No coverage	NoCov

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m

0

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



The map shows the Prescott area in Greater Manchester. A red-outlined house with the number 1 is located near the center. Two concentric circles are drawn around the house, labeled 500 and 1000, indicating distances. The map includes various landmarks such as the Prescott Brook, M57, and several schools. The map is credited to Ordnance Survey.

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☐ Geological map tile

70

Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

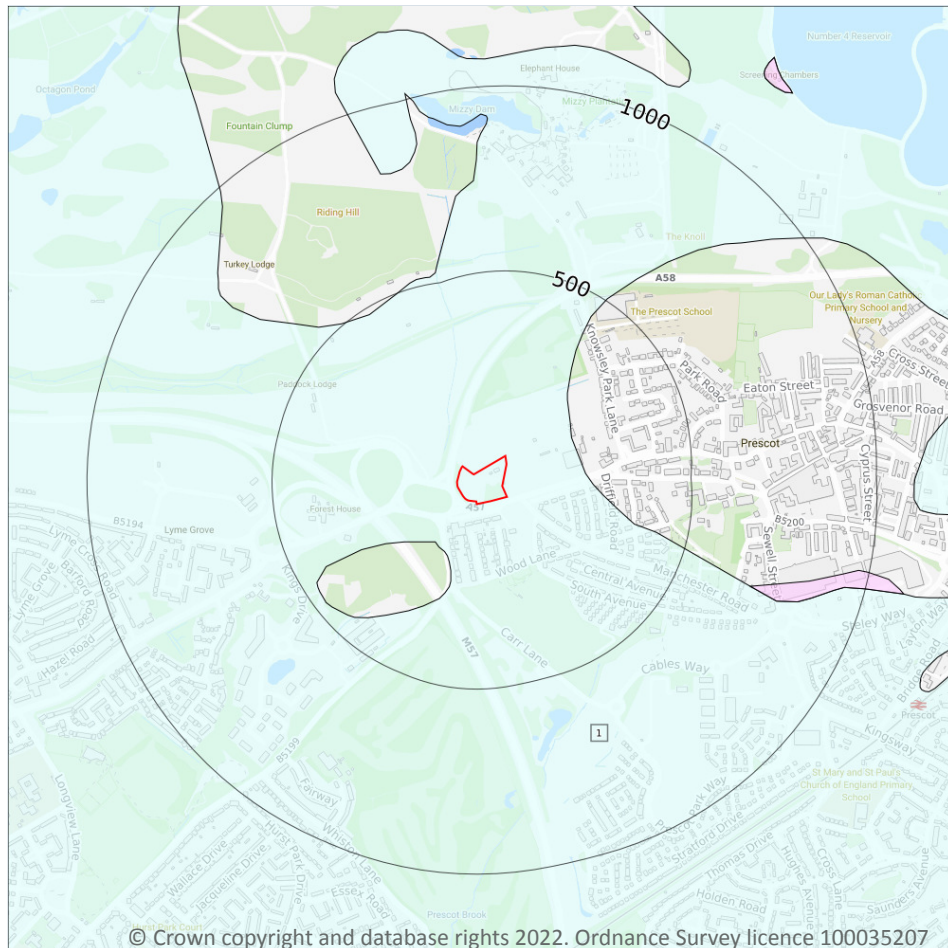
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A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

1

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 72**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

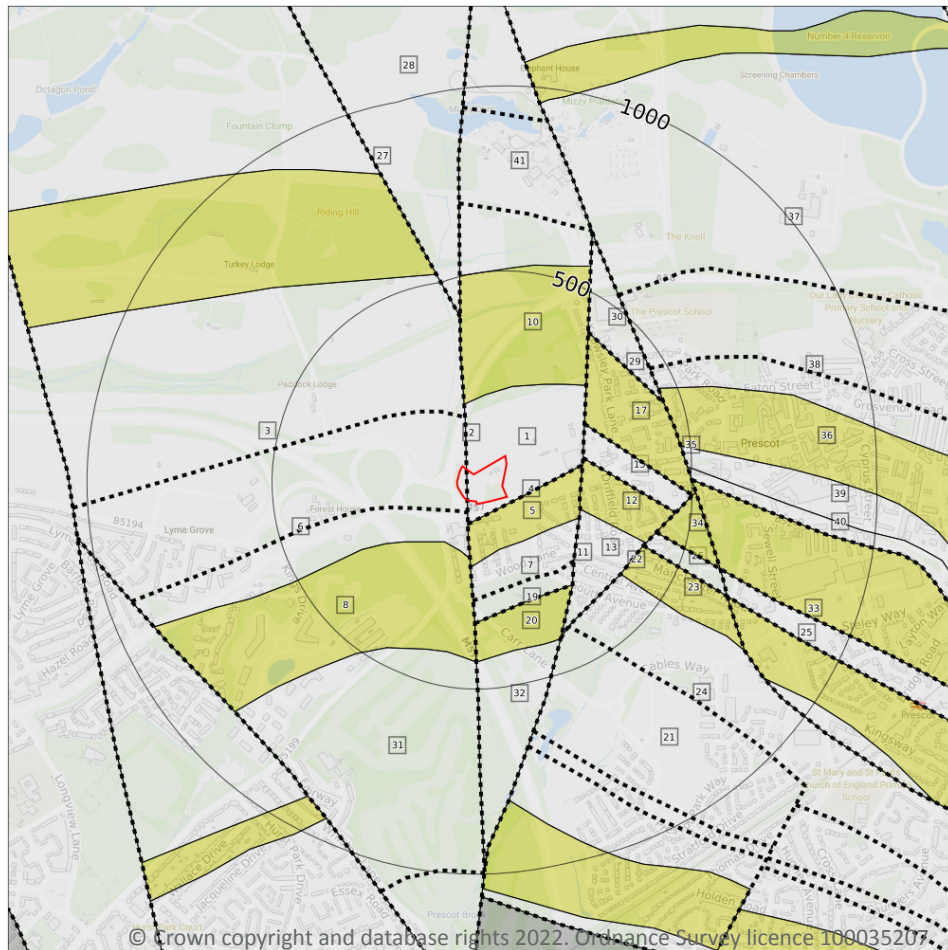
Records within 50m**0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

