



Proposed Development at Hollingworth Road and Rakewood Road, Littleborough

Environmental Statement

Volume 4: Rakewood Road Land Parcel Appendices

On behalf of **Bloor Homes North West**



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Appendix E Geo-Environmental Desk Study and Coal Mining Risk Assessment

Bloor Homes
Geo-Environmental Desk Study
&
Coal Mining Risk Assessment
Report
For
Rakewood Road
Littleborough

November 2023

REPORT NO: 23BLH039/DS&CMRA

- *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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DOCUMENT ISSUE RECORD

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APPENDIX F

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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 East of Rakewood Road, 1km to the South of Littleborough, Greater Manchester. The closest postcode is OL15 0AQ. The coordinates on the British National Grid CRS are 394087, 415274. The proposed site is approximately 2.4 hectares in total and lies at an elevation of 165m AOD.

Proposed Development

The proposed development is an extension to an existing carpark.

Site Description

On Site

The site is accessed from the Hollingworth Country Park access road. It occupies a field, with Hollingworth Country Park to the Northwest. Hollingworth Brook separates the site from farmland on Northeast and Southeast boundaries and Rakewood Road and an embankment separates the site from Hollingworth Lake on Southwest boundary.

The site topography is slightly undulating with a slight dip towards the Northwest boundary. The ground in this area is marshy underfoot. The whole site is fenced with wire fencing topped with barbed wire.

Ground cover is grass and self-seeded shrubs exist along the Northwest boundary.

There are 3 No. manhole covers on raised brickwork close to the Northwest boundary, a hole in the ground was noted close to the covers and rapid flowing water could be heard below ground level. Plastic ventilation ducts are visible on the embankment just outside the Northwest boundary in the landfill area.

A capped shaft and water filled depression were noted in the adjacent field to the Northeast of the site, this field was not accessible. A raised brick circle topped with grass and a central tree was noted within the Hollingworth Country Park children's play area which could be a capped shaft.

An orange/brown coloured water and white foam was noted in a watercourse in the Hollingworth Country Park area, this flows into Hollingworth Brook just outside the site boundary.

Site History

On Site

The earliest available map is the 1851 1:10,560 which shows the site as fields with Hollingworth Brook on the Southeastern and Northeastern side. A coal pit is depicted to the West of the site. By the time of the 1891 map shows the land as three fields. The brook appears to have been straightened and flows North. The site has not changed since these early maps, however the area to the Northwest of the site was utilised as a rubbish dump from the late 1930's until at least the 1960's and a coal shaft is depicted to the North. The 1989 1:10,000 map shows the carpark area for Hollingworth Country Park to the Northwest which has been wooded.

Published Geology

The BGS map shows the geology (1:10,000) beneath the site as the following:

- Made Ground adjacent to NW and SW, possibly overlapping onto site.
- Majority of site - Alluvial. Glacial Till on the East of the site possibly beneath alluvium.
- Majority of site - Middle Pennine Coal Measures Formation – Siltstone, Sandstone and Coal Seams
- SW 3rd of site - Milnrow Sandstone
- NW and SE sides of site – Great Arc Sandstone

Coal Mining

There is high-risk of unrecorded shallow workings on the site. The site lies within The Coal Authorities Coal Mining Reporting Area and the Coal Authority Interactive Viewer shows that it is also within Development High Risk Area. A Consultants Coal Mining Report has been acquired for the site which records historical working of the Lower Mountain Coal at 81m beneath the property, last worked in 1900 (Brearley Colliery). These workings are unlikely to pose a risk to future development on the site due

to their age and depth which is outside the zone of influence of the surface. There are three mine entries within 100m of the site boundary, the closest being 37m to the NE thought to be a capped with a structure in Hollingworth Country Park Car Park. Another capped shaft was identified approximately 47m NE of the site. The Coal Authority plot has two mapped sub-crops of the Upper Foot and Upper Mountain Coal within the site boundary, which vary slightly from those mapped on the BGS 1:10,000 mapping. There is also some discrepancy of the location of the shafts between the historical mapping, as well as conflicting dip information for the bedding, therefore un-reliable. Although it is thought unlikely that there are unmapped shafts on site, the presence of unrecorded shallow workings (<30m bgl) in the Northeastern 2/3rds of the site (North of the fault against the Milnrow Sandstone) cannot be ruled out, therefore a ground investigation including three rotary holes to prove or disprove the presence of historical workings and to establish the depth and dip of coal seams is advised.

Summary of Environmental Data

Possible Contamination Sources;

- Current Site Use – Agricultural, pastureland – Significant Risk; Unlikely.
- Historical Site Use – Agricultural, pastureland, straightening of brook– Significant Risk; Unlikely.
- Landfill –Adjacent to NW– Significant Risk; Possible localised on site boundary.
- Made Ground –Adjacent to SW from reservoir construction– Significant Risk; Unlikely.
- Sub- Station and Water Tower–South and West – Significant Risk; Unlikely.
- Coal Mining- Onsite– Significant Risk; Possible.

Pathways and Receptors

- Aquifers – Below Site – Significant Risk; Unlikely.
- Hollingworth Brook – Adjacent to NE and SE - Significant Risk; Possible
- Site End Users – Onsite – Significant Risk; Possible localised
- Construction Workers – Onsite – Significant Risk; Possible localised.
- Adjacent Land Uses (Streams, drains, and residential) – Surrounding Site – Significant Risk; Unlikely.

Radon Protection

The Groundsure data shows that 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. No radon protection measures are required.

Qualitative Risk Assessment:

In this qualitative risk assessment, a generally Low - Moderate risk for contamination and ground gas. An SI is required to confirm the risk potential and design remedial actions where necessary.

Proposed Ground Investigation Scope:

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

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

- Locate the onsite drain and outfall into the Hollingworth Brook.
- Water testing of Hollingworth Brook and drain to assess the baseline for contamination.
- 3 Rotary Holes in the Northeastern side of the site to 30m to prove or disprove existence of workings.
- 1 Rotary hole to the Southwest of the fault to determine its position.
- 1 day trial pitting and CBRs for hardstanding.
- 6 No. soil samples taken for chemical assessment, specifically in the proposed access area from upper existing carpark - 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.

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 Bloor Homes. The purpose of the work was to carry out a Desk Study to provide preliminary geotechnical and contamination risk assessment information, as well as evaluate available geological, mining, and historical data to assess the potential for the site to be affected by underground mining for the construction of an extended carpark area. The site red edge can be seen below;



2.2 Site Location

The site is located East of Rakewood Road, 1km to the South of Littleborough, Greater Manchester. The closest postcode is OL15 0AQ. The coordinates on the British National Grid CRS are 394087, 415274. The proposed site is approximately 2.4 hectares in total and lies at an elevation of 165m AOD. See Site Location Plan in Appendix A.

2.3 Site Description

2.3.1 On Site

The site was visited by a Geo Environmental Engineer on 21st November 2023.

The site is accessed from the Hollingworth Country Park access road (off Rakewood Road), there is a padlocked gate at the access point that leads to a down to sloping grassed laneway (note that the gate and laneway are not within the site boundary line).

The site occupies a field (historically 2 x fields), with Hollingworth Country Park to the Northwest, Hollingworth Brook separates the site from farmland on Northeast and Southeast boundaries and Rakewood Road and an embankment separates the site from Hollingworth Lake on Southwest boundary.

The site topography is slightly undulating with a slight dip towards the Northwest boundary. The ground in this area is marshy underfoot. The whole site is fenced with wire fencing topped with barbed wire.

Ground cover is grass and self-seeded shrubs exist along the Northwest boundary.

There are 3No. manhole covers on raised brickwork close to the Northwest boundary, a hole in the ground was noted close to the covers and rapid flowing water could be heard below ground level. Plastic ventilation ducts are visible on the embankment just outside the Northwest boundary in the landfill area (as determined from historical mapping).

A capped shaft (identified during this desk study) and water filled depression were noted in the adjacent field to the Northeast of the site, this field was not accessible. A raised brick circle topped with grass and a central tree was noted within the Hollingworth Country Park children's play area which could be a capped shaft.

An orange/brown coloured water and white foam was noted in a watercourse in the Hollingworth Country Park area, this flows into Hollingworth Brook just outside the site boundary. (Photographs in Appendix A).

2.3.2 Surrounding Area

Surrounding land uses for the site are as follows:

- North – Carpark, woodland and agricultural land
- West –Carpark, woodland and agricultural land
- South – Hollingworth Lake
- East – Agricultural land, canal drain and Hollingworth

3 SITE HISTORY

3.1 Site History from Ordnance Survey Maps

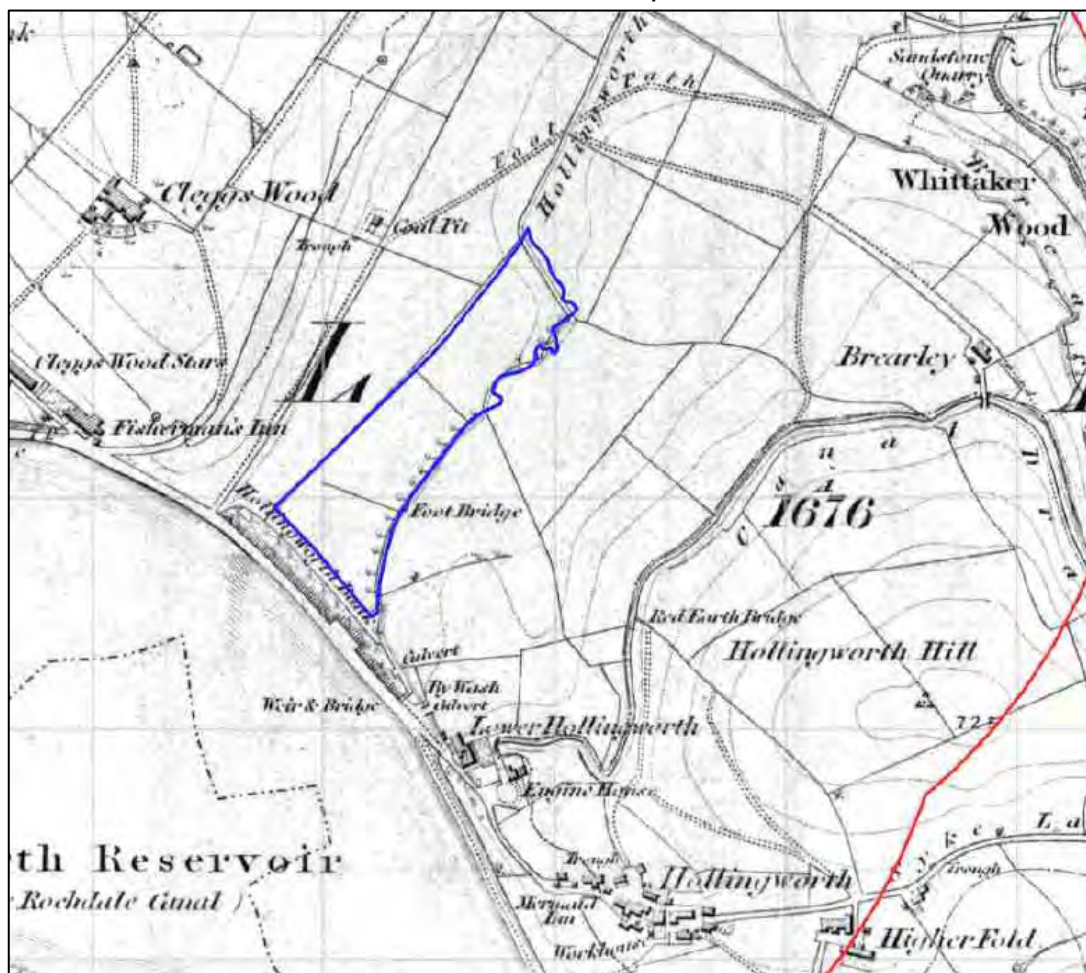
A search of available historic maps was undertaken to establish the land use history of the site. Extracts of the maps are discussed below and can be found in full in Appendix B of this report. All maps are Ordnance Survey unless otherwise stated. All distances quoted on OS maps are taken from the site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

3.2 Summary of Site History

3.2.1 On Site

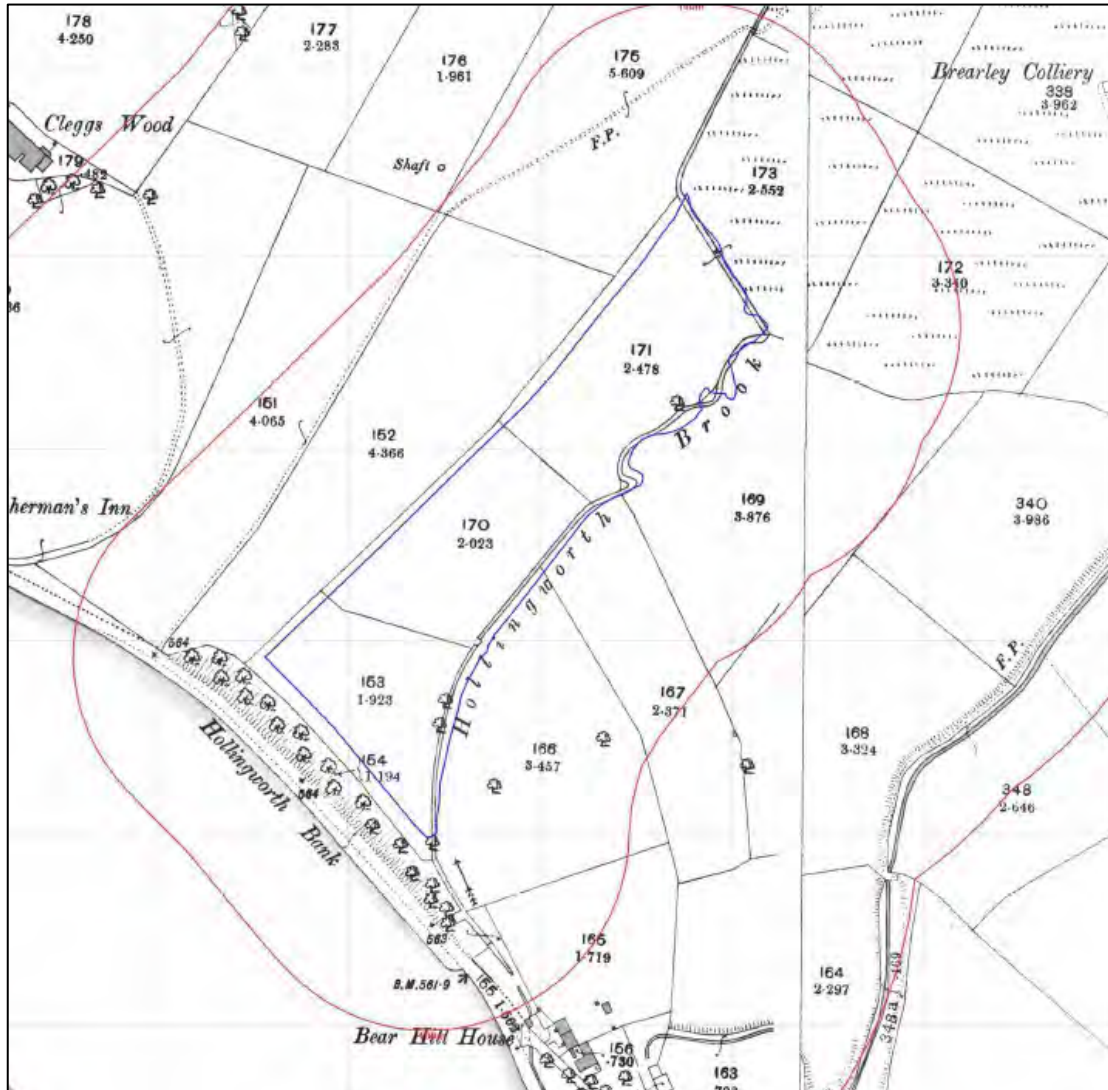
The earliest available map is the 1851 1:10,560 which shows the site as fields with Hollingworth Brook on the Southeastern and Northeastern side. A coal pit is depicted to the West of the site. Extract below:

1851 1:10,560 Map



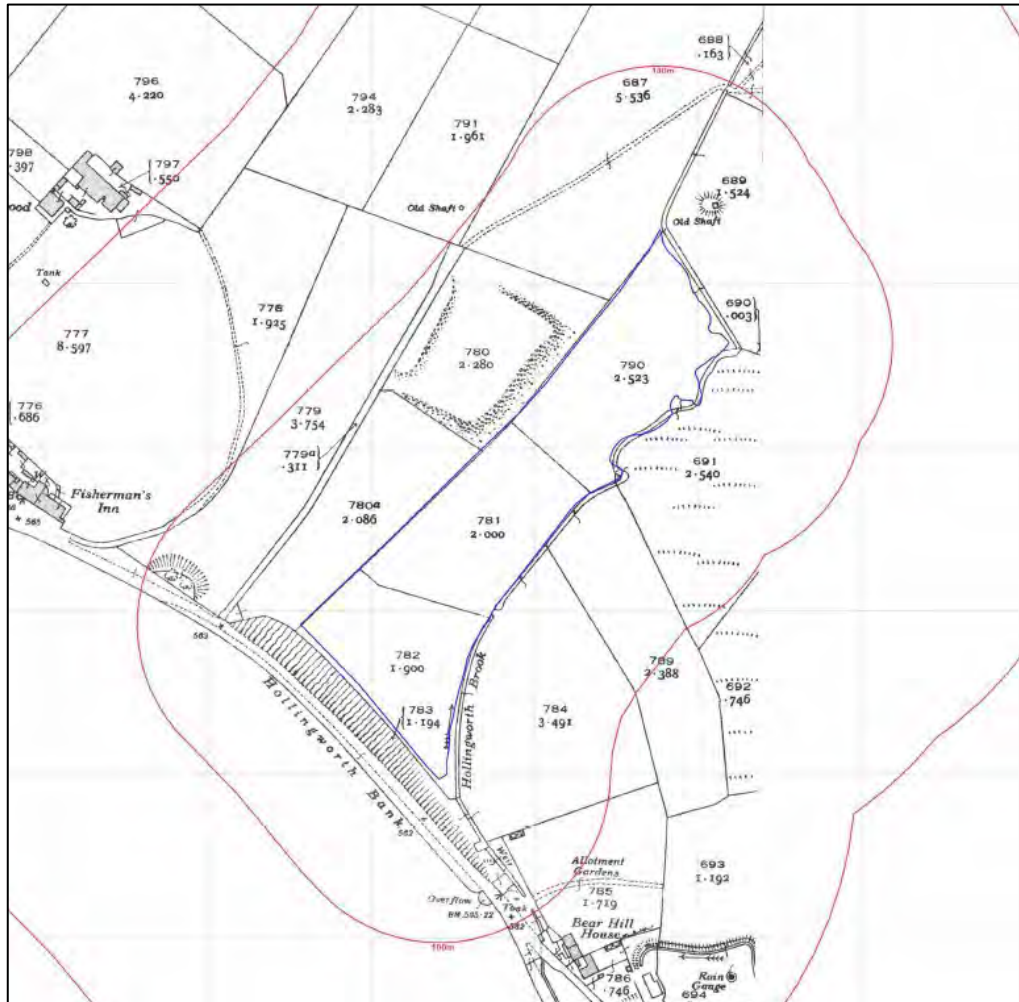
By the time of the 1891 (1:2,000 map) shows the land as three fields. The brook appears to have been straightened and flows North. Extract below.