24

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 74**

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
5	18m SE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
7	127m SE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	129m SW	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
10	168m N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
12	197m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
13	201m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
15	207m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
17	231m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
20	283m S	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
21	365m SE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
23	372m SE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
26	391m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
28	395m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
30	397m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
31	407m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
32	408m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
34	415m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
36	451m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
37	451m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
39	473m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
40	489m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
41	500m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2
---------------------------	----------

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Moderate	Low
18m E	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	17
----------------------------	-----------

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 74**

ID	Location	Category	Description
2	On site	FAULT	Fault, inferred
4	18m SE	ROCK	Coal seam, inferred
6	33m S	ROCK	Coal seam, inferred
9	133m N	ROCK	Coal seam, inferred



ID	Location	Category	Description
11	197m E	FAULT	Fault, inferred
14	207m E	ROCK	Coal seam, inferred
16	230m S	ROCK	Coal seam, inferred
18	231m E	ROCK	Coal seam, inferred
19	283m S	ROCK	Coal seam, inferred
22	365m SE	FAULT	Fault, observed
24	387m SE	ROCK	Coal seam, inferred
25	391m E	ROCK	Coal seam, inferred
27	395m N	FAULT	Fault, inferred
29	397m NE	ROCK	Coal seam, inferred
33	415m E	ROCK	Coal seam, inferred
35	451m E	FAULT	Fault, inferred
38	456m NE	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



- Site Outline
- Search buffers in metres (m)
- Confidential
 - 0 - 10m
 - 10 - 30m
 - 30m+
 - Unknown

16.1 BGS Boreholes

Records within 250m

31

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 78**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	137m NE	346000 392900	PROP GARDENSTORE. TP.3	2.0	N	165705
A	137m NE	346000 392900	PROP GARDENSTORE. TP.2	2.0	N	165704
A	137m NE	346000 392900	PROP GARDENSTORE. TP.5	2.0	N	165707

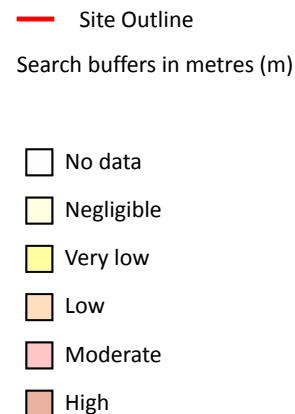
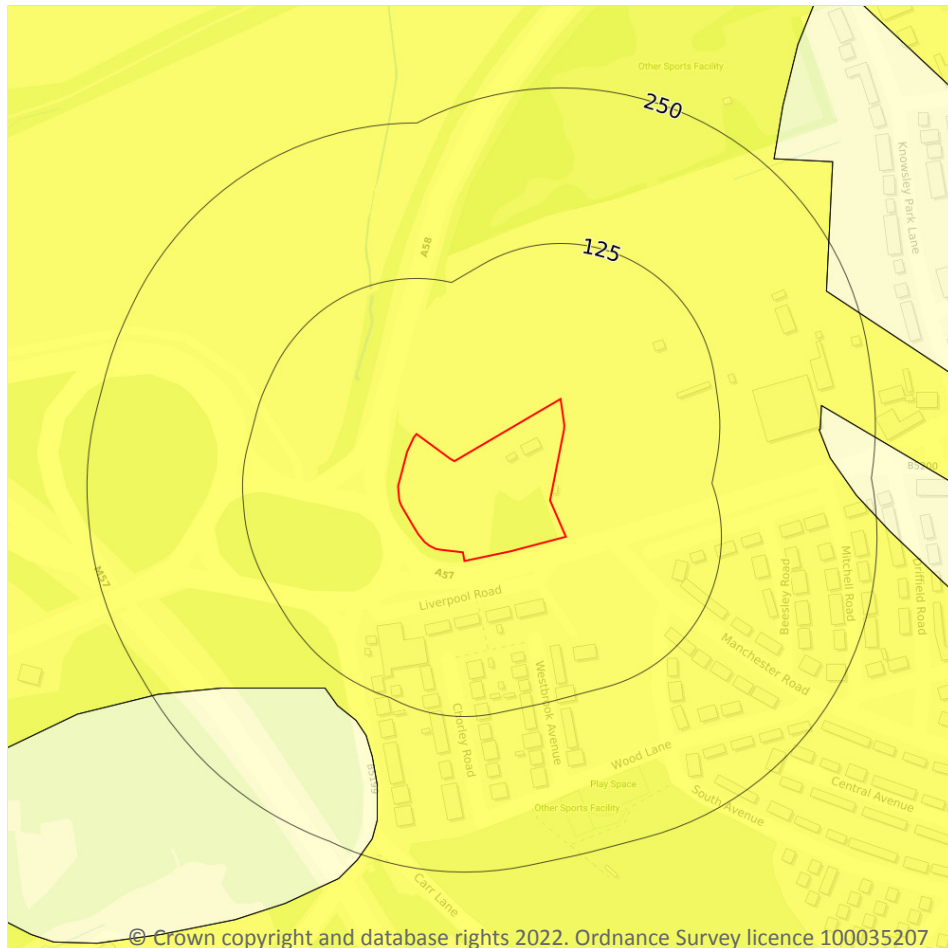