1891 1:10,560 Map



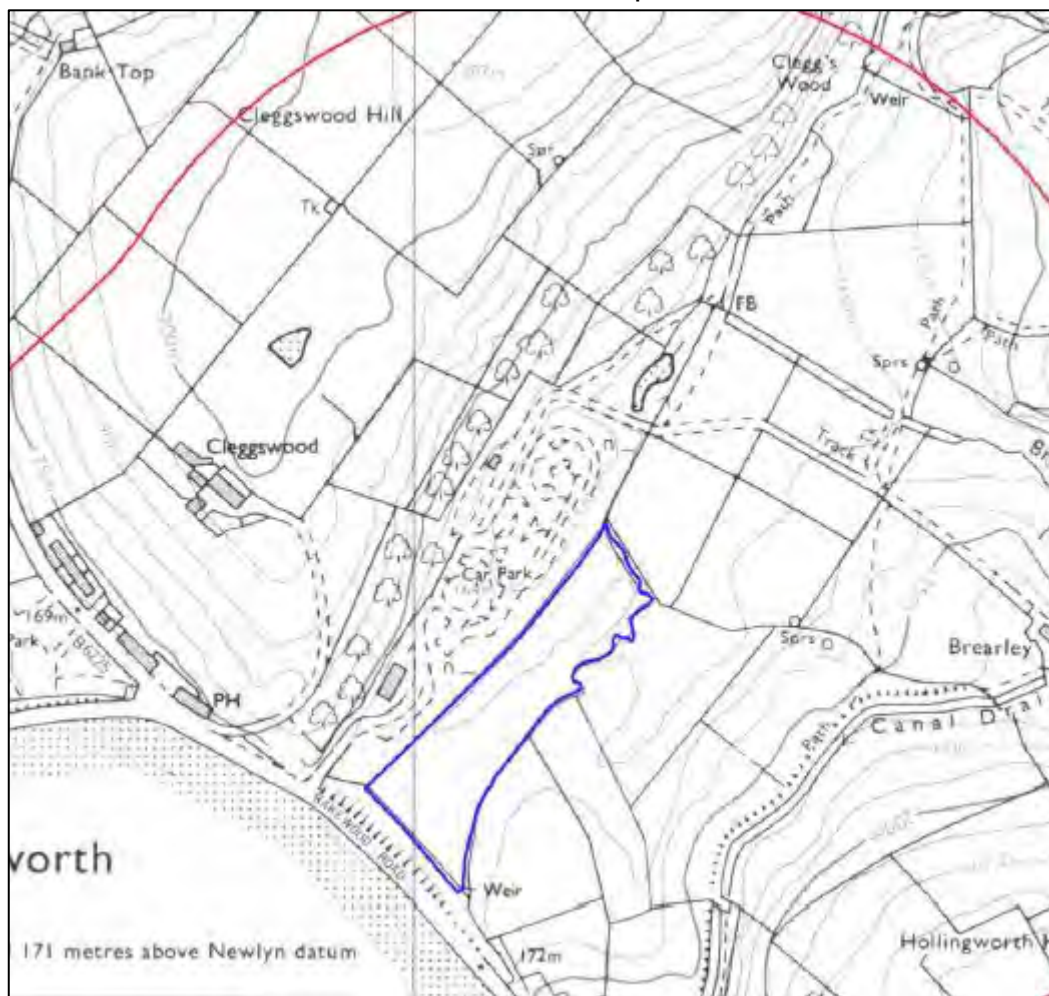
The site has not changed since these early maps, however the area to the Northwest of the site was utilised as a rubbish dump from the late 1930's until at least the 1960's and a coal shaft is depicted to the North. Extract below.

1938 1:2,500 OS Map



The 1989 1:10,000 map shows the carpark area for Hollingworth Country Park to the Northwest which has been wooded. Extract below.

1989 1:10,000 Map



3.2.2 Surrounding Area

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

Date	Land Uses
1851	Adjacent to SW – Embankment to Hollingworth Reservoir 106m Northeast – Coal Pit (Not on 1891 map) 174m South – Engine House 337m NE – Sandstone Quarry 384m SW - Nursery
1891/1892	241m NE – Brearley Colliery 192m South – Quarry 500-750m East – Whittaker Shaft and Sheep Bank Colliery
1908-1911	21m NE – Refuse Heap / Shaft 17m NE – Old Coal Shafts 61-71m West – Unspecified Pit / Ground Workings 200m North – Cricket Ground 200m East – Hollingworth Brook straightened. 300m SE- Tank 370m North - Tank
1928 -1930	250m SE – Allotment Gardens 480m North – Old Level 300m West - Tank
1954	No significant changes
1968	Adjacent to site to West– Refuse Heap
1972/1979	Adjacent to site to West– Refuse Heap / Made ground. Adjacent to site to West – Embankment and small wooded area 500m West – Expansion of residential area at Hollingworth
1989	Adjacent to site to West – Wooded area expanded with carparking Work carried out on Lake embankments in 1984
2001	No significant Change
2010	No significant Change
2023	No significant Change

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 and geological maps located in Appendix C unless otherwise stated. This report should be referred to for full details.

4.1 Published Geology

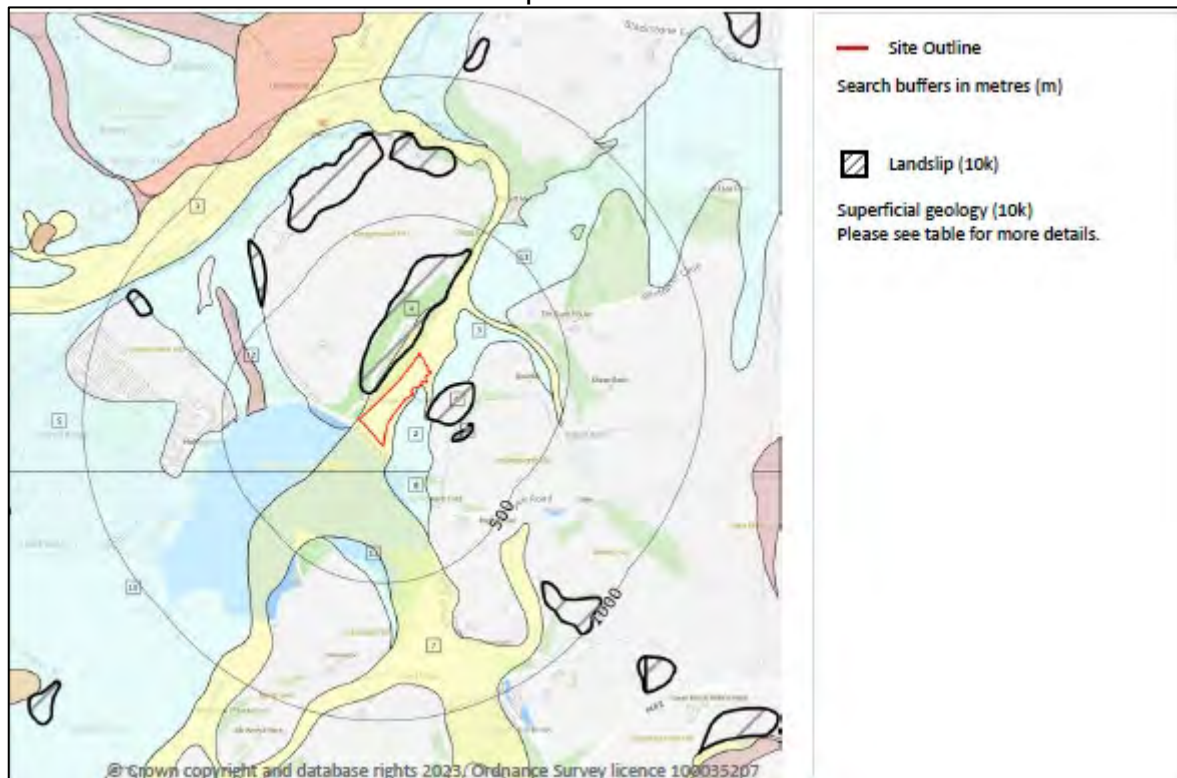
The documented geology of the site is summarised on the British Geological Survey map from GeoIndex website and Groundsure Data, with further site-specific details detailed from historical and recent geological maps available on the British Geological Society website. (See section 9)

Geology	Artificial Ground & Land Slip	Drift	Solid
1:10,000	Made ground adjacent to NW and SW; possibly overlaps onto site.	Majority of Site - Alluvial - Sand, silt and clay on the West side. Glacial Till to East of site possibly beneath alluvial material	Majority of Site Pennine Lower Coal Measures Formation – Mudstone, Siltstone, Sandstone and Coal Seams SW 1/3 rd of site Milnrow Sandstone – Sandstone NW and SE sides of site - Great Arc Sandstone

Artificial Ground

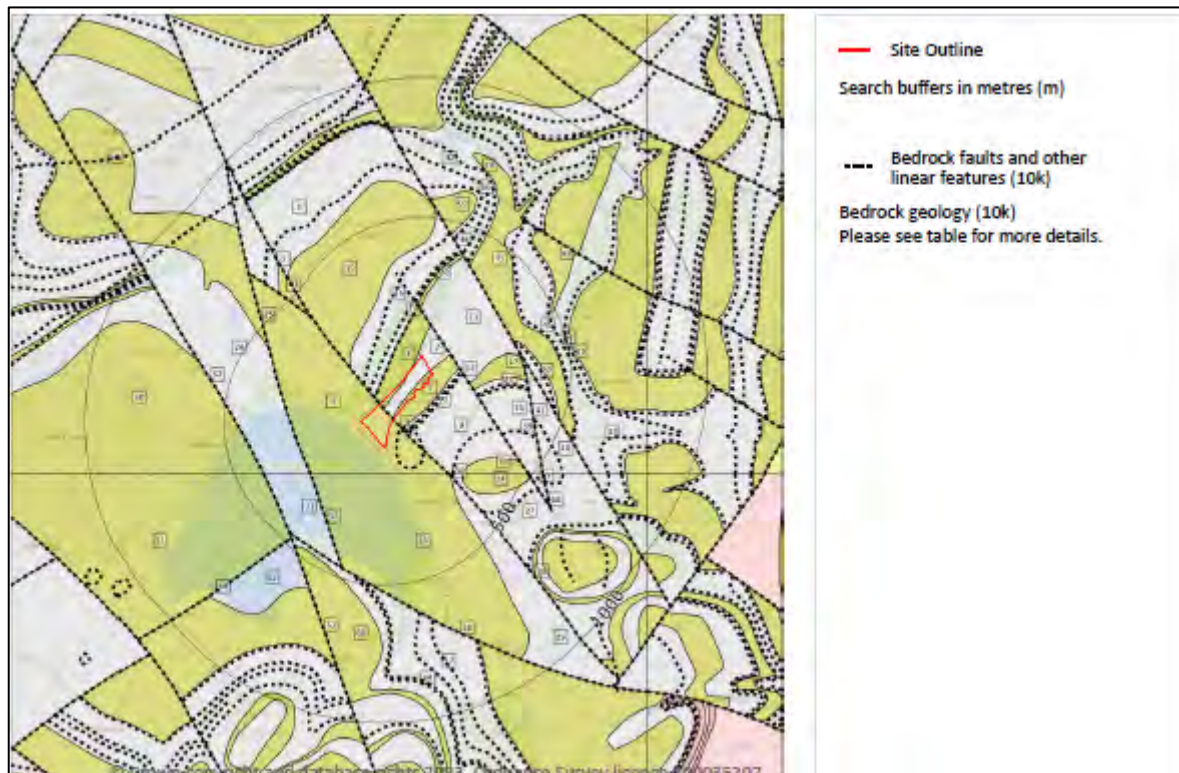


Superficial Cover



ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
2	1m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	22m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

Bedrock



ID	Location	LEX Code	Description	Rock age
1	On site	GAS-SDST	Great Arc Sandstone - Sandstone	Langsettian Sub-age
2	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
3	On site	GAS-SDST	Great Arc Sandstone - Sandstone	Langsettian Sub-age
4	On site	MLRS-SDST	Milnrow Sandstone - Sandstone	Langsettian Sub-age
6	29m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

4.1.1 Faults and Coal Seams

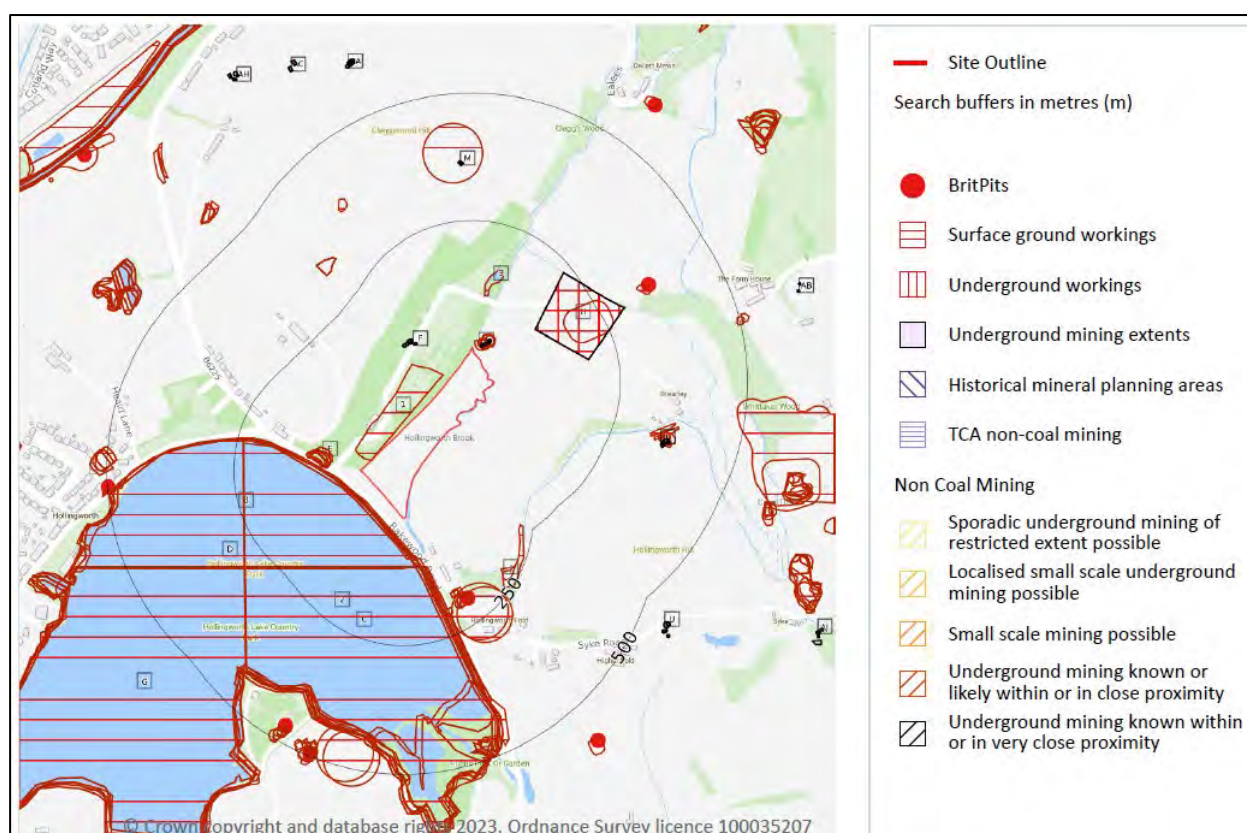
There is an inferred normal NW-SE trending fault on site, separating the Milnrow Sandstones to the Southwest from the Pennine Coal Measures to the Northeast. There are coal seams mapped 29m to the West and 60m South and a kettle hole 38m to the South. (Further details in section 8).

4.1.2 Historic Borehole Records

There are no BGS Boreholes within 250m of the site.

4.2 Geological Features

There are a number of ground workings recorded within 250 m of site; further details are provided in the sections below.



4.2.1 BritPits

There is a British Pit recorded 200m South of the site under the name of Bear Hill House Quarry which was a sandstone operation.

4.2.2 Surface Workings

There are forty-seven (47 No.) records of surface ground workings recorded within 250m of the site. The closest is a refuse heap mapped in 1968. Mapping from 1938 also shows a landfill in this area. The refuse heap was adjacent to the West and may have overlapped onto the site. Also the refuse heap mapped

between 1908 7-28m m to the NE could be a spoil heap for a shaft. Other features include Hollingworth Lake 36m SW, Unspecified pits, a Pond, Colliery and Quarries. Extract below.

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Refuse Heap	1968	1:10560
A	7m NE	Refuse Heap	1908	1:10560
A	13m NE	Unspecified Heap	1928	1:10560
A	16m NE	Unspecified Heap	1938	1:10560
A	21m NE	Refuse Heap	1911	1:10560
A	21m NE	Refuse Heap	1911	1:10560
A	21m NE	Refuse Heap	1911	1:10560
A	28m NE	Unspecified Heap	1949	1:10560
2	33m SW	Lake	1890	1:10560
B	36m SW	Lake	1989	1:10000

4.2.3 Underground Workings

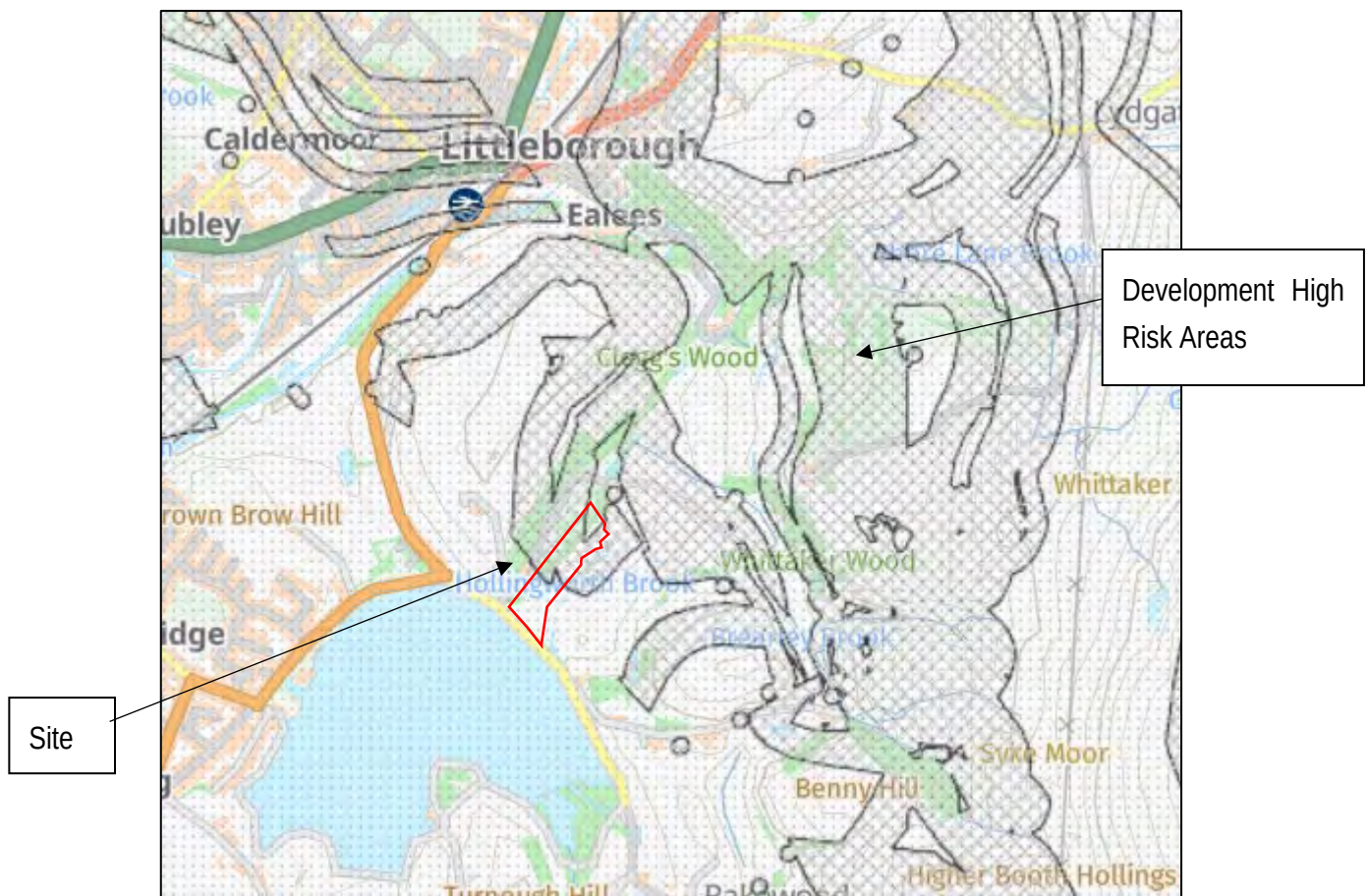
There are seventy-seven (77No.) records of underground workings within 250m of the site. The closest are old coal shafts mapped 17m-36m to NE between 1908 and 1949. Note this could be associated with “refuse heap” in Surface Workings section above. Others include old shafts and a colliery. Extract below.