ID	Location	Grid reference	Name	Length	Confidential	Web link
A	137m NE	346000 392900	PROP GARDENSTORE. 3R	30.0	N	165719
A	137m NE	346000 392900	PROP GARDENSTORE. 8R	12.0	N	165724
A	137m NE	346000 392900	PROP GARDENSTORE. 1R	30.0	N	165717
A	137m NE	346000 392900	PROP GARDENSTORE. 12R	12.0	N	165728
A	137m NE	346000 392900	PROP GARDENSTORE. TP.14	2.0	N	165716
A	137m NE	346000 392900	PROP GARDENSTORE. 4R	30.0	N	165720
A	137m NE	346000 392900	PROP GARDENSTORE. TP.13	2.0	N	165715
A	137m NE	346000 392900	PROP GARDENSTORE. TP.6	2.0	N	165708
A	137m NE	346000 392900	PROP GARDENSTORE. TP.1	2.0	N	165703
A	137m NE	346000 392900	PROP GARDENSTORE. 7R	11.0	N	165723
A	137m NE	346000 392900	PROP GARDENSTORE. 11R	12.0	N	165727
A	137m NE	346000 392900	PROP GARDENSTORE. 10R	6.0	N	165726
A	137m NE	346000 392900	PROP GARDENSTORE. 17R	12.0	N	165733
A	137m NE	346000 392900	PROP GARDENSTORE. 9R	10.0	N	165725
A	137m NE	346000 392900	PROP GARDENSTORE. 2R	30.0	N	165718
A	137m NE	346000 392900	PROP GARDENSTORE. TP.4	2.0	N	165706
A	137m NE	346000 392900	PROP GARDENSTORE. 5R	30.0	N	165721
A	137m NE	346000 392900	PROP GARDENSTORE. 16R	6.0	N	165732
A	137m NE	346000 392900	PROP GARDENSTORE. TP.12	2.0	N	165714
A	137m NE	346000 392900	PROP GARDENSTORE. TP.9	1.0	N	165711
A	137m NE	346000 392900	PROP GARDENSTORE. 13R	12.0	N	165729
A	137m NE	346000 392900	PROP GARDENSTORE. 14R	10.0	N	165730
A	137m NE	346000 392900	PROP GARDENSTORE. TP.8	2.0	N	165710
A	137m NE	346000 392900	PROP GARDENSTORE. 6R	12.0	N	165722
A	137m NE	346000 392900	PROP GARDENSTORE. 15R	12.0	N	165731
A	137m NE	346000 392900	PROP GARDENSTORE. TP.7	3.0	N	165709
A	137m NE	346000 392900	PROP GARDENSTORE. TP.10	2.0	N	165712
A	137m NE	346000 392900	PROP GARDENSTORE. TP.11	3.0	N	165713

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

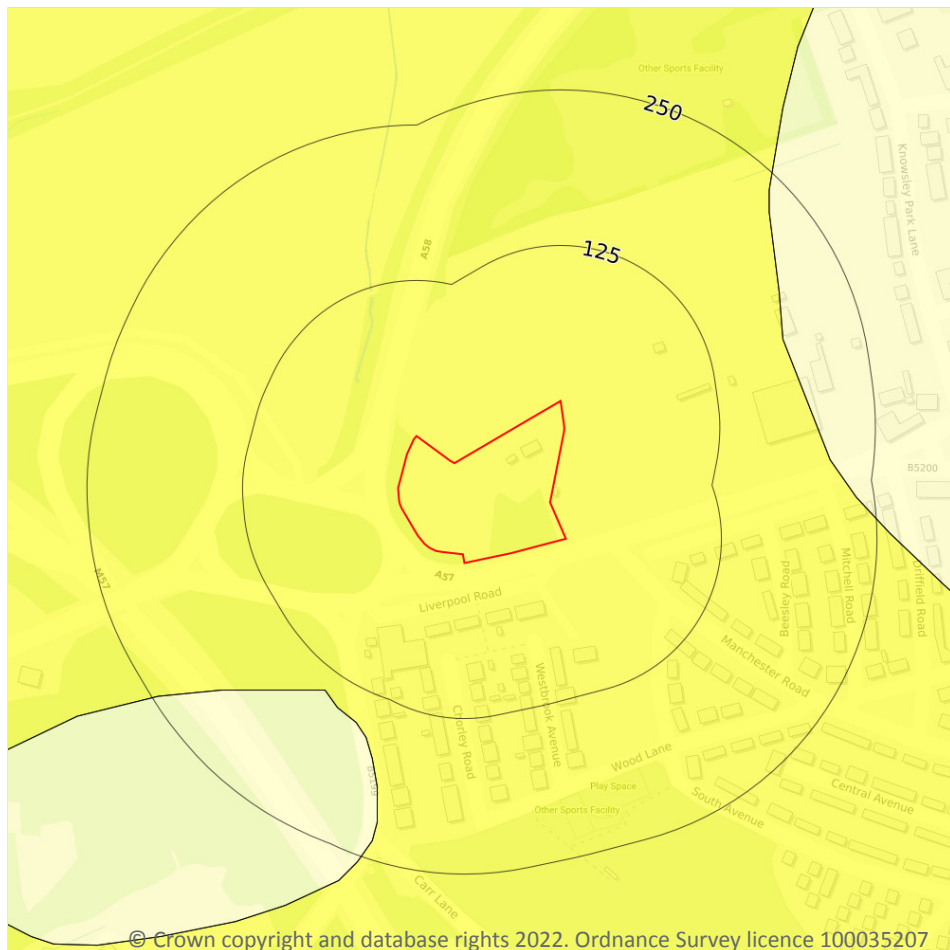
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 80**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.2 Running sands

Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

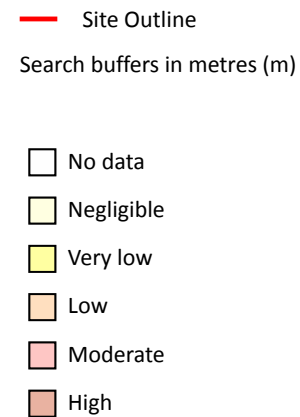
Features are displayed on the Natural ground subsidence - Running sands map on **page 81**

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

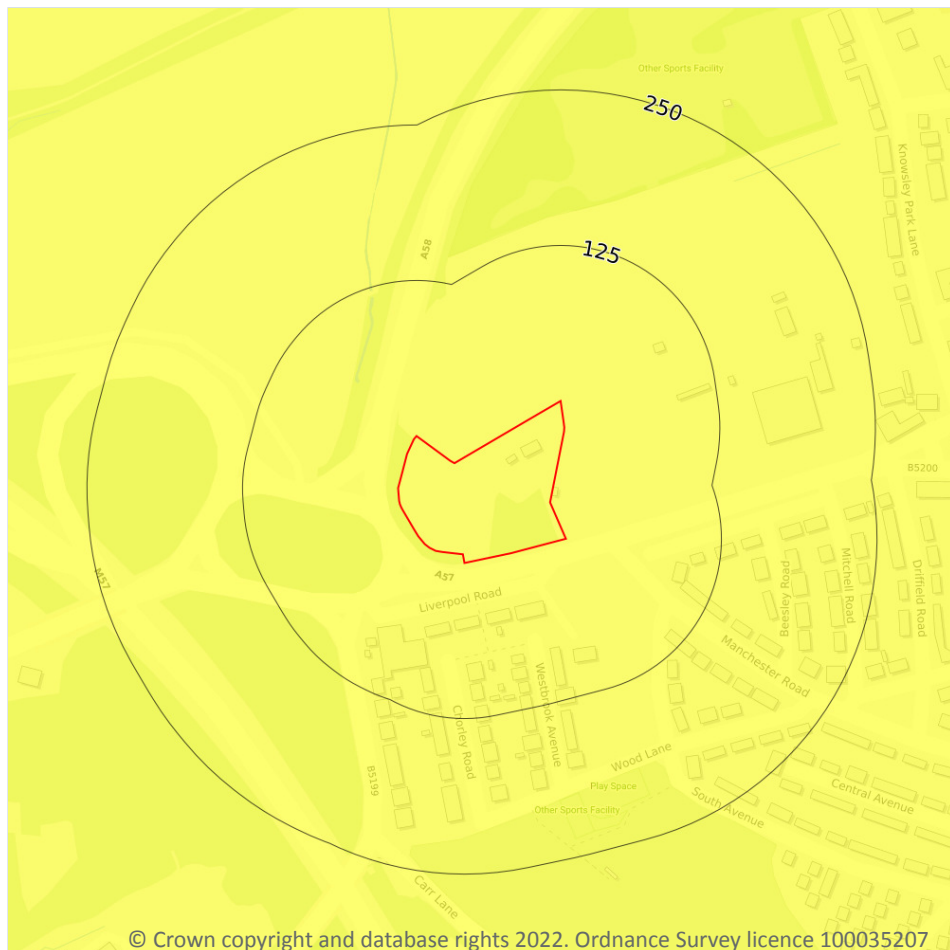
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 82**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.4 Collapsible deposits

Records within 50m

1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

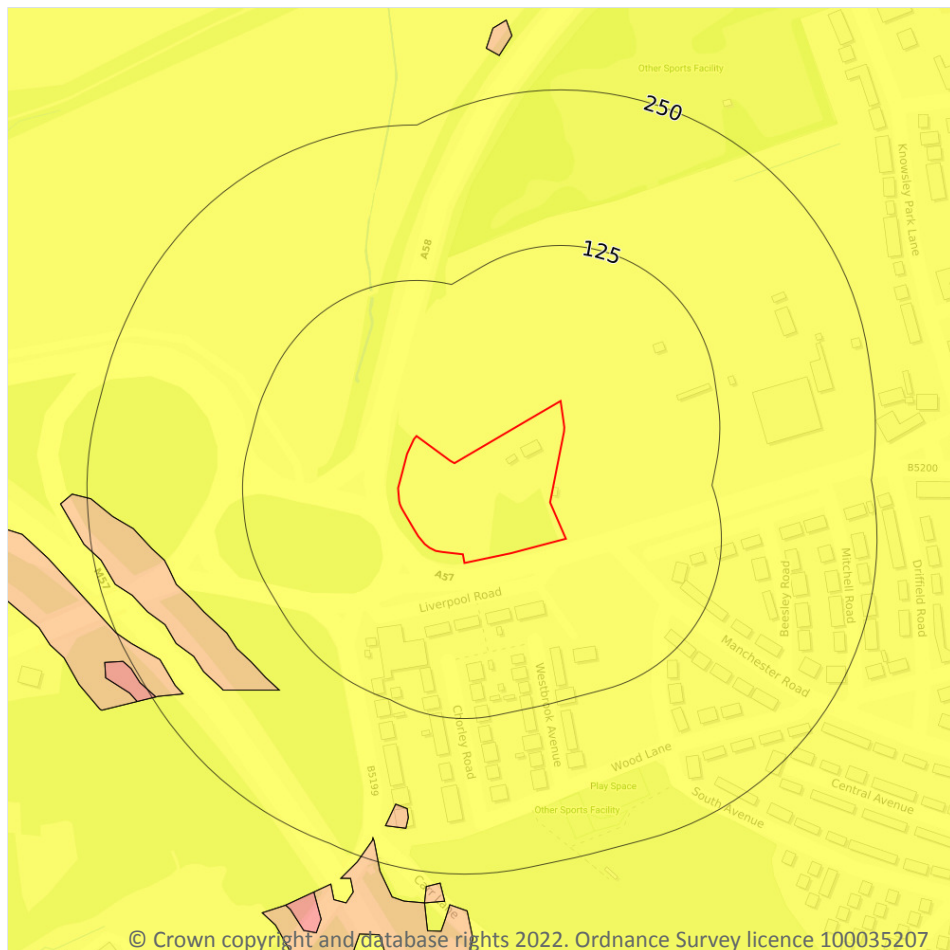
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 83**