ID	Location	Land Use	Year of mapping	Mapping scale
A	17m NE	Old Coal Shafts	1908	1:10560
A	17m NE	Unspecified Old Shafts	1928	1:10560
A	24m NE	Unspecified Old Shafts	1938	1:10560
A	32m NE	Old Coal Shafts	1911	1:10560
A	32m NE	Unspecified Disused Shaft	1976	1:10000
A	32m NE	Unspecified Disused Shaft	1968	1:10560
A	36m NE	Unspecified Old Shafts	1949	1:10560
F	93m N	Unspecified Shaft	1892	1:10560
F	102m N	Unspecified Disused Shaft	1976	1:10000

4.2.4 Coal Mining

The site lies within The Coal Authorities Coal Mining Reporting Area and the Coal Authority Interactive Viewer (Planning Option) shows that it is also within Development High Risk Area. A Coal Risk Assessment examines these in more detail in section 8. Extract overleaf:

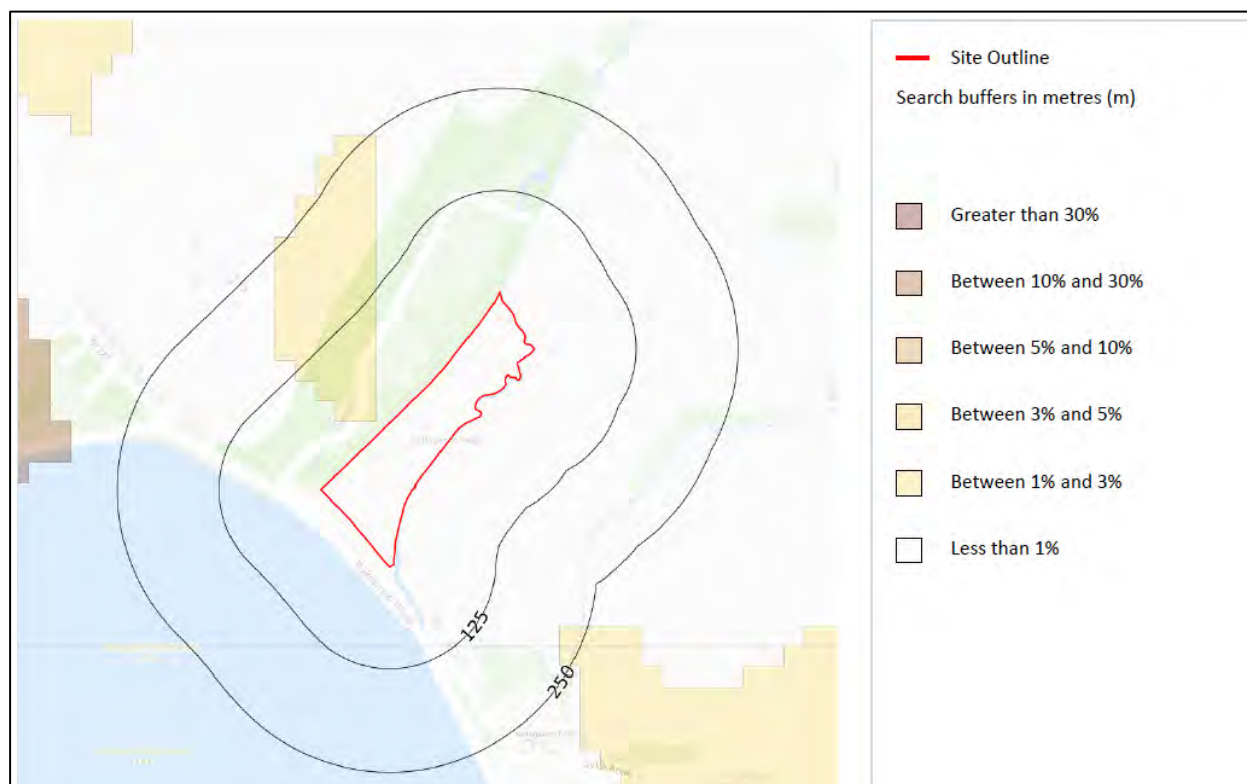
Coal Authority Interactive Viewer



4.2.5 Non-Coal Mining

There no records of Non-Coal Mining within 250m of the site.

4.3 Radon



The Groundsure data shows that 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.

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	-	4	4
Pollutant Release to Surface Waters (Red List Discharge Consents)	-	-	-
Pollution Incidents	-	-	1
Groundwater Abstraction Licences	-	-	-
Surface Water Abstraction Licences	-	-	-
Potable Water Abstraction Licences	-	-	-
Source Protection Zones	-	-	-
Groundwater Vulnerability & Soil Leaching Potential	Identified within 50m of site		
Surface Water Features	1	8	Not Searched

4.4.1 Licenced Discharges

There are four (4No) records for licenced discharges into controlled waters within 250 m of site. The closest being treated sewage discharges from 1 & 2 Bearhill 86m South of the site into Hollingworth Lake. Extract below.

ID	Location	Address	Details	
1	86m S	1 & 2 BEARHILL, RAKEWOOD RD, HOLLINGWORTH LAKE, LITTLEBOROUGH, LANCASHIRE, OL15 0AQ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/690 Permit Version: 1 Receiving Water: UNKNOWN	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 06/09/1963 Effective Date: 06/09/1963 Revocation Date: -
A	153m SE	HOLLINGWORTH LAKE VISITORS CENTRE, HOLLINGWORTH LAKE COUNTY PARK, RAKEWOOD ROAD, LITTLEBOROUGH, ROCHDALE, LANCASHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016990310 Permit Version: 2 Receiving Water: HOLLINGWORTH BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 31/10/1983 Revocation Date: -

4.4.2 Surface Water Features

There are eighteen (18No.) surface water features within 250m, the closest records are for Hollingworth Brook on site which runs north along Southeastern and Northeastern boundaries and appears to have been straightened. Hollingworth Lake is the next closest water feature separated from the site by an embankment adjacent to the Southwest.



ID	Location	Type of water feature	Ground level	Permanence	Name
2	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
3	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
C	87m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
C	87m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Lake

4.4.3 Hydrogeology

- Superficial deposits of alluvium (clay, silt, sand and gravel are recorded on site with Glacial Till 1m to the Northeast (and possibly beneath the alluvium) are classified as a Secondary A Aquifer with a mixed flow and a low to very high permeability.
- The bedrock deposits are Pennine Lower Coal Measures including the separately mapped sandstone units are classified also as a Secondary A Aquifer with a fracture flow, high to moderate permeability.
- There is a stream on site and Hollingworth Lake adjacent to the Southwest which flows Northeast.
- The overflow from Hollingworth is known to flow North towards River Road.
- Groundwater vulnerability is classified as low for the superficial deposits and medium for the bedrock. The leaching class is low.
- The site is not within a Source Protection Zone
- The site is not within a flood zone and has a low risk of flooding from groundwater. There is a slight risk of flooding off the embankment to the Northwest.

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	-	1	2	-
Current or Recent Petrol Stations	-	-	-	-
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)	-	-	-	-
License Pollutant Release	-	-	-	-
Radioactive Substance Authorisations	-	-	-	-
Pollutant Release to Surface Waters	-	-	-	-
Pollutant Release to Public Sewer	-	-	-	-
List 1 & 2 Dangerous Substances	-	-	-	-
Pollution Inventory Substances	-	-	-	-
Pollution Inventory Waste Transfers	-	-	-	-
Pollution Inventory Radioactive Waste	-	-	-	-
Waste and Landfill				
Active or recent landfill (EA/NRW)	-	-	-	-
Historical Landfill (BGS Records)	-	-	1	-
Historic Landfill (LA)	-	-	-	-
Historic Landfill (EA/ NRW)	1	-	-	-
Historical Waste Sites	-	-	-	1
Licensed Waste Sites (EA / NRW)	-	-	-	-
Waste Exemptions	-	-	-	-
Past Land Use				
Historical Industrial Land Uses	1	14	37	59
Historical Tanks	-	-	2	19

Historical Energy Features	-	-	1	-
Historical Petrol Stations	-	-	-	-
Historical Garages	-	-	-	-
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	-	-	-	-

5.1 Current Industrial Land Use

5.1.1 Recent Industrial Land Uses

There are two (2 No.) entries for recent industrial land uses within 250m of site. The closest is a water tower 106m South. The other is an Electricity sub-station. Extract below.

ID	Location	Company	Address	Activity	Category
2	106m S	Water Tower	Greater Manchester, OL15	Water Pumping Stations	Industrial Features
3	217m W	Electricity Sub Station	Greater Manchester, OL15	Electrical Features	Infrastructure and Facilities

5.2 Waste and Landfill

5.2.1 Historical Landfill (BGS records)

There is one (1 No.) record for an historical waste site within 250 m of site which refers to a site 102m North. Extract below:

ID	Location	Address	BGS Number	Risk	Waste Type
2	102m N	Hollingworth Lake, Rakewood Road, Littleborough	498	No risk to aquifer	N/A

5.2.2 Historical Landfill (EA/NRW records)

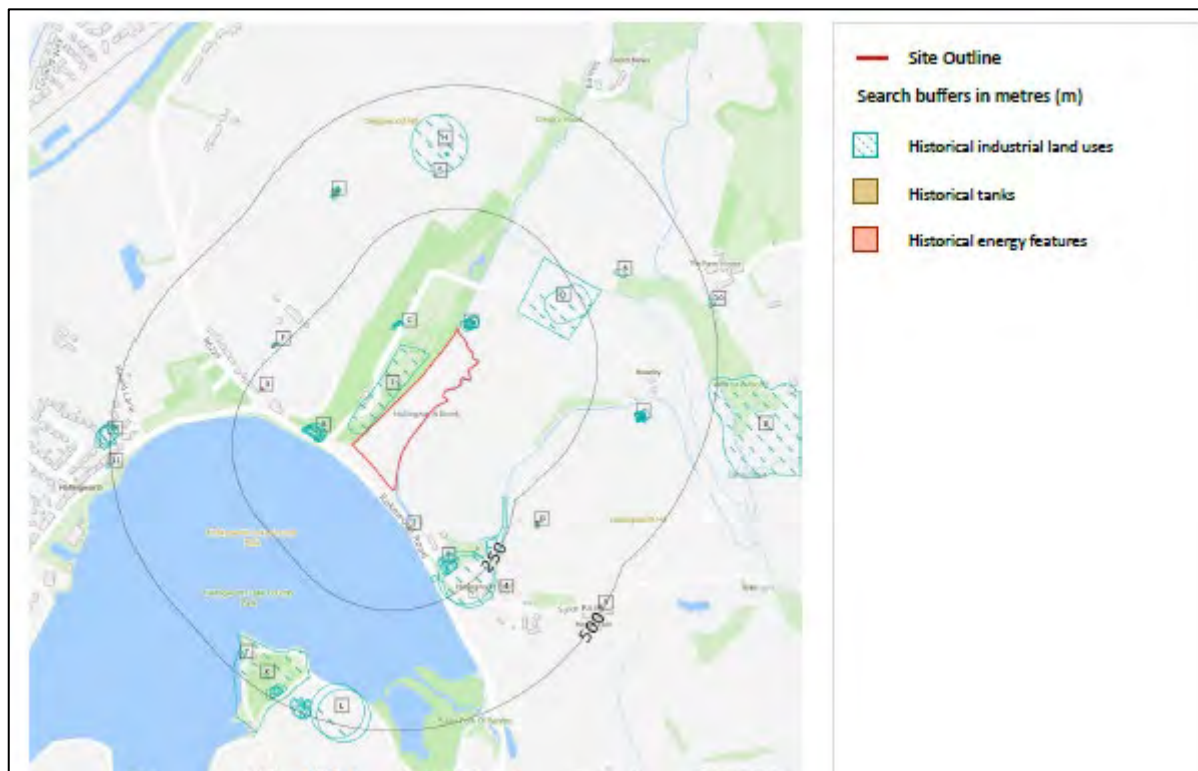
There is one (1 No.) record for an historical landfill for commercial and household waste recorded as being on site in 1932. The OS maps appear to show the landfill overlapping on to the site. Extract below:

ID	Location	Details		
1	On site	Site Address: Rakewood Road, Littleborough, Greater Manchester, Greater Manchester Licence Holder Address: -	Waste Licence: - Site Reference: D058 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: Littleborough Urban District Council Licence Holder: - First Recorded 31/12/1932 Last Recorded: -

5.3 Past Land Use

5.3.1 Historical Industrial Land Uses

There are fifty-two (52 No.) entries for Historical Industrial Land Uses within 250m of site. There is an onsite record of a refuse heap mapped in 1968. Again this could be adjacent to the site to the Northwest. Other records relate to a refuse heap 7m to the Northeast, unspecified heap, old coal shafts, unspecified pits and ground workings, a colliery, quarries and an engine house Extract overleaf.



ID	Location	Land Use	Date	Group ID
1	On site	Refuse Heap	1968	677850
A	7m NE	Refuse Heap	1908	781117
A	13m NE	Unspecified Heap	1928	713766

A	16m NE	Unspecified Heap	1938	724293
A	17m NE	Old Coal Shafts	1908	684754
A	17m NE	Unspecified Old Shafts	1928	640174
A	21m NE	Refuse Heap	1911	764009
A	21m NE	Refuse Heap	1911	753095
A	21m NE	Refuse Heap	1911	753095
A	24m NE	Unspecified Old Shafts	1938	640175
A	28m NE	Unspecified Heap	1949	724293
A	32m NE	Old Coal Shafts	1911	684753
A	32m NE	Unspecified Disused Shaft	1976	730868
A	32m NE	Unspecified Disused Shaft	1968	730868

5.3.2 Historical Tanks

There are two (2 No.) historical tank records within 250m of the site the closest being 88m to the East mapped between 1938 and 1961. Extract below.

ID	Location	Land Use	Date	Group ID
2	84m S	Unspecified Tank	1938	84029
E	210m SE	Unspecified Tank	1961	84025

5.3.3 Historical Energy Features

There is one (1 No.) record of an energy feature within 250m of the site. This is an Electricity Sub-station. Extract below.

ID	Location	Land Use	Date	Group ID
3	218m W	Electricity Substation	1992	45410

5.4 Environmental Designations

5.4.1 Green Belt Land

The site is within the Merseyside and Greater Manchester Green Belt.

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 7.

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 E.

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	Onsite	The site is currently pastureland for horses with no evidence of contamination noted during the walkover.	Unlikely
Former Site Use Pastureland, possible overspill of landfill and made ground	Onsite	The site historical mapping does not show that the site has been used as anything but pastureland however Hollingworth Brook has been straightened so Made ground on its banks is a possibility and the embankment from the reservoir may have overspilled into the site from the Southwest. Also landfills are listed on site however this again could be due to the site being adjacent to a landfill mapped between the 1930s to 1960s to the Northwest. A ground investigation close to the site boundary will determine the risk.	Possible – Localised on site boundaries.
Reservoir	Adjacent to site Southwest	Hollingworth Lake Embankment was completed in 1800 and embankments were restored with earthworks during the 1980's. Made ground from the project could have overspilled onto the Southwest portion of the site.	Unlikely
Current Industrial Land Uses	Within 250m	The water tower 106m South and Substation 217m West do not affect the site. The carparking area adjacent to the northwest of the site could produce some runoff however this is likely to be managed.	Unlikely
Adjacent site Historical uses. Landfill to NW	Adjacent to NW	Possible contamination was observed during the site walkover in the adjacent Hollingworth Country Park in a watercourse leading into Hollingworth Brook. There are also ventilation pipes on the embankment between the site and the adjacent carpark and manhole covers on site which suggest that the land adjacent drains onto the site. It is likely that leachate from the landfill could contaminate the new carpark site especially during the construction phase. The site is low sensitivity due to hardstanding. Construction phase management plan will be required.	Likely
Coal Mining	Northeast of the site	Coal Mining exists beneath the site at a recorded depth of 81mbgl. There are also a number of shafts close to the property boundary, one of which was capped in 1978 by the Coal Board. Shafts and historical workings could provide preferential pathways for contamination from the above landfill material. A full review of this is covered in section 8.	Possible

6.2 Pathways and Receptors

Pathways and Receptors	Distance/ Direction	Details	Significant Risk
Aquifers	Below Site	The bedrock deposits of the Lower Pennine Coal Measures and the superficial deposits on site are both designated as a Secondary A Aquifers. The site does not lie within Source Protection Zone. The site is to be a carpark with little disturbance of the sub-surface and hard standing which will limit the spread of contaminants. Possible contamination was observed during the site walkover in the adjacent Hollingworth Country Park in a watercourse leading into Hollingworth Brook. A site investigation will determine the depth of the overburden in this area. Glacial till if present beneath the alluvium will limit the spread of contaminants.	Unlikely
Hollingworth Brook (Grey Water)	Adjacent to the site to the East	The brook is a potential receptor for contamination and silt generated during earthworks related to the carpark extension. Possible contamination was observed during the site walkover in the adjacent Hollingworth Country Park in a watercourse leading into Hollingworth Brook. A ground investigation will determine whether a historical landfill material exist on site and a bund will be required to prevent material entering the waterway. A construction management plan will be required.	Possible
Adjacent sites	Surrounding site	The site is fairly flat with the reservoir embankment to the Southwest and the wooded carpark area to the Northwest. The site has always been pastureland although the possibility of landfill material overlapping the site boundaries does exist. Possible contamination was observed during the site walkover in the adjacent Hollingworth Country Park in a watercourse leading into Hollingworth Brook. Ventilation pipes and drains were noted along the NW boundary of the site. Site investigation in this area will confirm.	Unlikely
Construction / Ground workers	On site	It is possible that construction workers will be exposed to contaminating substances, vigilance should be maintained and use of PPE and standard hygiene practices should mitigate short term acute exposure.	Possible (Localised)
Site End Users	On Site	Site end use is a carpark. There is a low potential for localised contamination onsite as a result of adjacent historical landfills however the current carpark is constructed on the landfill area with no known effect. Hard standing and intermittent site use will reduce the risk. An intrusive ground investigation once a layout plan is available is recommended.	Possible (Localised)

7 INITIAL CONTAMINATION CONCEPTUAL MODEL

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

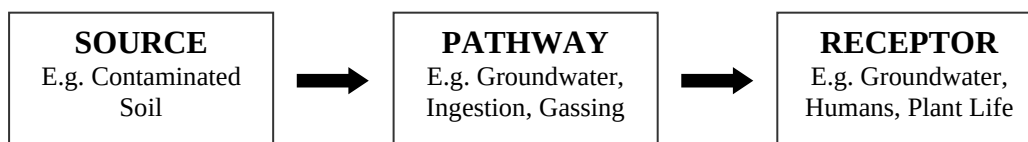
This section of the report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

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 a carpark.