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 84**

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



- Site Outline**
- Search buffers in metres (m)**
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

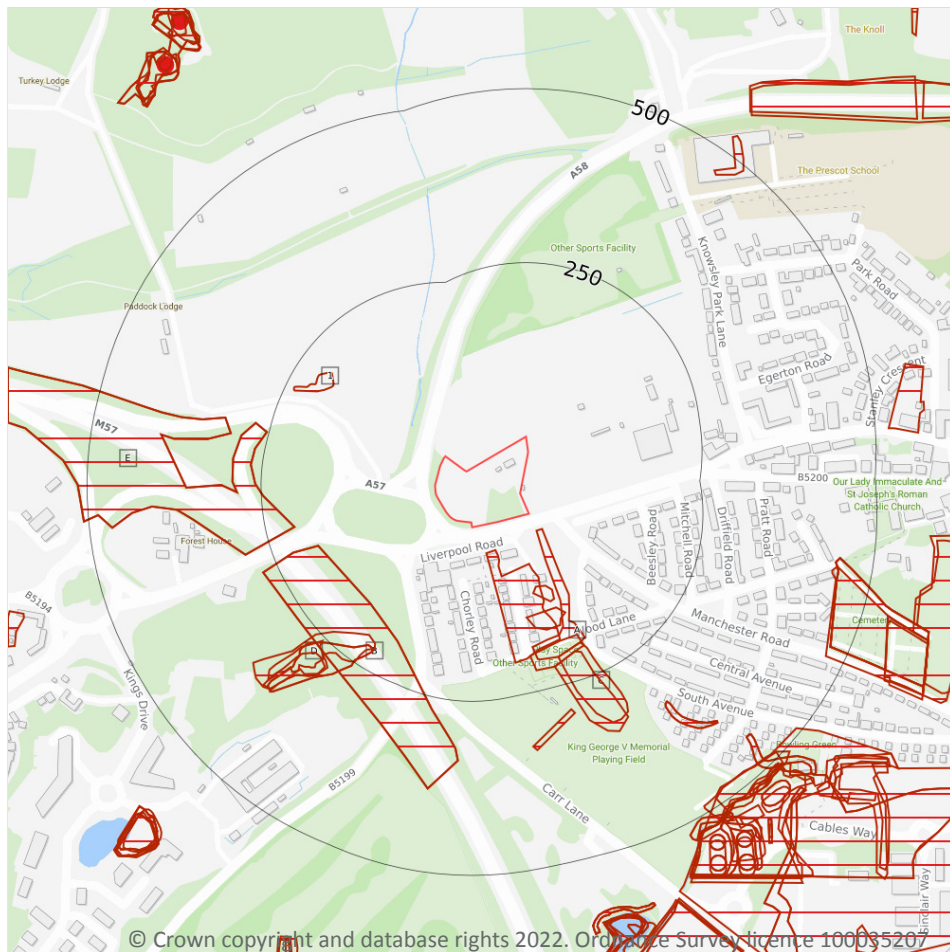
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 85**

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

15

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 86**

ID	Location	Land Use	Year of mapping	Mapping scale
A	27m SE	Unspecified Ground Workings	1955	1:10560
A	39m S	Colliery	1851	1:10560
A	104m S	Unspecified Heap	1966	1:10560
A	140m S	Unspecified Pit	1966	1:10560
B	168m SW	Cuttings	1975	1:10000
B	168m SW	Cuttings	1990	1:10000
A	187m S	Unspecified Heap	1950	1:10560
1	190m NW	Pond	1851	1:10560
C	199m S	Unspecified Pit	1955	1:10560
D	206m SW	Unspecified Quarry	1891	1:10560
C	208m S	Unspecified Pit	1950	1:10560
E	209m W	Cuttings	1975	1:10000
E	209m W	Cuttings	1990	1:10000
D	218m SW	Unspecified Quarry	1925	1:10560
D	218m SW	Unspecified Quarry	1906	1:10560

This data is sourced from Ordnance Survey/Groundsure.



18.4 Underground workings

Records within 1000m

14

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

Features are displayed on the Mining, ground workings and natural cavities map on **page 86**

ID	Location	Land Use	Year of mapping	Mapping scale
-	788m S	Unspecified Shaft	1891	1:10560
-	831m SE	Unspecified Old Shaft	1906	1:10560
-	831m SE	Unspecified Old Shaft	1925	1:10560
-	843m SE	Unspecified Old Shaft	1906	1:10560
-	845m SE	Unspecified Old Shaft	1925	1:10560
-	848m SE	Unspecified Old Shaft	1891	1:10560
-	855m SE	Unspecified Old Shaft	1891	1:10560
-	904m S	Unspecified Old Levels	1947	1:10560
-	904m S	Unspecified Old Levels	1925	1:10560
-	904m S	Old Trial Levels	1906	1:10560
-	921m S	Unspecified Old Level	1947	1:10560
-	975m S	Unspecified Old Levels	1947	1:10560
-	975m S	Unspecified Old Levels	1925	1:10560
-	975m S	Old Trial Levels	1906	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site

1

Areas which could be affected by past, current or future coal mining.