Type of Contamination	Potential Sources	Potential Pathway	Potential Receptors	Pollution Linkage	Comment	Estimated Level of Risk
Ground Gas	Made Ground onsite / adjacent Landfill	Inhalation of Vapours	Construction/ Maintenance Workers	Potentially Active	There is potential for ground gas on site due to the site being in a coal mining area and a landfill adjacent to the Northwest which has ventilation pipes. Superficial cover of alluvial and glacial material which is likely to mitigate any gas migration from the underlying coal seams. PPE to protect construction workers and vigilance during construction of access from upper to lower carpark advised in case landfill material disturbed.	Low - Medium
	Coal seams	Vapours Penetrating Unprotected Buildings	Future Site Users	Potentially Active	There is potential for ground gas on site due to the site being in a coal mining area and an historical landfill adjacent to the northwest, however there is superficial cover of glacial material which is likely to mitigate any gas migration from the underlying coal seams. Future end use is to be carparking with no enclosed spaces and intermittent use, therefore gas monitoring not considered necessary.	Low
Surface and Near Surface Contaminants Within Soils	Former historical coal mining beneath site Historical landfill adjacent to site	Ingestion, Inhalation, Dermal Contact	Current Site Users	Potentially Active	Site is pastureland and is not shown to have been developed. Site users are likely to be construction workers with PPE.	Low
			Construction Workers	Potentially Active	Potential for localised contamination onsite if there is overspill of historic landfill material and drainage from the northwest of the site. Further ground investigation to confirm. Suitable PPE to protect workers and vigilance during construction of access from upper to lower carpark advised in case landfill material disturbed.	Low - Moderate
			Future Site Users	Potentially Active	Potential for localised contamination onsite if there is overspill of historic landfill material from the northwest of the site. Future site use to be a carpark. Further ground investigation and water testing to confirm.	Low
			Adjacent Land Users	Potentially Active	Adjacent site use is mainly pastureland, the reservoir embankment and carpark adjacent to Northwest. Run off from the site will need to be managed so as not to enter Hollingworth Brook. Baseline water testing advised.	Low
		Direct Contact	Structures	Potentially Active	Potential for localised contamination onsite due to adjacent historical landfill. No structures are anticipated as the site end use is carparking.	Low
		Absorption in Root Zone	Plants	Potentially Active	Potential for localised contamination onsite due to adjacent historical landfill. Site end use carparking.	Low
Mobile Contaminants, Leachables e.g. from Pollution Sources Adjacent to Site/On Site	Coal Mining Former landfill adjacent to site	Leaching into Groundwater	Groundwater	Potentially Active	Bedrock and superficial deposits are classed as Secondary A Aquifers. Potential for localised contamination onsite related to landfill. Possible contamination noted in a watercourse adjacent to site. Water testing advised, Glacial till will prevent spread.	Low
		Off-site Migration in Groundwater	Abstractions	Potentially Active	There are no current water abstractions identified within 250m of site. Site does not lie within Groundwater Source Protection Zone.	Low
			Controlled Waters	Potentially Active	Potential for localised contamination onsite. There is a stream on site (Hollingworth Brook) and a drain at the base of the NW boundary. Possible contamination in Hollingworth Country Park adjacent to the site draining into the brook was noted during site walkover. Drains adjacent to Northwest of site.	Low - Moderate

Type of Contamination	Potential Sources	Potential Pathway	Potential Receptors	Pollution Linkage	Comment	Estimated Level of Risk
Organic and Inorganic Contaminants Within Soils / Groundwater	Former landfill adjacent to Northwest	Potable Water Supply Pipes	Utilities Workers	Potentially Active	No portable water supply anticipated. To be reviewed once layout plans available.	Low

7.2 Contamination Summary

In this qualitative risk assessment, a generally Low and Low-Medium risk for contamination and ground gas exists onsite. However due to the landfill adjacent to the Northwest vigilance should be maintained whilst creating the access route from the existing carpark to the proposed parking area. SI is required to confirm the risk potential and design remedial actions where necessary.

7.3 Geotechnical Constraints

- Superficial material is alluvium which may require shoring during wet weather.
- Slopes adjacent to the site to Northwest and embankment of reservoir to Southwest and associated drainage.
- Made ground and landfill in anticipated access area.
- Possible localised flooding at the base of the adjacent Northwest embankment.
- Possible shallow workings

8 COAL MINING RISK ASSESSMENT

This section of the report addresses the specific risk to the site from historic coal mining activity. Certain sections have been briefly addressed in the previous geo-environmental part of the report however a more detailed approach is required due to the complexity of the site.

The purpose of a Coal Mining Risk Assessment (CMRA) is to evaluate available geological, mining and historical data to assess the potential for the site to be affected by underground mining. The report has been prepared in accordance with the Coal Authority (CA) Guidance Risk based Approach to development management (Version 4 2017).

8.1 Geology

The following section details the published and available geological data available for the site and the surrounding area.

8.1.1 Superficial Geology

The site is shown to be underlain by superficial deposits of Alluvium, with Glacial Till to the East and possibly beneath the alluvium. The surrounding hillsides do not have any superficial cover mapped. Adjacent to the Northwest is Made ground (landfill material).

8.1.2 Bedrock Geology

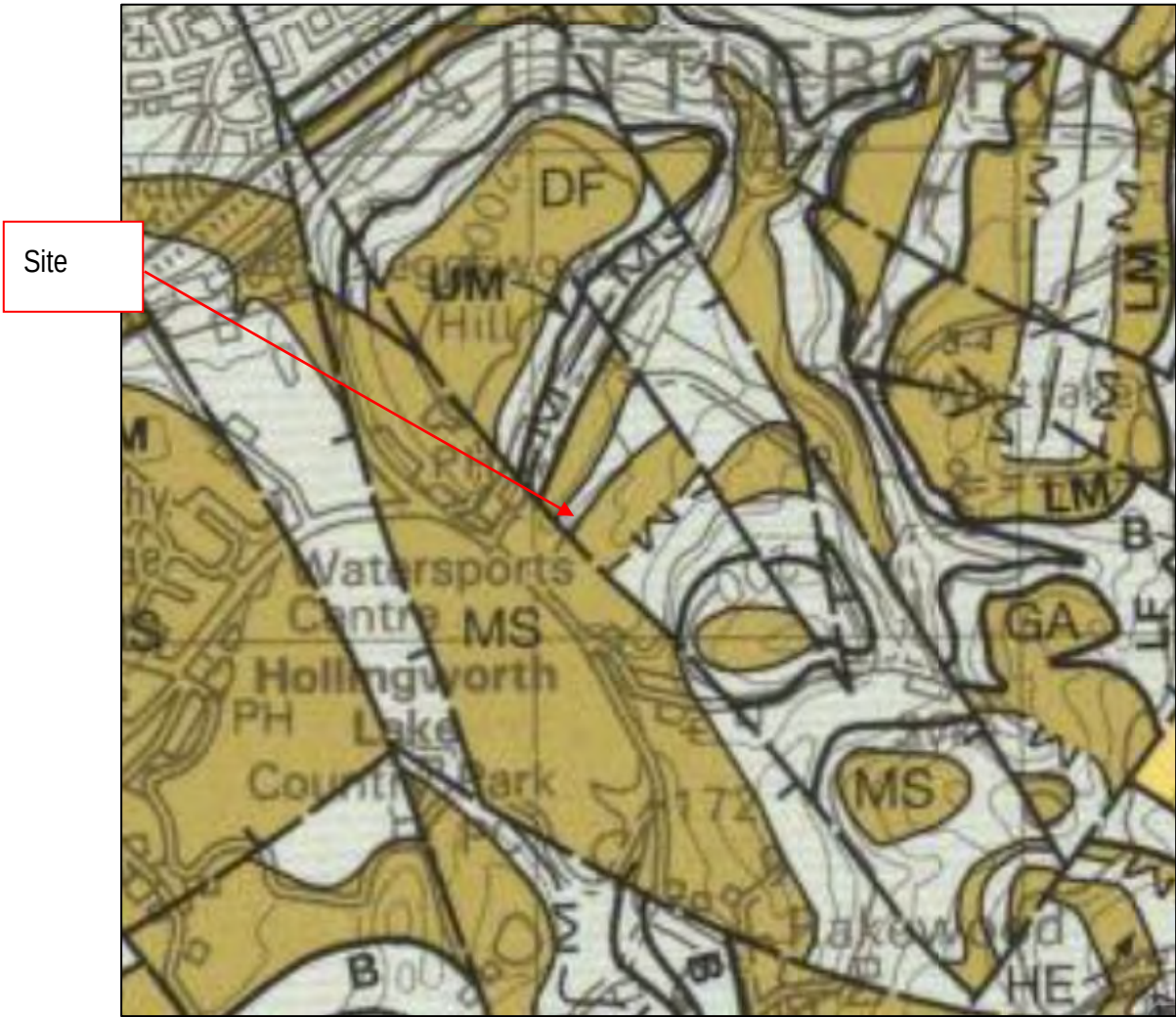
The bedrock geology is mapped as the Carboniferous Pennine Lower Coal Measures with the separately mapped Great Arc Sandstone outcropping on the valley sides. Here the Coal Measures consist of interbedded grey mudstone, siltstone and pale grey sandstone with coal seams. Beds of the Great Arc Sandstone are intercalated within the Pennine Lower Coal Measures and are described as yellow-brown, fine grained, micaceous cross-bedded.

Inferred regional faults are mapped trending NW-SE and an onsite fault downthrows the Milnrow Sandstone (yellow-brown, medium-grained and cross-bedded with a sandy siltstone in the lower part) to the South against the Coal Measures to the North.

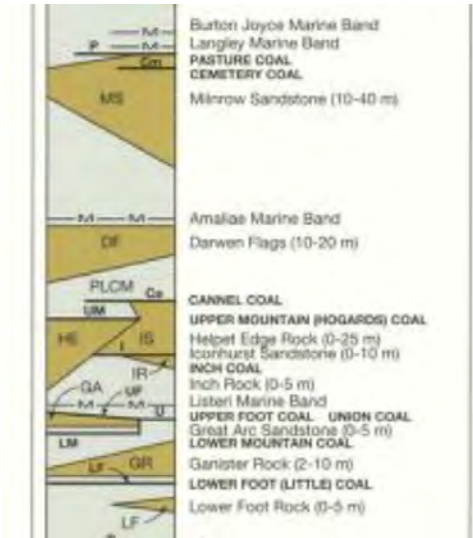
The Coal Measures dip gently to the Southwest with the nearest coal seam the site mapped as the Upper Foot Coal outcropping at the base of Hollingworth Hill to the Southwest and the embankment to the Northwest, topographically higher than the site. Above the Upper Foot Coal (30-40 cm thick) lies the Upper Mountain Coal (10-40 cm thick), also following the topography.

Beneath the Upper Foot Coal and the Great Arc Sandstone is the Lower Mountain Coal 40-70cm thick.

8.1.3 British Geological Survey Published Bedrock Data



Pennine Lower Coal Measures



British Geological Survey 1:50,000 map 76 Rochdale published 2008



23BLH039DS & CMRA
Revision 0
© Betts Geo Environmental Ltd 2023

8.1.4 Borehole Records

The closest BGS borehole record (SD91NW192) is approximately 310m to the East and relates to a water well at Brearley Farm, Littleborough. Drilled to 48m in 2012, it encountered Coal at 21.3m. Other borehole logs are from Brearley Hill Colliery (SD91NW12 includes two logs), 420m East and Hollingworth Colliery 580m to the Southeast.

The BGS logs from relating to Brearley Hill Colliery describe Brearley Farm Colliery and Brearley Colliery as separate locations.

Brearley Farm: Abandoned in 1896 close to Brearley Farm. Worked in 1894, 1895 and 1896. Lower Foot Coal 8-10" thick (20-25cm), 36' (10m) below the (Lower) Mountain Mine Coal worked to the edge of the Brearley Fault. Dry Eye (Adit) to workings 40 yards (36.5m) North of Brearley Farm. Beds dip 1:6 (approximately 32 degrees) ESE.

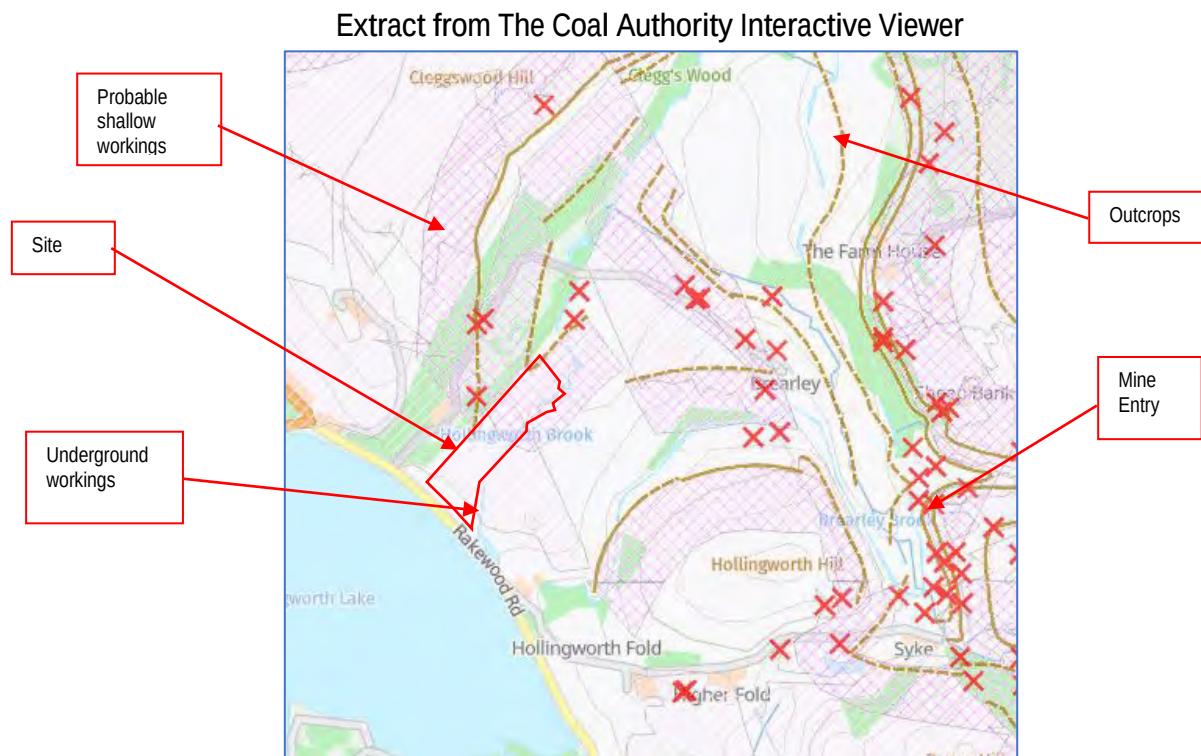
Brearley Colliery: Working the (Lower) Mountain Mine / Gannister Coal. It was recorded at approximately 12mbgl and being 60cm thick and dipping 30 degrees SW. Worked earlier than 1893. 100 yards (91m) Northwest of Brearley Farm.



Screen shot of British Geological Survey GeoIndex <https://mapapps2.bgs.ac.uk/geoindex/home.html>

8.2 Coal Authority Records

Reference to the Coal Authority Viewer shows the site to be within a Coal Mining Reporting Area in an area of underground workings and probable unrecorded shallow workings.



Screen shot of Coal Authority Interactive Viewer <https://mapapps2.bgs.ac.uk/coalauthority/home.html>

8.3 Underground Mining

A Consultants Coal Mining Report has been acquired for the site which records historical working of the Lower Mountain Coal at 81m beneath the property, last worked in 1900. The extraction thickness was approximately 60 cm and the seam dips 7.1 degrees to the Southwest. (See extract below)

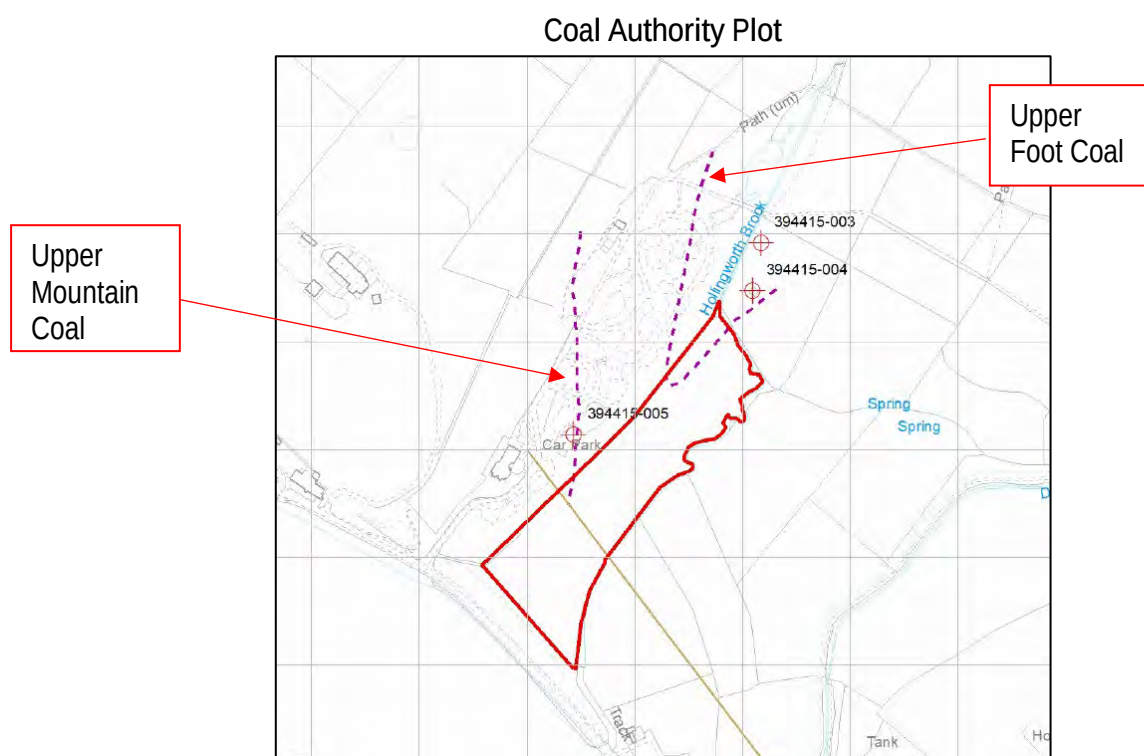
Underground Mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	LOWER MOUNTAIN	Coal	3XAP	81	Beneath Property	7.1	South-West	60	1900

There are three mine entries within 100m of the site boundary. One of which (394415-004) was capped in 1978 by the Coal Authority and can be seen just north of the site on the Coal Authority Interactive Viewer, this was Named the Brearley Colliery with a shaft diameter of 2.4 and a depth of 15m. Another Shaft to the north of the capped shaft is untreated, (394415-003) is also listed as being Brearley Colliery with a depth of 24m, diameter of 2.5m and an accuracy of approximately 8m. (See extract and plot below)

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	394415-003	394218 415491		Coal	
Shaft	394415-004	394210 415447	This shaft was capped in April 1978 by the Closed Collieries team of the National Coal Board to an unknown specification.	Coal	
Shaft	394415-005	394044 415313		Coal	

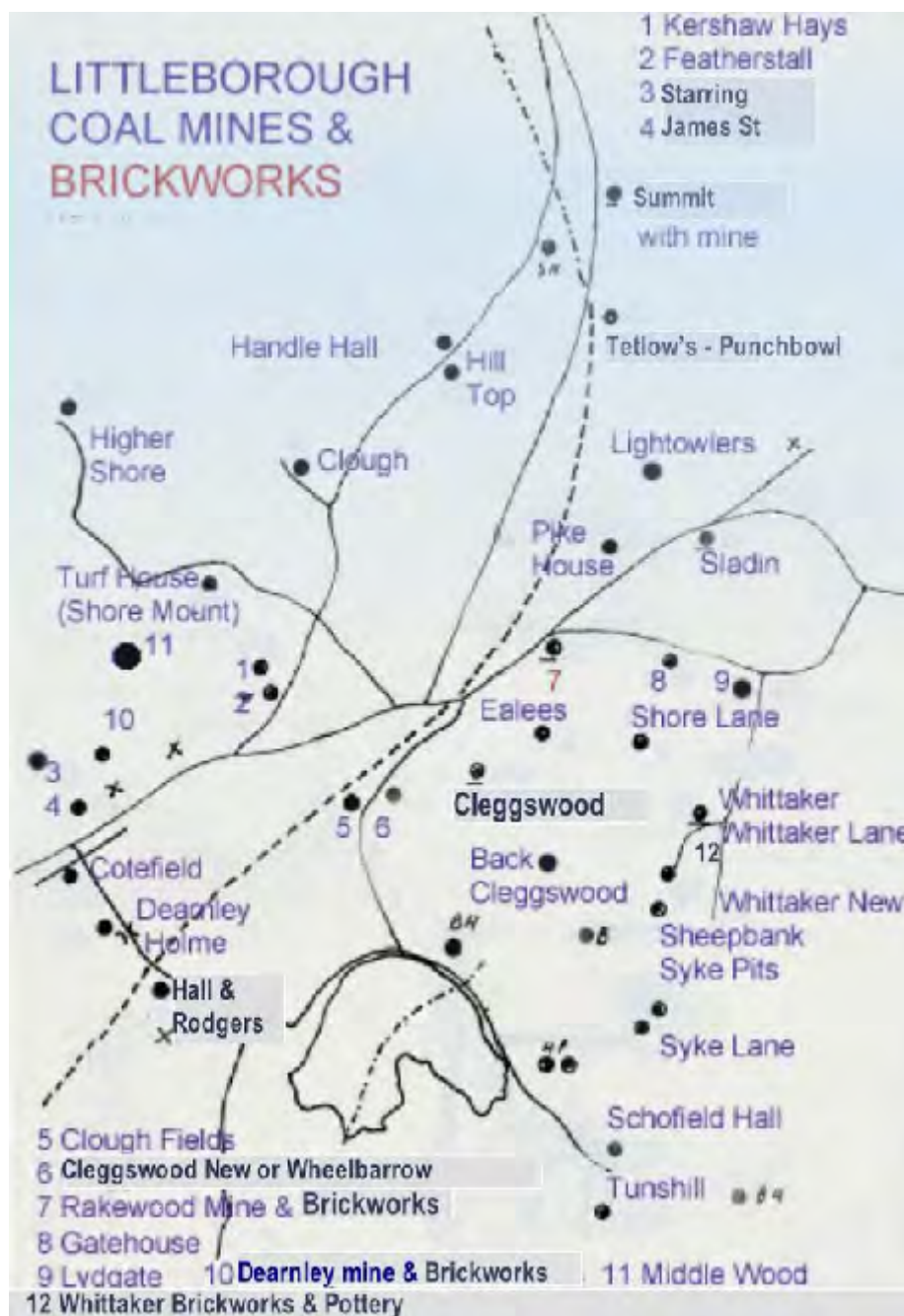
The plot has two mapped subcrops of the Upper Foot and Upper Mountain Coal within the site boundary which vary slightly from those mapped on the BGS 1:10,000 mapping. The Coal Authority Plot also shows the fault between the Milnrow Sandstone to the Southwest and the Coal Measures to the Northeast.



There are no site investigations, remediated sites or reports of coal mining subsidence within 50m of the site. The Coal Authority Report also records that there are no opencast mines, Coal Authority managed tips, reports of mine gas or mine water treatment schemes within 500m of the site boundary.

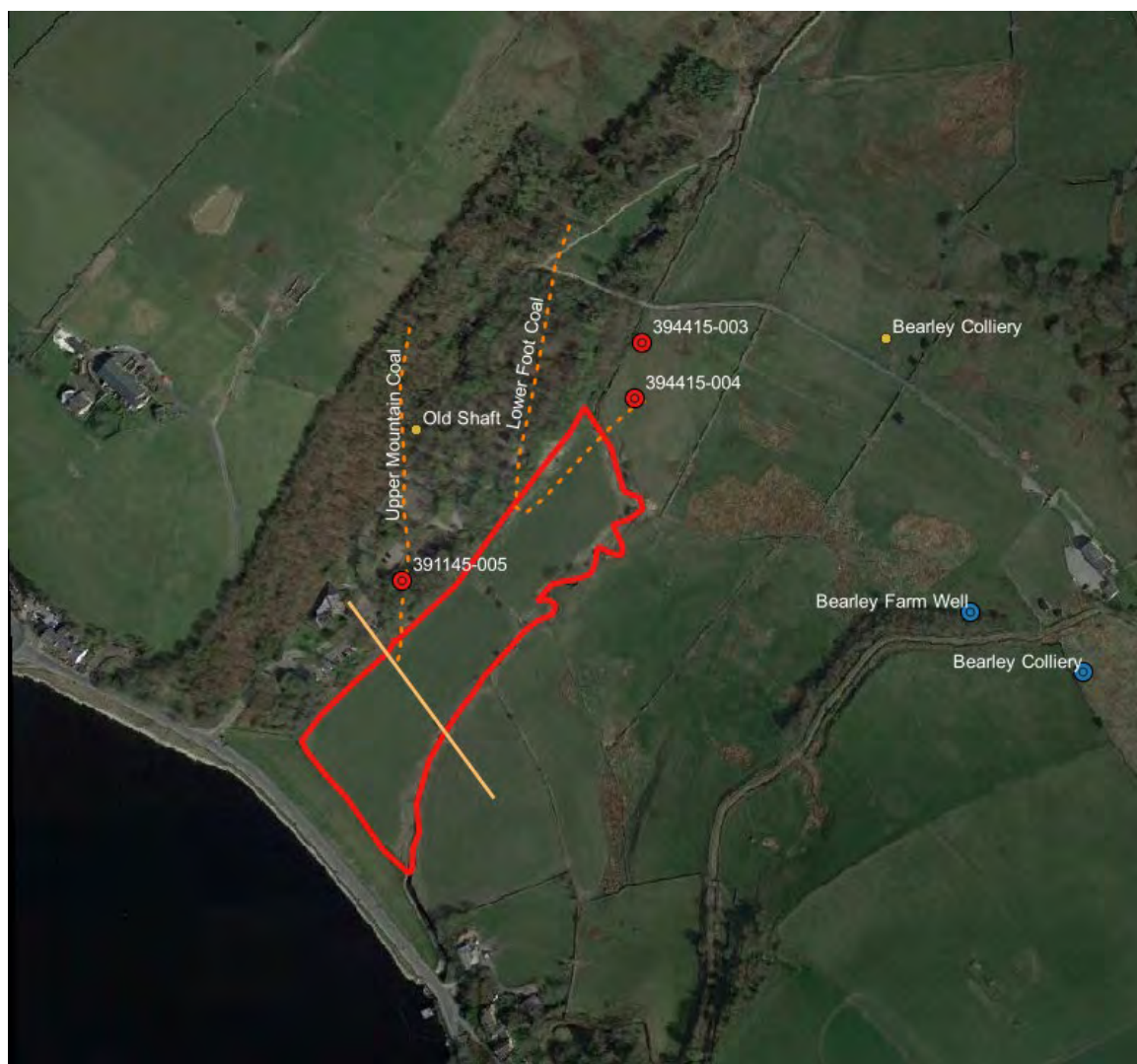
8.4 Mining History

The first record of coal mining in the Littleborough area is a lease dated 1582. The earliest form of mining was the exploitation of near surface coal using of bell pits of which there is evidence in the area of Syke Moor to the East of the site. These are thought to be mainly 18th Century, with later drift mines near Syke Farm where colliers followed the outcrop underground from an adit on the hillside and Sheep Bank (Whittaker and Sheep Bank Coal Pit) Brearley Colliery (225m NE of the site on the 1891 map or 355m E of site to BGS borehole record) consisted of a number of shafts and at least two adits. The colliery was recorded as being worked by Henry Brearley in 1854. The mine closed in 1886 but re-opened for a short time in 1893 to work the Mountain Mine seam before being abandoned in 1896.



Map by Peter Cryer from Littleborough history website <https://www.littleboroughshistory.org/coal-mining-map.html>

Prior to 1872 there was no legislation that required underground workings and shafts to be recorded. After 1872 plans were required to be deposited with the Mines Record Office, however artisanal and illegal workings persisted that were not recorded, or plans were inaccurate. There is therefore a possibility that shallow workings could occur anywhere that coal seams exist close to the surface, especially where there are thicker more productive seams. The shafts on the plot below are a combination of the Coal Authority data, BGS boreholes and historical mapping. All are thought to be related to the Bearley Colliery exploiting the Upper Mountain and Upper Foot near surface outcrops and the underlying thicker (60cm) Lower Mountain seam and Lower Foot Seam.



Conclusion

The Coal Authority Report and Interactive Viewer detail underground mining beneath the site of the Lower Mountain Seam at 81mbgl beneath the site, last mined in 1900. These workings are unlikely to pose a risk to future development on the site due to their age and depth which is outside the zone of influence of the surface.

There are a number of shafts mapped close the site, the closest being 37m to the NE thought to be a capped with a structure in Hollingworth Country Park Car Park. Another capped shaft was identified approximately

47m NE of the site. There is some discrepancy of the location of the shafts between the historical mapping, Coal Authority data and BGS boreholes and some of the workings predate the need for mine plan lodgement. There is also a variation between the outcrops mapped on the Coal Authority Maps and the OS maps as well as conflicting dip information which is therefore un-reliable. A log from Brearley Farm water well puts a Coal Seam at 21.3 m below ground level. Referring to the mapped coal outcrops (which also differ on the Coal Authority map and BGS 1:10,000 maps), this is likely, to be the Upper Foot Coal as the topography rises towards Hollingworth Hill.

Brearley Colliery consisted of a number of shafts and adits of which the exact location of which is uncertain and over time and change in ownership, various seams were exploited. Although it is thought unlikely that there are unmapped shafts on site the presence of unrecorded shallow workings (<30m bgl) in the Northeastern 2/3rds of the site (North of the fault against the Milnrow Sandstone) can not be ruled out therefore a ground investigation including three rotary holes to prove or disprove the presence of historical workings and to establish the depth and dip of coal seams is advised. Consideration must be given to artesian water due to geology and waterbody up gradient.

9 SCOPE OF GROUND INVESTIGATION

9.1 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 for contamination and coal mining.
- 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.

9.2 Proposed Ground Investigation Scope

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

- Locate the on site drain and outfall into the Hollingworth Brook.
- Water testing of Hollingworth Brook and drain to assess the baseline for contamination.
- 3 Rotary Holes in the Northeastern side of the site to 30m to prove or disprove existence of workings.
- 1 Rotary hole to the Southwest of the fault to determine its position.
- 1 day trial pitting and CBRs for hardstanding.
- 6 No. soil samples taken for chemical assessment, specifically in the proposed access area from upper existing carpark - 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.

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 F.

10 REFERENCES

- BS 5930:2015 Code of Practice for Ground Investigation.
- BGS 1:10,000 geology map SD91NW, published 2007.
- BGS 1:50,000 geology map 76 Rochdale, published 2012.
- Investigation of Potentially contaminated sites BS10175:2011 +A1:2013.
- BS8576:2013 Guidance on investigations for ground gas.
- 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.
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- Contaminated Land Risk Assessment; a Guide to Good Practice; CIRIA C552: 2001.
- BRE 211 Radon: guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment) (2007 edition).
- Assessment of risks to human health from land contamination: an overview of the development of guideline values and related research. EA, 2002.
- Health and Safety in Construction, HSG150, HSE, 1996.
- Baker W (1987), Investigation Strategy - lecture at City of Birmingham Development Department Symposium on Methane Generating Sites, 9 December 1987, Industrial Research Laboratories, Birmingham.
- NHBC Standards, Chapter 4.2, 2017 Building Near Trees.
- '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.
- CIRIA C665 'Assessing risks posed by hazardous ground gases for buildings' 2007 - for high rise residential / flats.
- CIRIA. Abandoned mine workings manual (C758D)
- BS8485:2015 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.
- BRE 414 'Protective measures for housing on gas-contaminated land' Roger Johnson, Parkman Environment 2001.
- BS 8500-2:2015+A1:2016 'Concrete British Standard to BS EN 206. Specification for constituent materials and concrete'.
- CLR11 'Model Procedures for the Management of Land Contamination' DEFRA 2004.
- <https://www.littleboroughshistory.org/coa-lmining-hollingworth.html>

APPENDIX A

- (i) Site Location
- (ii) Site Photographs

Site Location Plan

The site is located East of Rakewood Road, 1km to the South of Littleborough, Greater Manchester. The closest postcode is OL15 0AQ. The coordinates on the British National Grid CRS are 394087, 415274. The proposed site is approximately 2.4 hectares in total and lies at an elevation of 165m AOD.





Photo 1) Site Access Looking East. Reservoir embankment on right.



Photo 2) Looking NW at boundary with existing carpark.



Photo 3) Hollingworth Brook looking North



Photo 4) Hollingworth Brook looking Northeast on Northeast boundary.



Photo 5) View from centre of site looking Northeast



Photo 6) Manhole covers for drain on Northwest boundary



Photo 7) Potential contamination in tributary to Hollingworth Brook (not on site)



Photo 8) Potential contamination in tributary to Hollingworth Brook (not on site)



Photo 9) Capped shaft in Northeast adjacent field



Photo 10) Ventilation pipe in landfill material to Northwest of site.

APPENDIX B

(i) Historical Mapping

Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: County Series

Map date: 1851

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
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Edition 1851
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Levelled N/A

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Revised N/A
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Levelled N/A

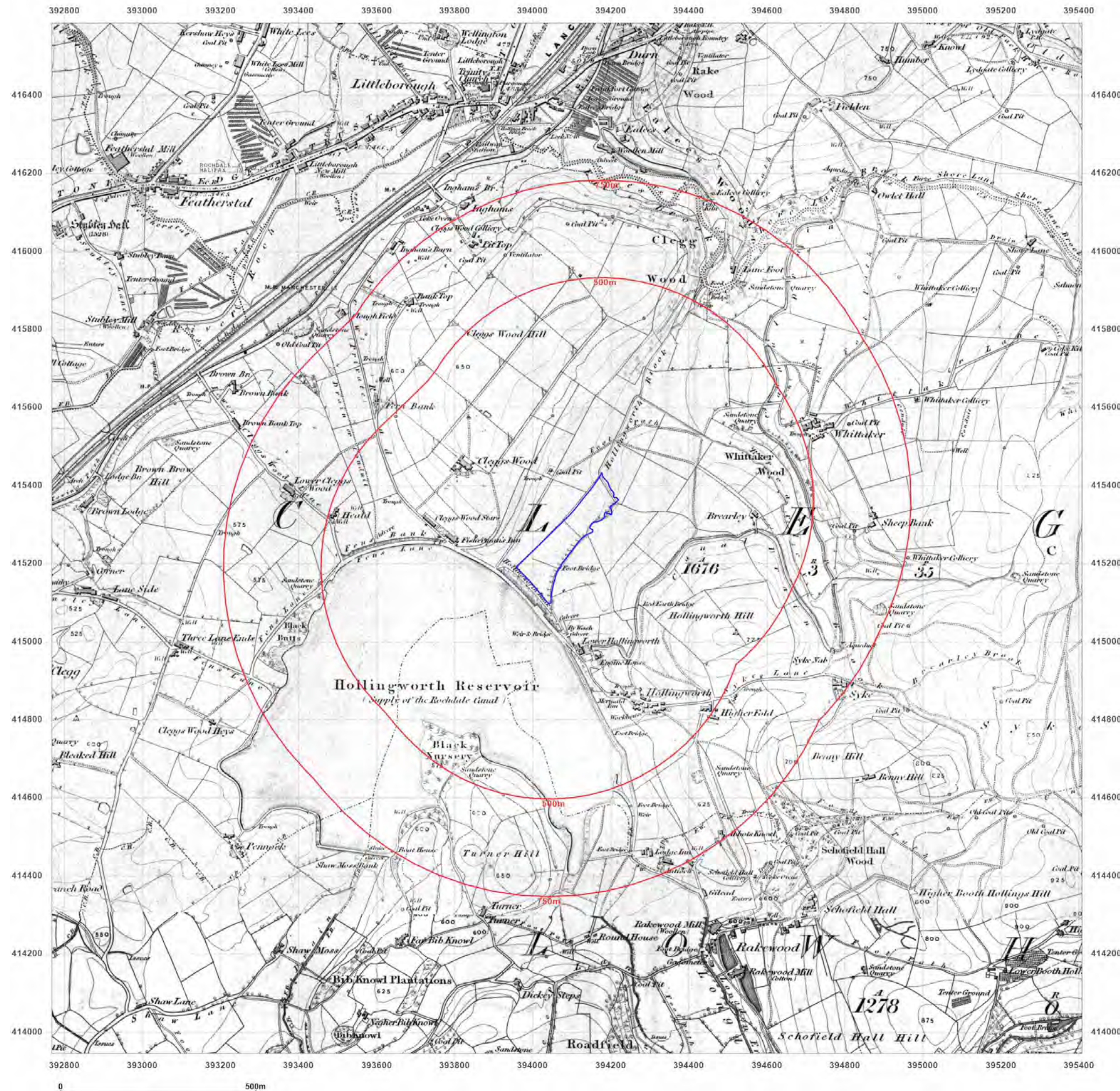


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Production date: 17 November 2023