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.



18.10 Brine areas

Records on site	0
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The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

Records on site	0
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Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

An aerial map of a residential area. A red boundary outlines a specific plot of land. Two concentric circles are drawn around this plot, with the inner circle labeled '125' and the outer circle labeled '250'. The map shows various streets including Liverpool Road, Carr Lane, Wood Lane, South Avenue, Central Avenue, Manchester Road, Beesley Road, Mitchell Road, Duffield Road, Knowsley Park Lane, and A58. Other features include 'Other Sports Facility', 'Play Space', and 'BS199'. The map is overlaid with a grid of latitude and longitude coordinates.

 Greater than 30%
 Between 10% and 30%
 Between 5% and 10%
 Between 3% and 5%
 Between 1% and 3%
 Less than 1%

Records on site	1
-----------------	---

Features are displayed on the Radon map on **page 91**

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None**

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
18m SE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)**
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.



This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

5

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 93**

Location	Land Use	Year of mapping	Mapping scale
14m S	Tramway Sidings	1955	10560
26m S	Railway Sidings	1950	10560
26m S	Tramway Sidings	1938	10560
26m S	Tramway Sidings	1925	10560
27m S	Tramway Sidings	1925	10560

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.



21.6 Historical railways

Records within 250m**0**

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m**0**

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m**0**

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m**0**

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m**0**

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: <https://www.groundsure.com/terms-and-conditions-jan-2020/>.



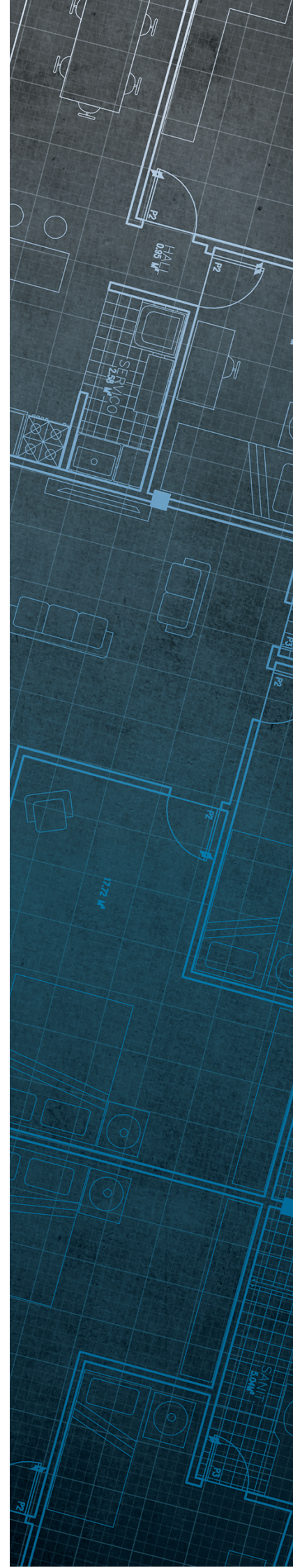


The Coal
Authority

Consultants Coal Mining Report

Dye House, Liverpool Road, Prescot,
L34 3lx
Merseyside

Date of enquiry:	11 August 2022
Date enquiry received:	11 August 2022
Issue date:	16 August 2022
Our reference:	51003304078001
Your reference:	GS-8974470



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

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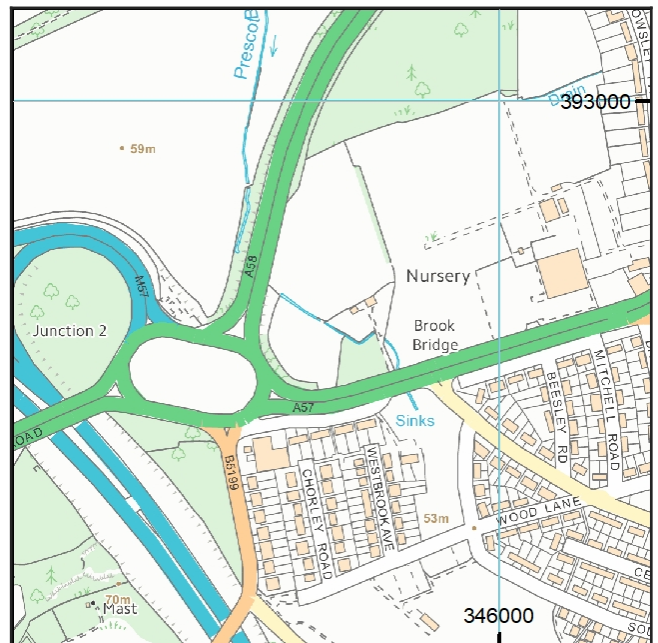
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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	345392-001	345861 392612		Coal	
Shaft	345392-004	345805 392625		Coal	
Shaft	345392-006	345902 392811	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 4.62 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-007	345932 392814	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.649 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-008	345943 392829	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.605 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-009	345936 392793	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.77 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-010	345936 392787	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.77 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-011	345962 392806	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.605 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-012	345969 392803	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.605 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-013	345981 392807	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 22.11 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-014	345954 392757	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 2.275 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-015	345970 392762	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.77 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-016	345785 392880	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 12.21 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-017	345792 392881	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 9 tonnes using a 12 to 1 PFA to OPC mix	Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	345392-019	345796 392889	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 16.1 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-021	345805 392891	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 3.13 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-022	345825 392887	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 3.839 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-024	345827 392898	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 4.136 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-025	345829 392892	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 2.376 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-026	345832 392883	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 3.454 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-027	345830 392898	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 4.162 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-028	345832 392892	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 4.224 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-029	345834 392887	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages	Coal	
Shaft	345392-030	345835 392884	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 4.224 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-031	345836 392881	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 6.424 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-032	345839 392882	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 4.442 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-033	345951 392801	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.77 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-034	345957 392805	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 0.605 tonnes using a 12 to 1 PFA to OPC mix	Coal	
Shaft	345392-035	345806 392814	Treated by Van Elle Ltd in 2021 by pressure grouting in 2m stages for a total grout intake of 35.2 tonnes using a 12 to 1 PFA to OPC mix	Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NW821	16820	PO0
-------	-------	-----