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



Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

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

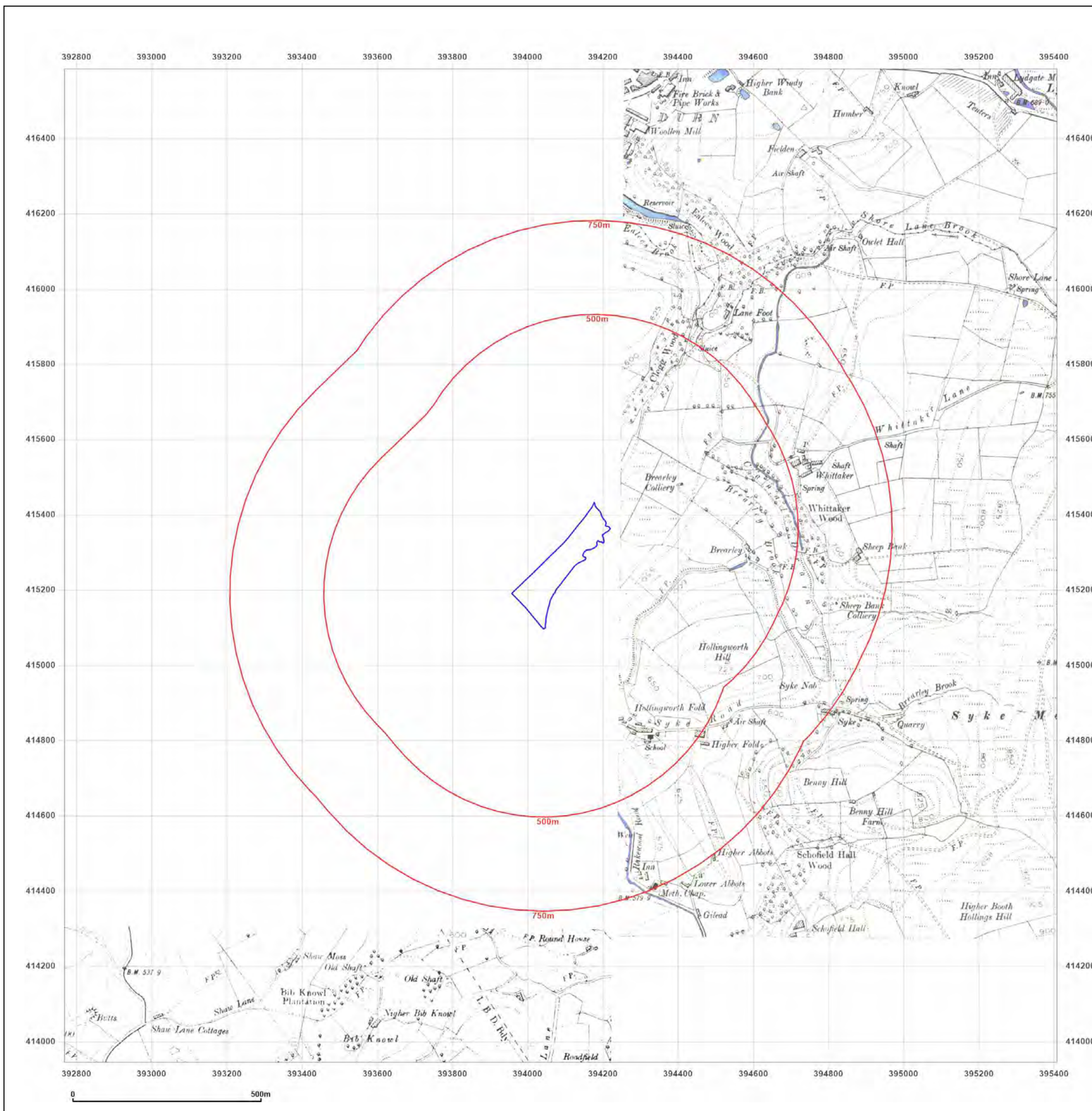


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Production date: 17 November 2023

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Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: County Series

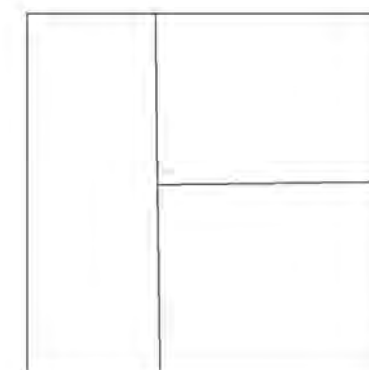
Map date: 1890-1892

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1890
Revised 1890
Edition N/A
Copyright N/A
Levelled N/A

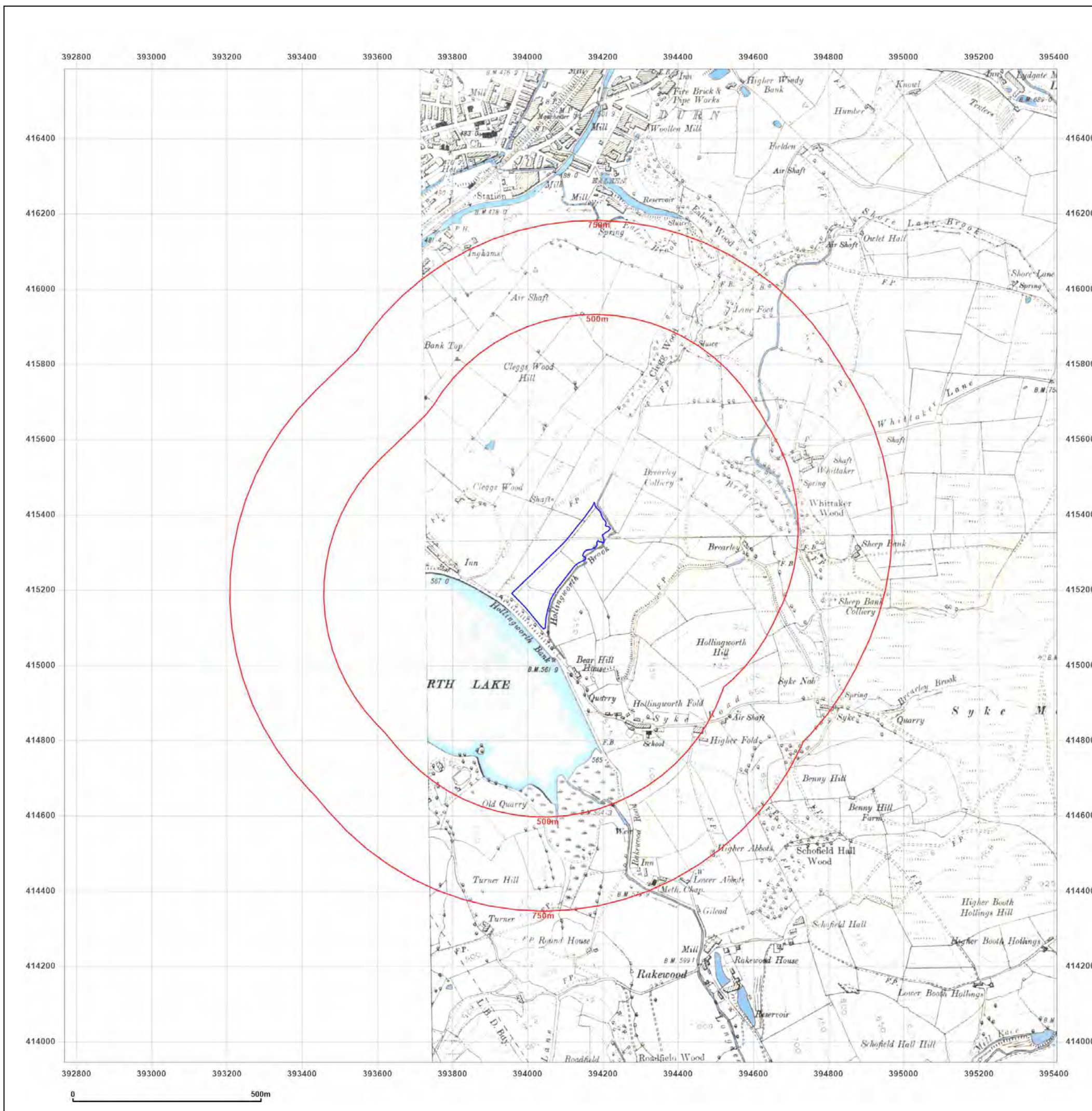


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Production date: 17 November 2023

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Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: County Series

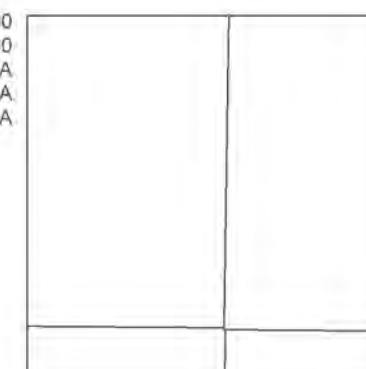
Map date: 1890-1892

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1890
Revised 1890
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

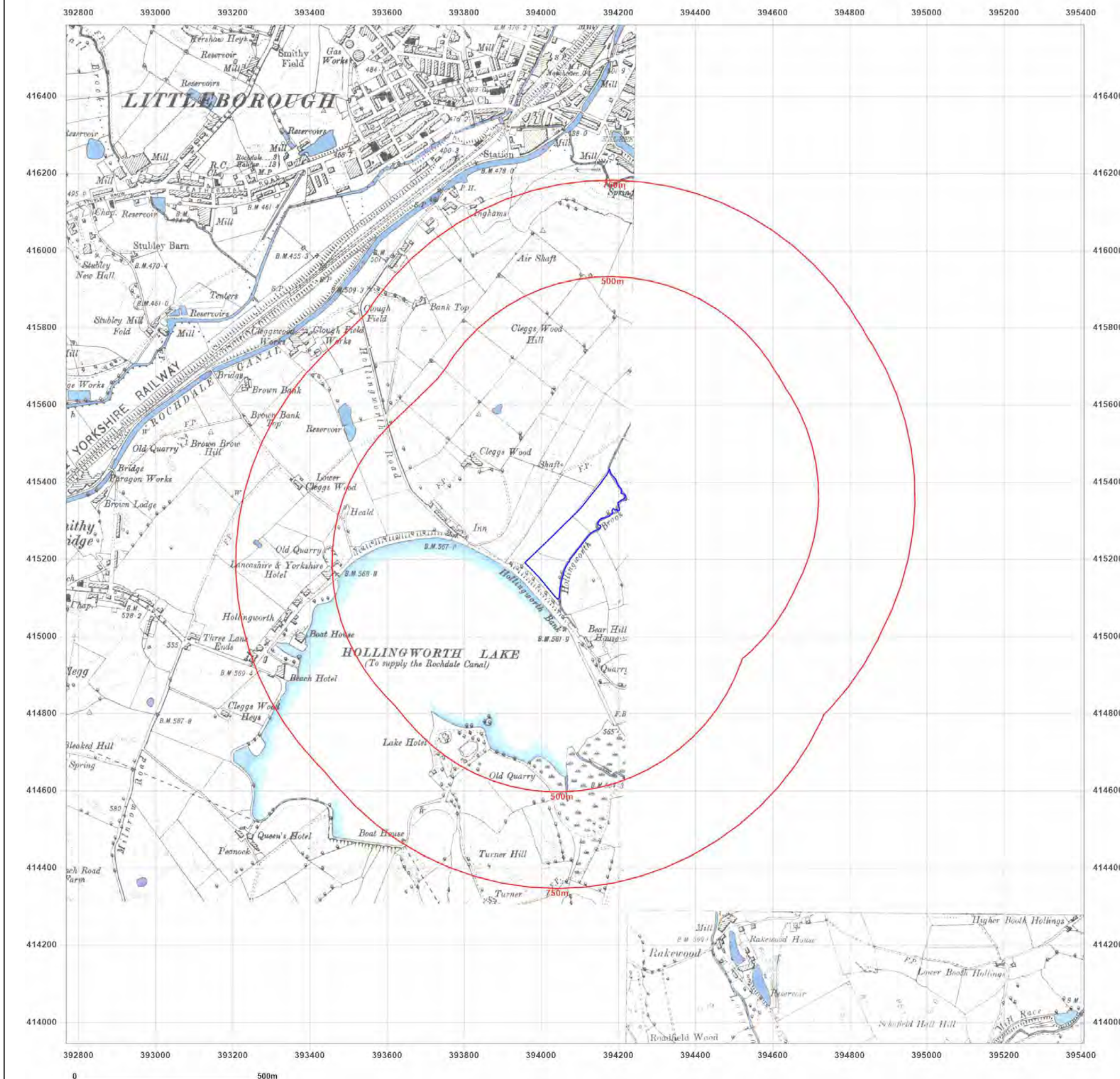


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Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: County Series

Map date: 1907-1909

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1847
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

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

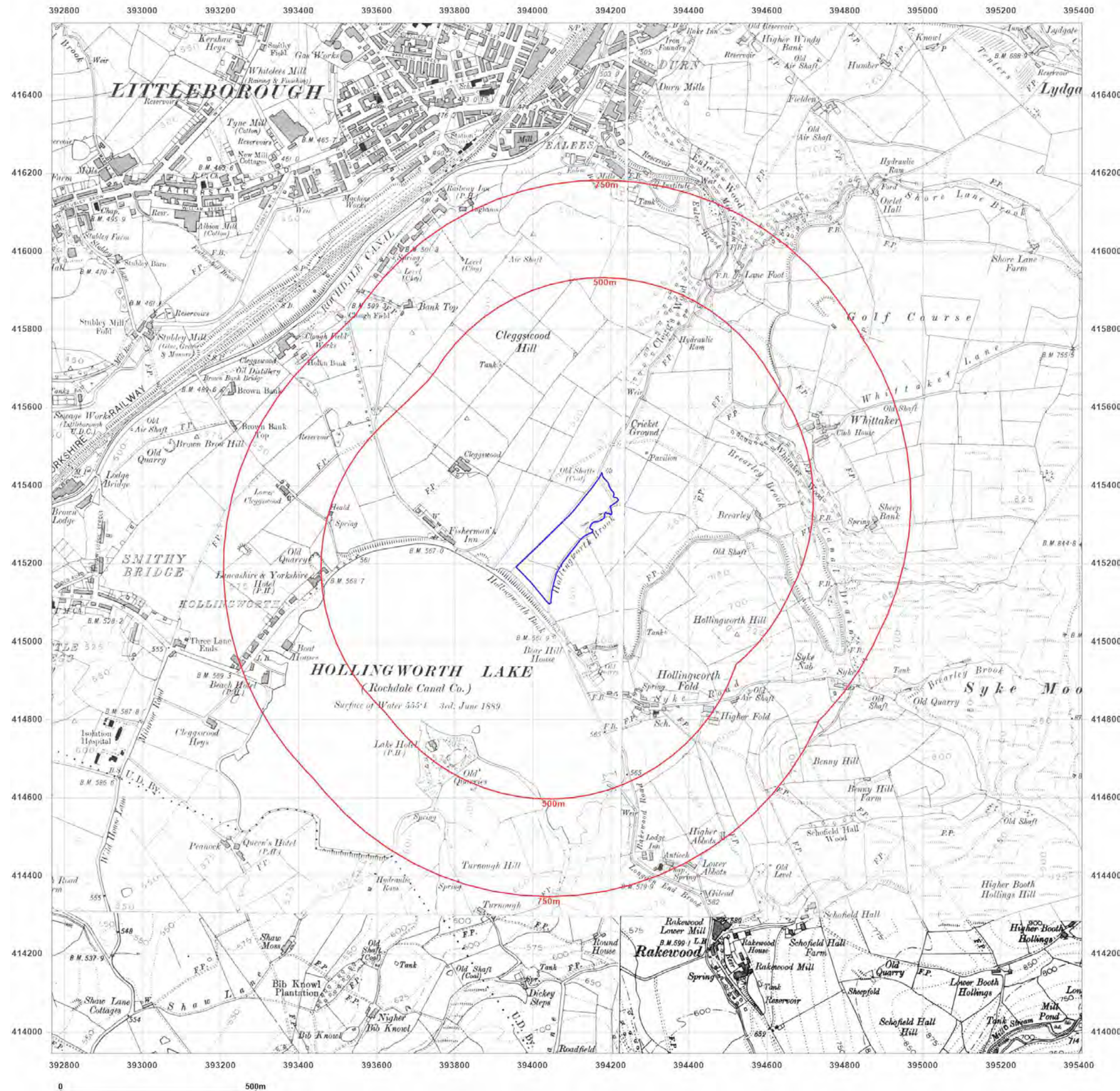


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: County Series

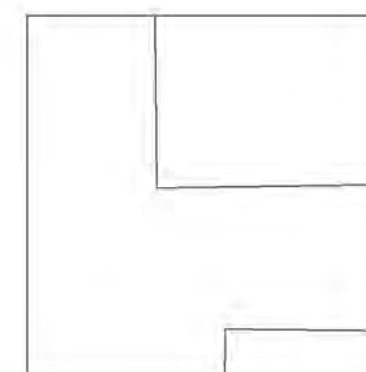
Map date: 1907-1911

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1849
Revised 1911
Edition 1911
Copyright N/A
Levelled N/A



Surveyed 1848
Revised 1907
Edition N/A
Copyright N/A
Levelled N/A

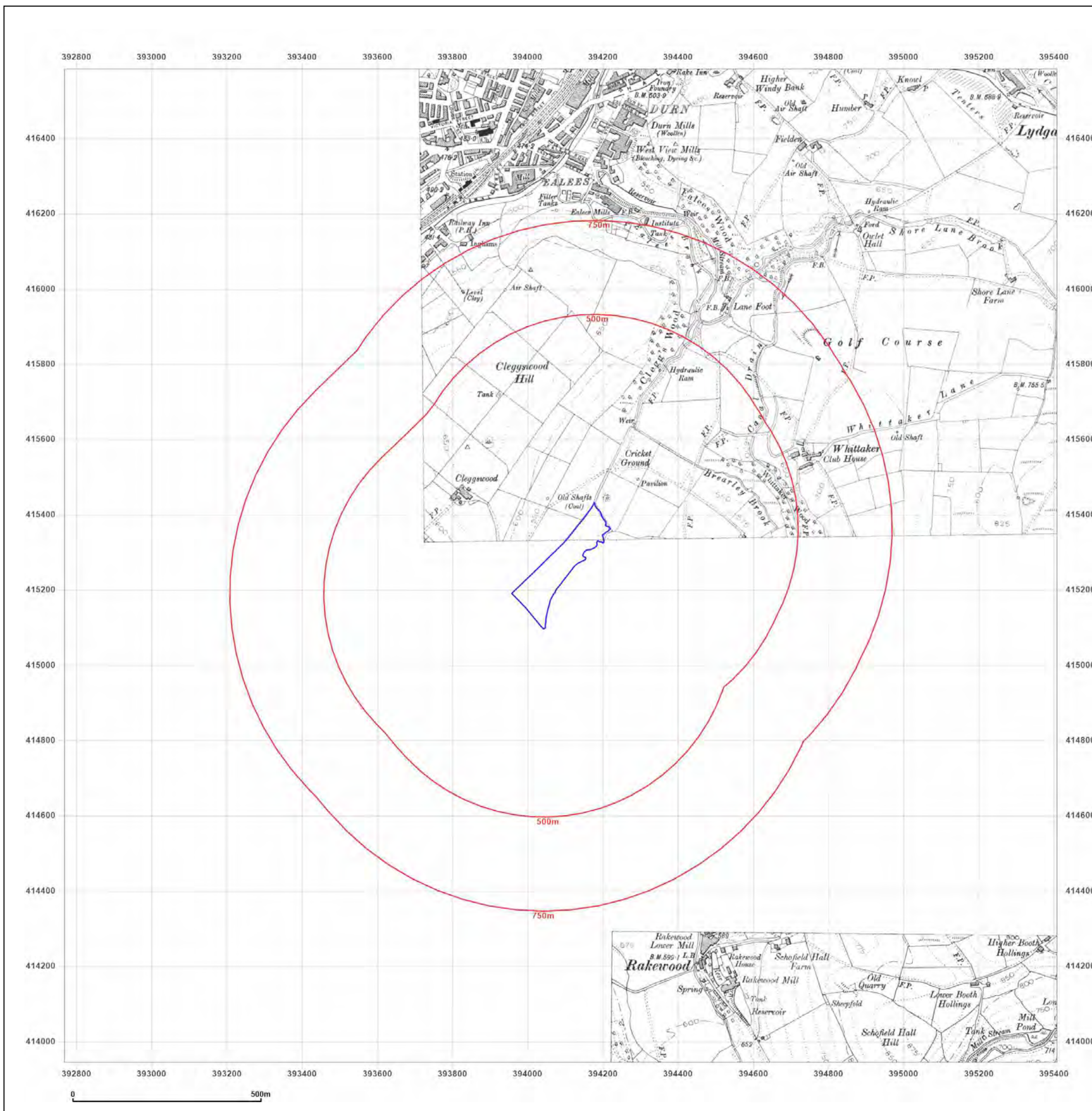


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: County Series

Map date: 1928-1930

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1847
Revised 1930
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

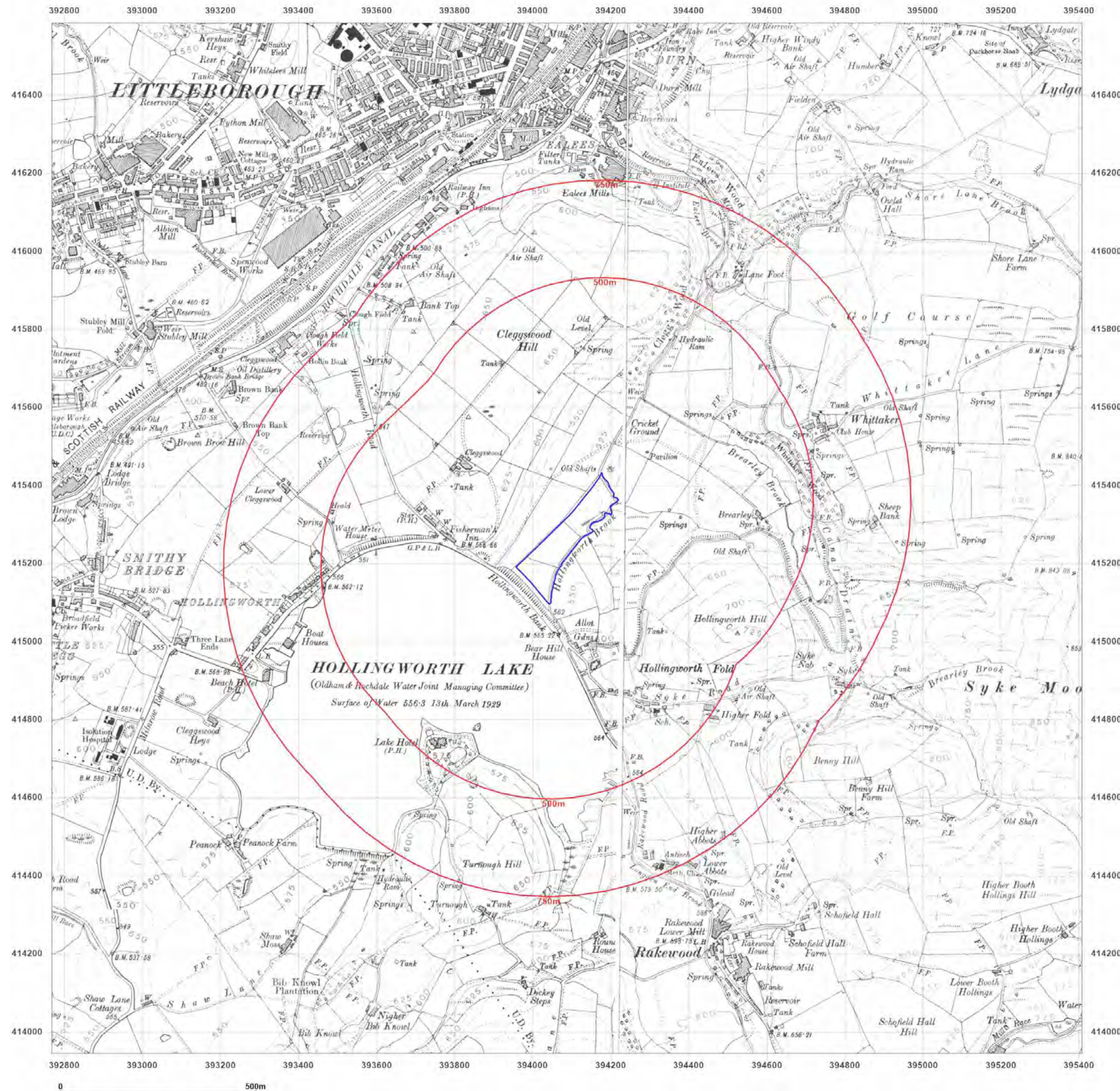


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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

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

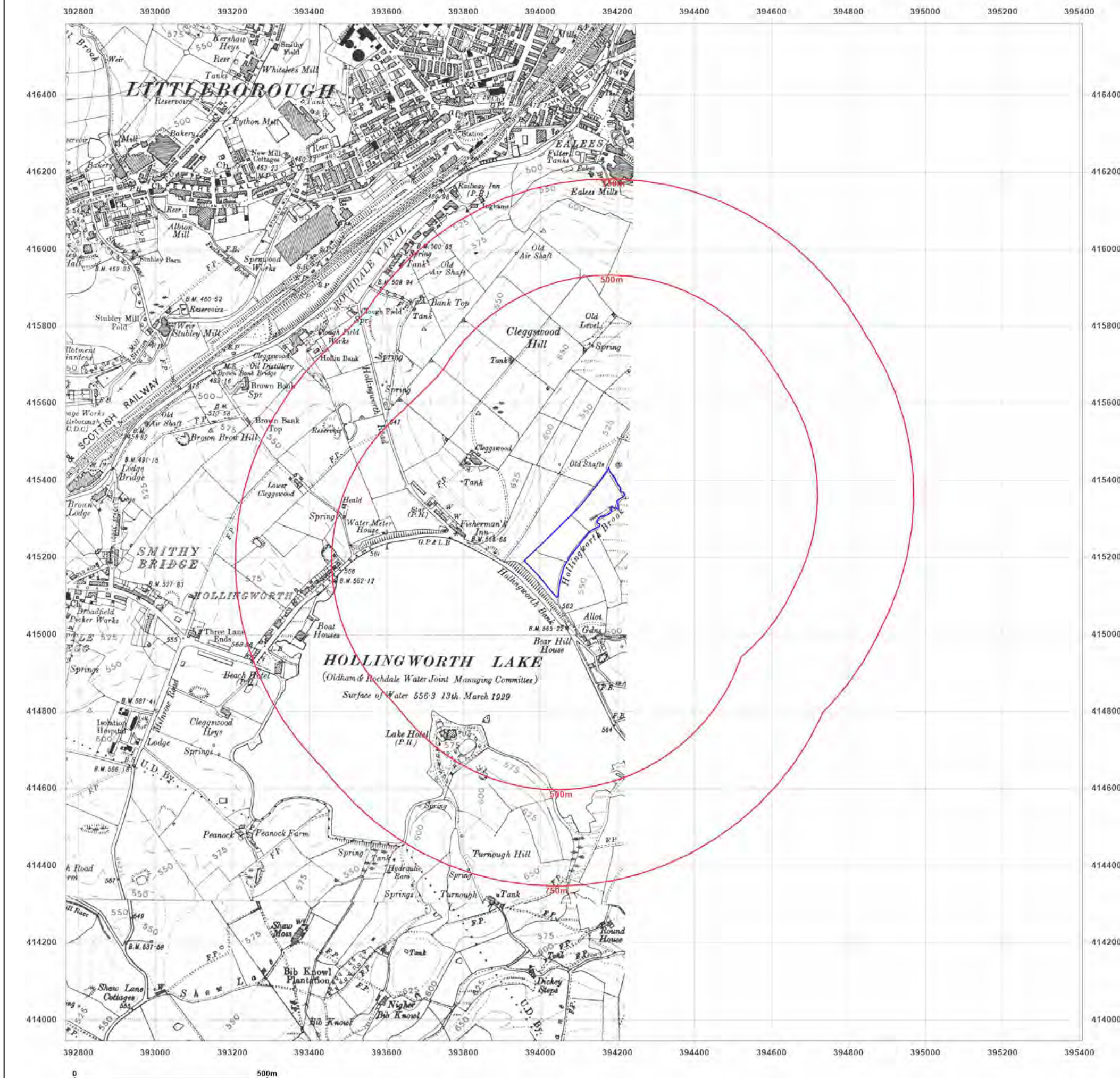


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Production date: 17 November 2023

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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: Provisional

Map date: 1949-1954

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1949
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1949
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

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

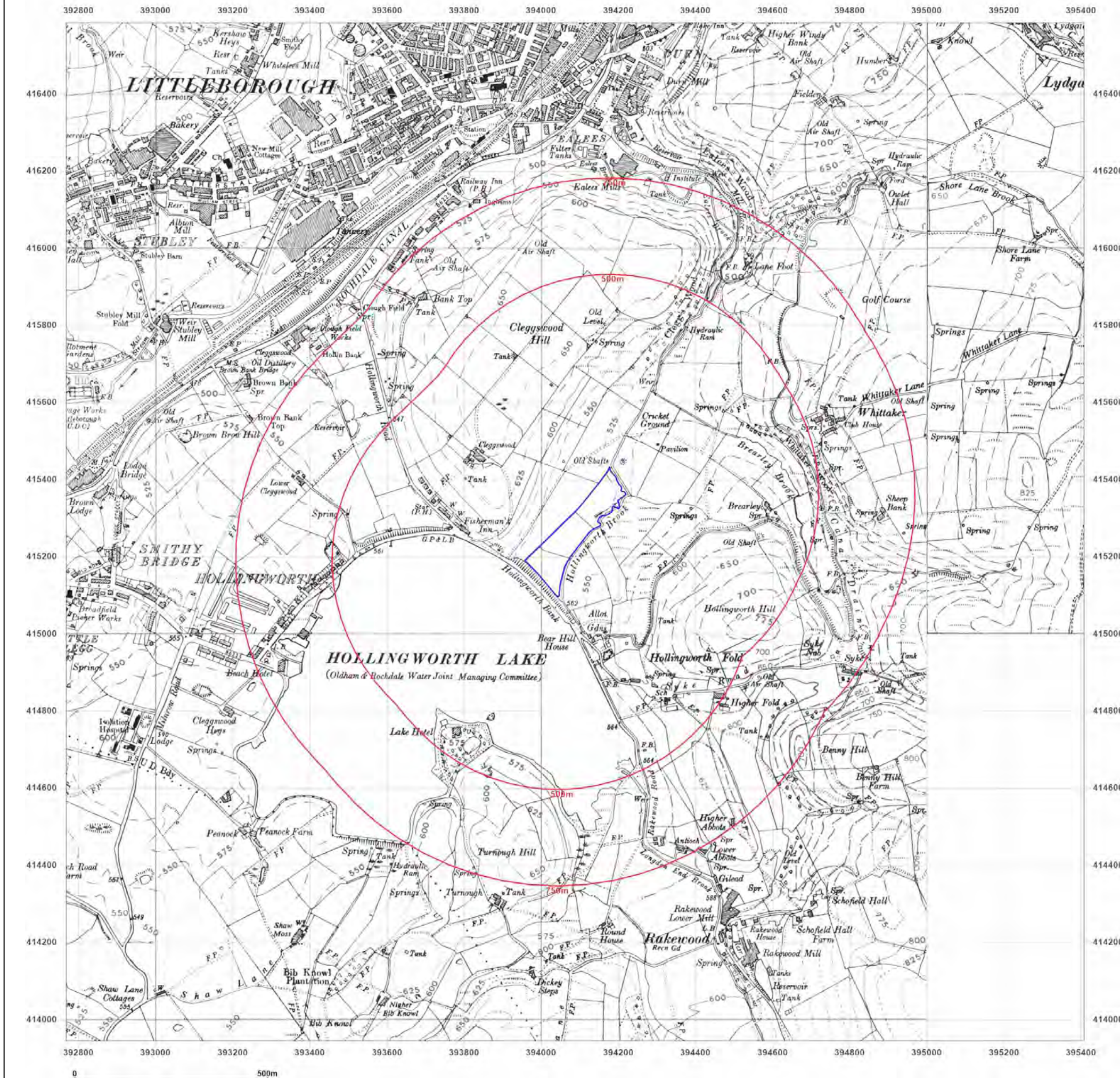


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Production date: 17 November 2023

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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: Provisional

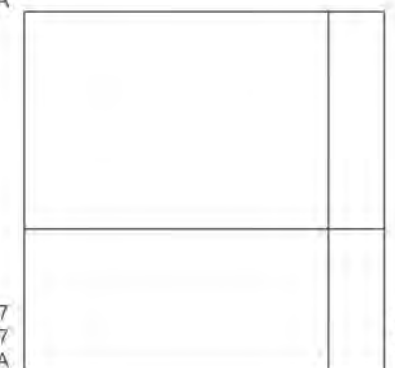
Map date: 1967-1972

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1968
Revised 1968
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1967
Revised 1967
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1972
Edition N/A
Copyright N/A
Levelled N/A

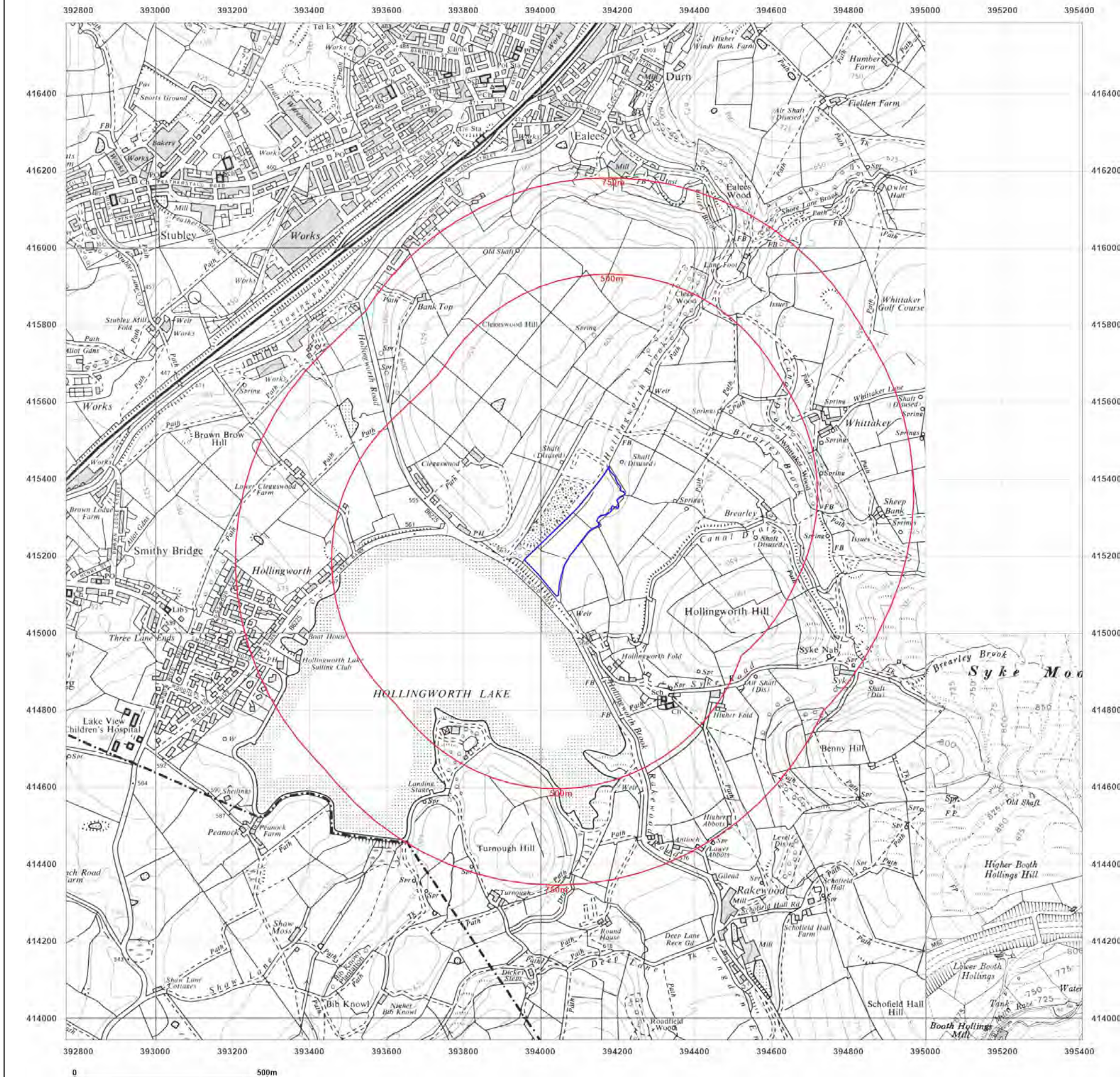


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Production date: 17 November 2023

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Site Details:

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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 1976-1979

Scale: 1:10,000

Printed at: 1:10,000



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

Surveyed 1979
Revised 1979
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1976
Revised 1976
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1979
Revised 1979
Edition N/A
Copyright N/A
Levelled N/A