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Fault under or close to the property recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

Distance to site investigation (m)	Direction
Within	N/A
Within	N/A

See Section 4 for further information.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

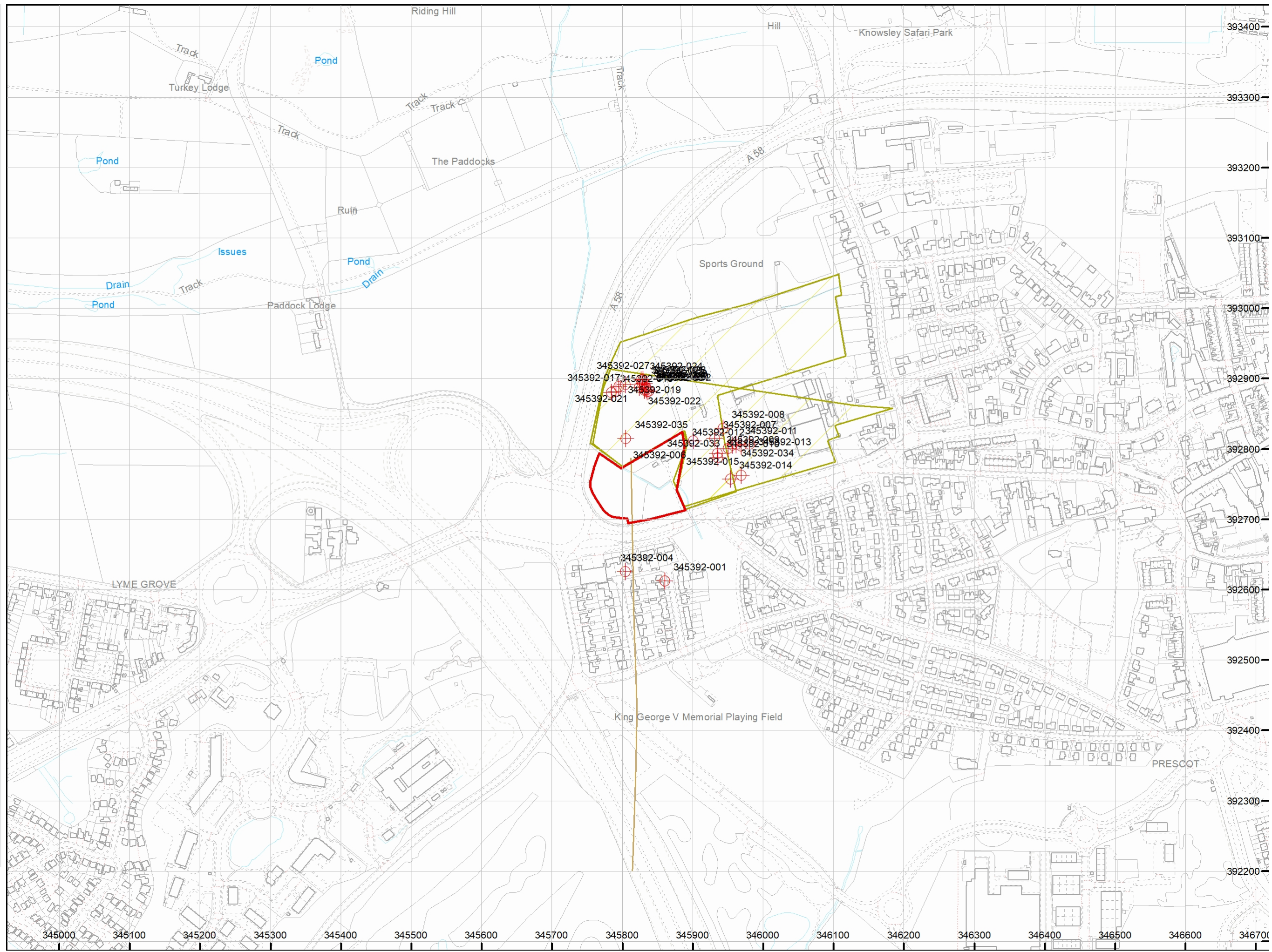
The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

- Approximate position of the enquiry boundary shown 
- Disused mine shaft 
- Geological faults 
- Site investigations 

How to contact us

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APPENDIX D

(i) Conceptual Model

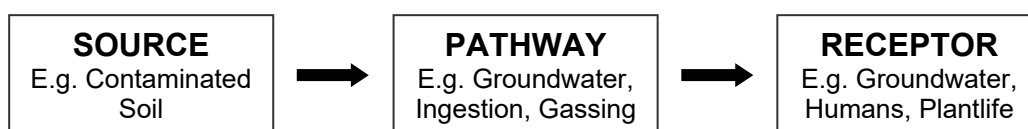
The report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

The assessment also aims to identify land which would be regarded as 'contaminated land' under the terms of the Environmental Protection Act 1990, Part IIa. This act includes a stricter test for contaminated land than that outlined above. Land is considered to be contaminated if either: the land is causing significant harm to people, ecosystems or infrastructure; or there is a significant possibility that such harm could be caused; or pollution of controlled waters is being, or is likely to be, caused.

The following situations are defined as being where harm is to be regarded as significant: chronic or quite toxic effect, serious injury or death to humans; irreversible or other adverse harm to the ecological system; substantial damage to or failure of buildings; death of, or disease or other physical damage affecting, livestock or crops; pollution of controlled waters.

The risk assessment uses a 'Source-Pathway-Receptor' methodology for assessing whether a source of contamination could potentially lead to harmful consequences. This means that there needs to be a pollutant linkage from source to receptor for harm to be caused, this linkage consisting of: a source of pollution; a pathway for the pollutant to move along; a receptor that is affected by the pollutant.

As an example, the pollutant source could be an identified leak of oil or an area of dumped waste.



The pathways could include transport of the contaminant by groundwater, surface water, windblown dust, or vapours, and for human receptors will include the means by which contaminants enter the body, for example skin contact, ingestion and inhalation.

Receptors include people, other living organisms, the built environment and groundwater and surface waters (these latter two also being contaminant pathways).

The source-pathway-receptor methodology relationship allows an assessment of the environmental risk to be determined, based on the nature of the source, the degree of exposure of the receptor to the source and the sensitivity of the receptor.

This section of the report is based on the information set out in the previous sections of the report and should not be read independently of such sections.

Initial Conceptual Model

From the available information the preliminary conceptual model is visualised as follows:

Target (Receptor)	POTENTIAL SOURCE-PATHWAY LINKAGE
Site Users / Residents	Inhalation of soil gas, odours or dust.
	Ingestion of, and skin contact with, contaminated soil.
	Ingestion of contaminants in vegetables etc. or in soils adhering to vegetables, etc.
Construction/ Maintenance Workers.	Inhalation of soil gas, odours or dust.
	Ingestion of, and skin contact with, contaminated soil
Plants	Adverse effects on growth caused by presence of contaminants in soil
Buildings and Structures	Flow of ground gas into buildings. Asphyxiation, toxicity, explosion and fire hazards
	Sulphate attack of foundations
	Hydrocarbons penetrating plastic water supply pipes
Groundwater	Migration of soluble contaminants into groundwater on or off site. Migration of oils into groundwater on or off site.
Surface water	Migration of soluble contaminants and/or direct run-off of contaminants. Migration of oils into groundwater on or off site.

Initial Environmental Risk Assessment - General

It is accepted that an environmental risk assessment can be based on a source-pathway-target model. An examination is carried out as to whether a target will be at risk from a contamination source, that a source exists, and whether there are any pathways (routes of exposure) which might actually link the source to the target.

Environmental risk assessments rely heavily on numerical trigger concentrations or guidelines because exposure of targets to contamination is difficult to quantify directly. Quantification of risk is therefore mainly undertaken for general scenarios in order to derive trigger levels. These are derived for various contaminants for particular targets and routes of exposure. An example of a sensitive target would be users of a domestic back garden, where routes of exposure might be skin contact, dust inhalation, direct ingestion and indirect ingestion via cultivation and consumption of fruit and vegetables. In March 2002, the first parts of the new CLEA risk assessment guidance were released by DEFRA/Environment Agency.

The risk assessment approach is an extension of the 'fit for use' concept whereby land is cleaned up to a standard fit for the proposed use, that is, so all remaining risks are acceptable. However, as well as being 'fit for use', the environmental risk assessment approach also addresses the soil and water environment so that these are also safeguarded where necessary. For example if a site was contaminated with heavy metals and the development comprised the proposed construction of hard standings and buildings only, the fit-for-use approach might require no remediation for the site. However, consideration of the wider environment needs to address whether groundwater is being contaminated, and if so whether remediation is required for this reason.

The following classification presented by CIRIA has been used in the assessment of risk:

Estimation of risk from consideration of magnitude, consequences and probabilities				
Probability	Consequences			
	Severe	Moderate	Mild	Minor
High	Very high	High	Moderate	Moderate / Low
Medium	High	Moderate	Moderate / Low	Low
Low	Moderate	Moderate / Low	Low	Very Low
Unlikely	Moderate / Low	Low	Very Low	Very Low

Reference: Contaminated Land Risk Management; A Guide to Good Practice, CIRIA C552:2001

APPENDIX E

(i) Notes on Limitations

The desk study report includes examination and provision of historical maps and an environmental database search covering geology, hydrogeology, historical, land use, water abstractions, groundwater source protection zones, landfill sites, radon, trade directory entries, petrol filling stations and nature reserves for the site and surrounding area. A Coal Authority Report has been obtained as part of the investigation.

This report does not consider ecological impacts (e.g. bats) or botanical risks (e.g. Japanese knotweed). It is recommended that these are considered as part of the assessment of development constraints for the site.

The assessment and judgements given in this report are directed by both the finite data on which they are based and the proposed works to which they are addressed. The data essentially comprised a study of available documented information from various sources together with discussions with relevant authorities and other interested parties. There may also be circumstances at the site that are not documented. The information reviewed is not exhaustive and has been accepted in good faith as providing representative and true data pertaining to site conditions. If additional information becomes available which might impact our environmental conclusions, we request the opportunity to review the information, reassess the potential concerns and modify our opinion if warranted.

It should be noted that any risks identified in this report are perceived risks based on the available information. Actual risks can only be assessed following a physical investigation of the site.

This report was prepared by Betts Geo Environmental Ltd for the sole and exclusive use of the client specified at the beginning of this report with response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

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