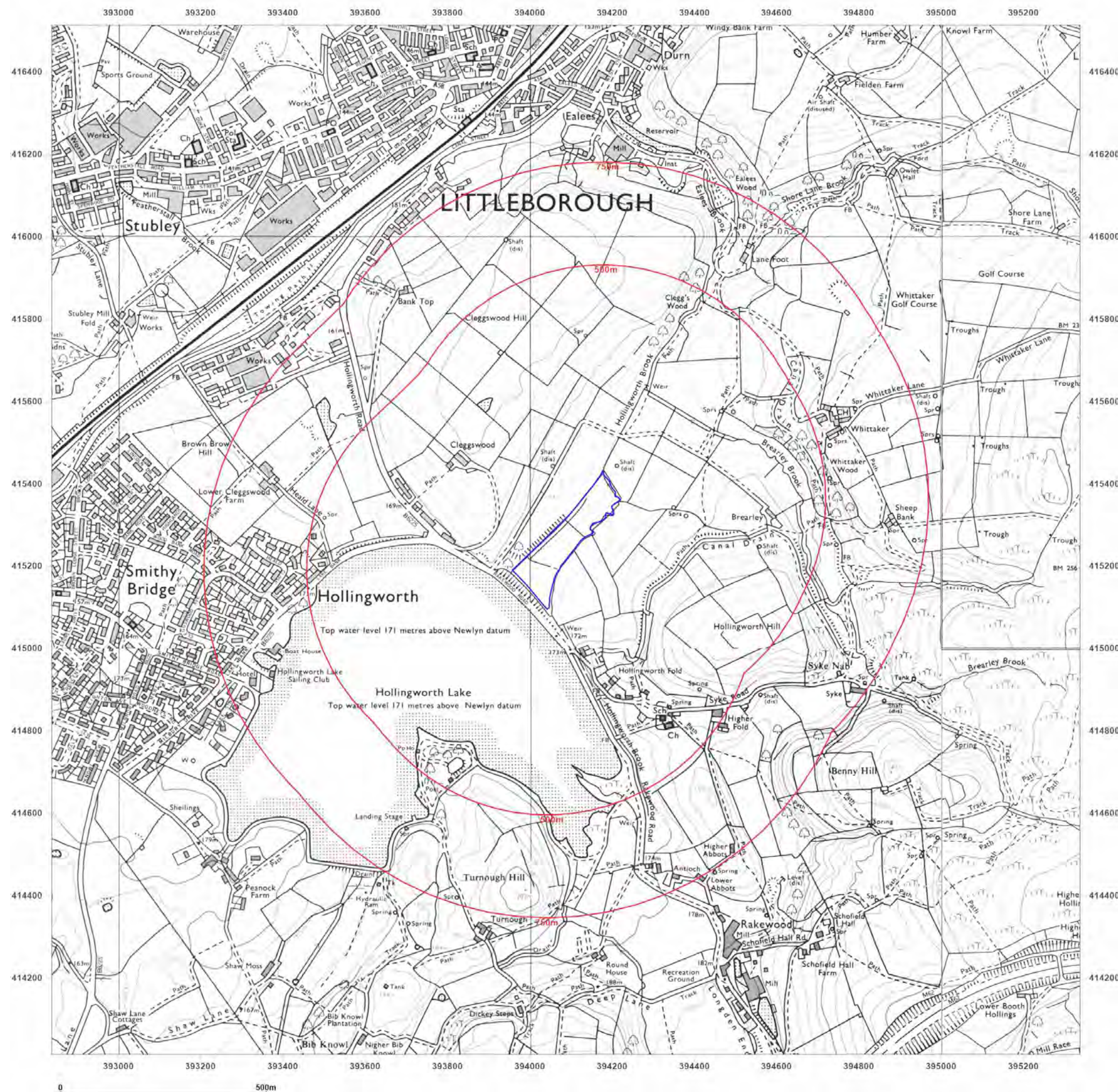


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Site Details:

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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: National Grid

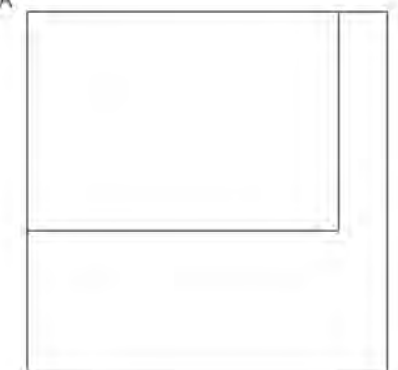
Map date: 1989

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1983
Revised 1989
Edition N/A
Copyright N/A
Levelled N/A

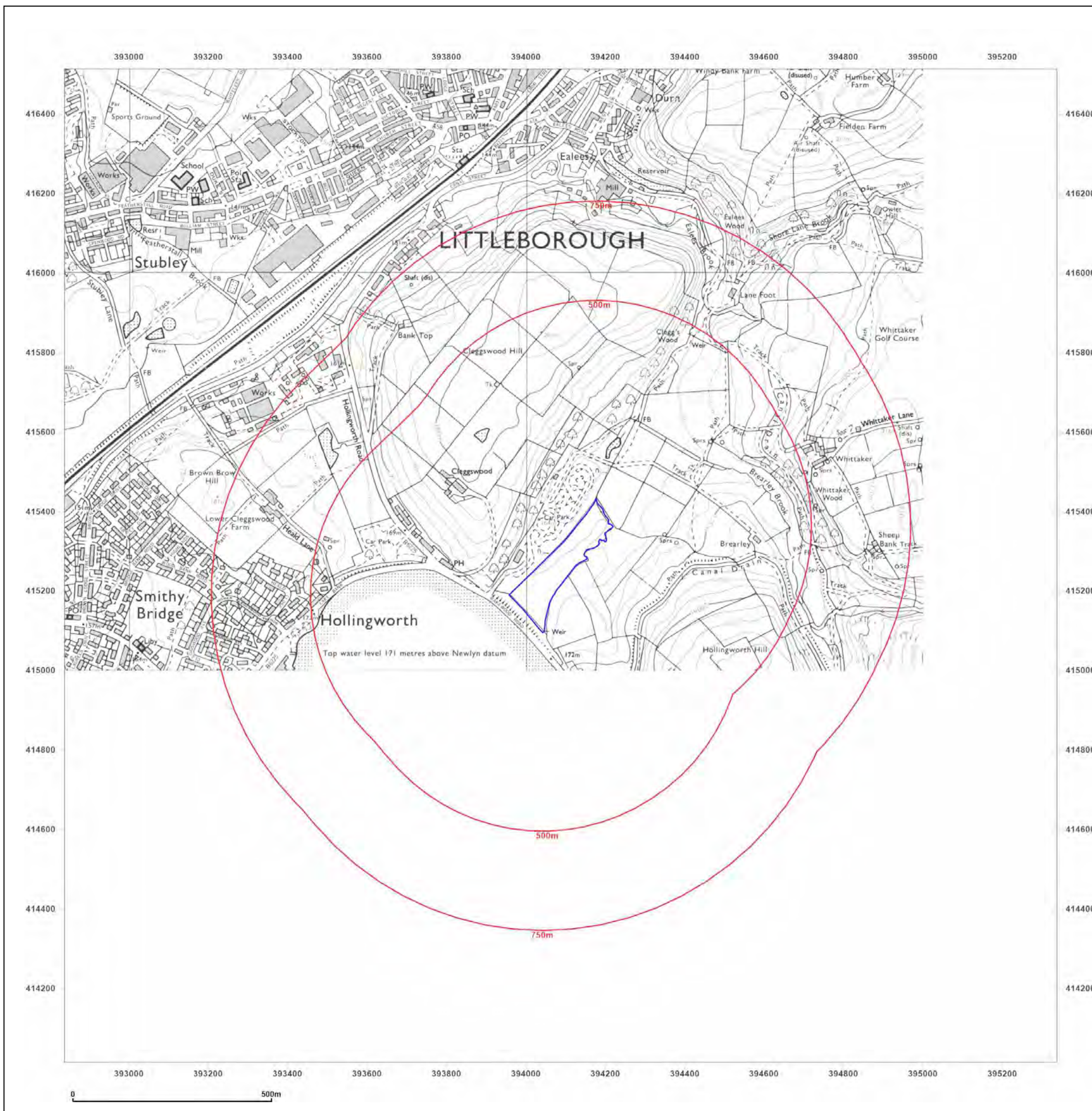


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Site Details:

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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

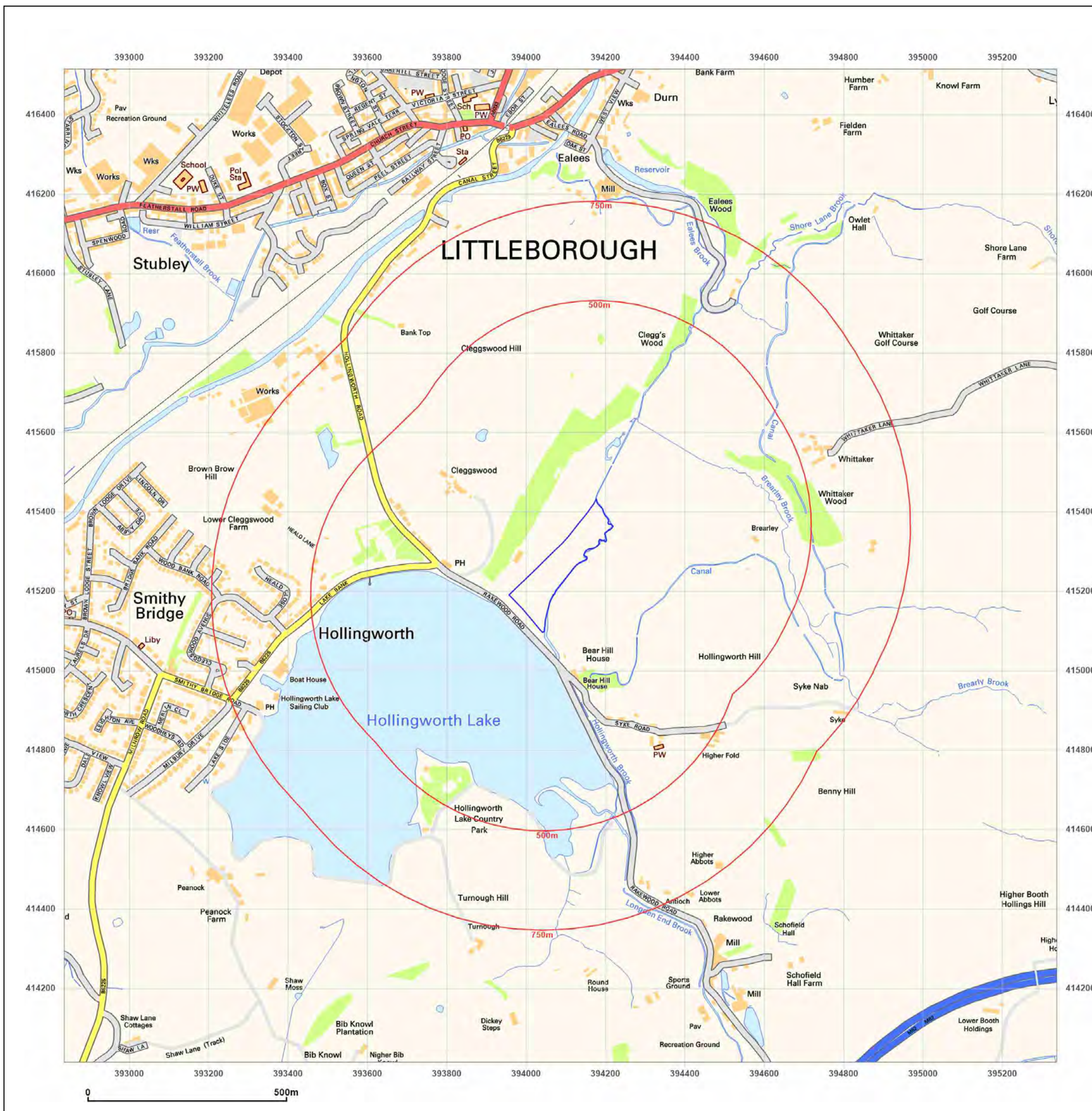


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Site Details:

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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

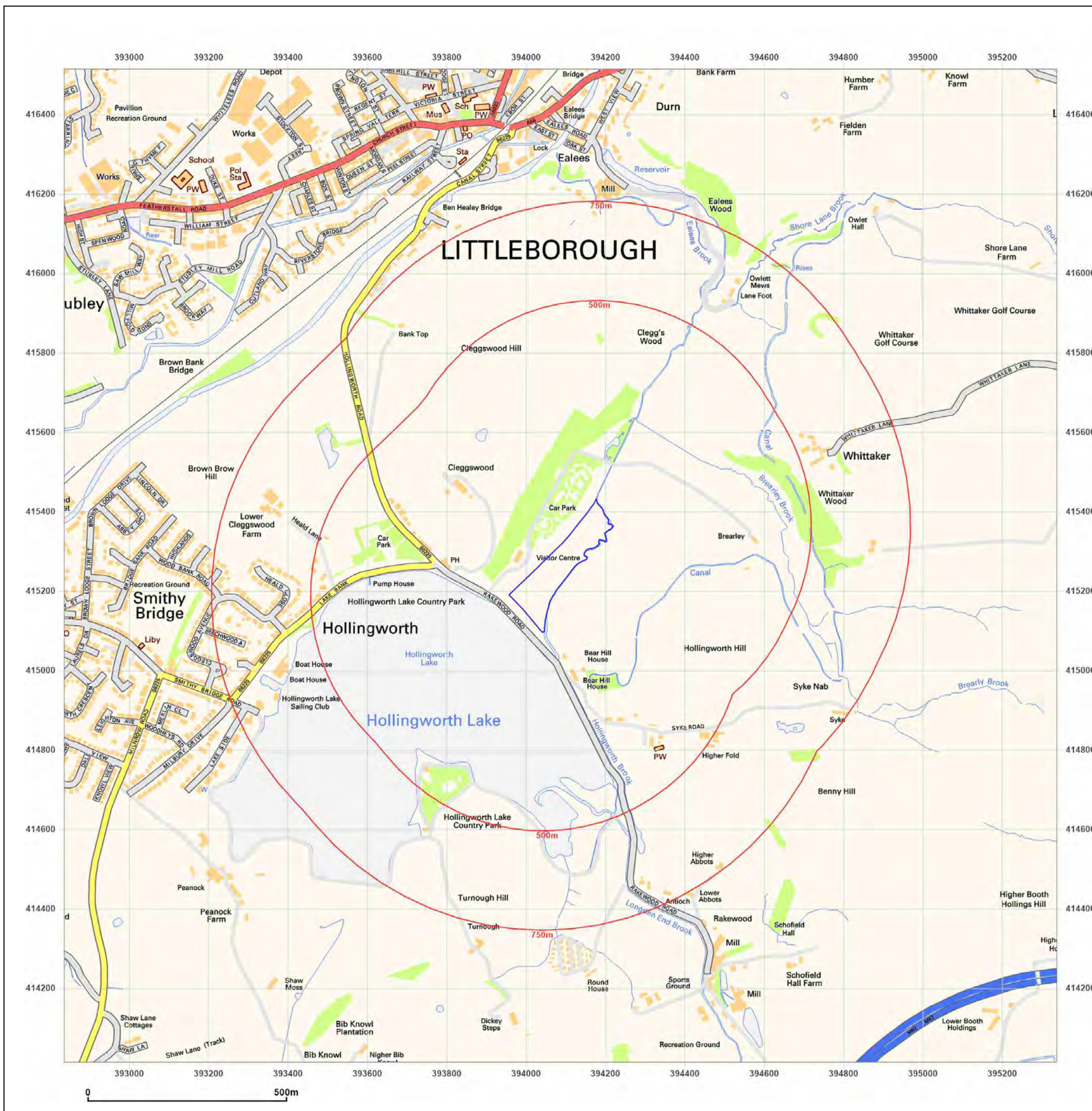


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R
Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 2023

Scale: 1:10,000

Printed at: 1:10,000

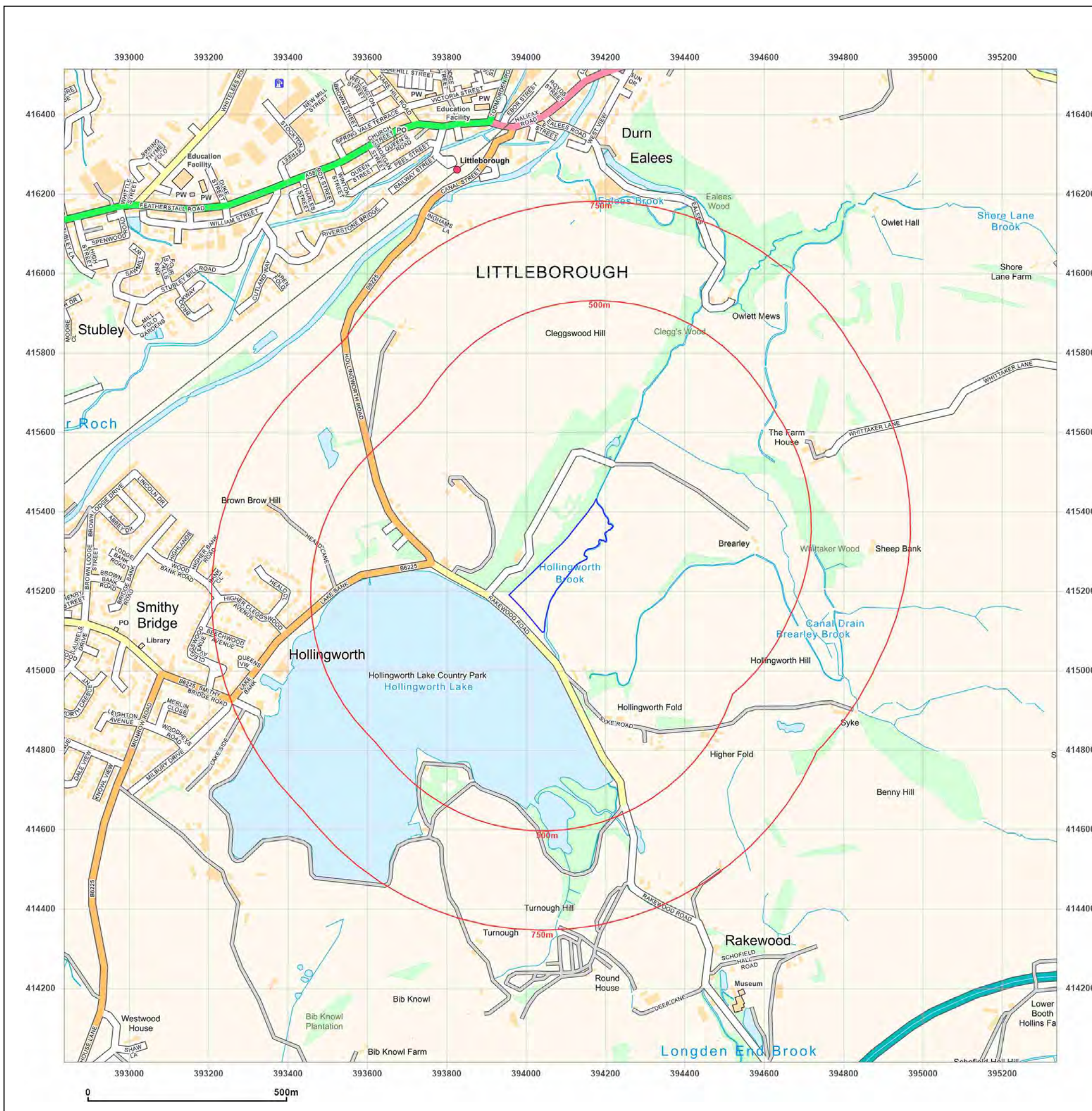


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Site Details:

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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_1
Grid Ref: 394087, 415014

Map Name: National Grid

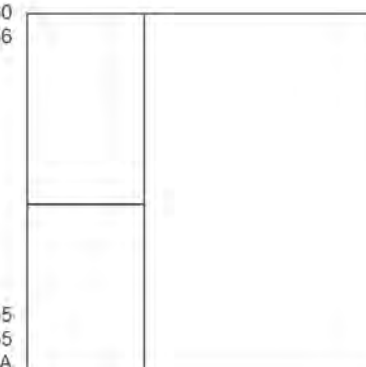
Map date: 1955-1960

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1956



Surveyed 1955
Revised 1955
Edition N/A
Copyright N/A
Levelled 1929

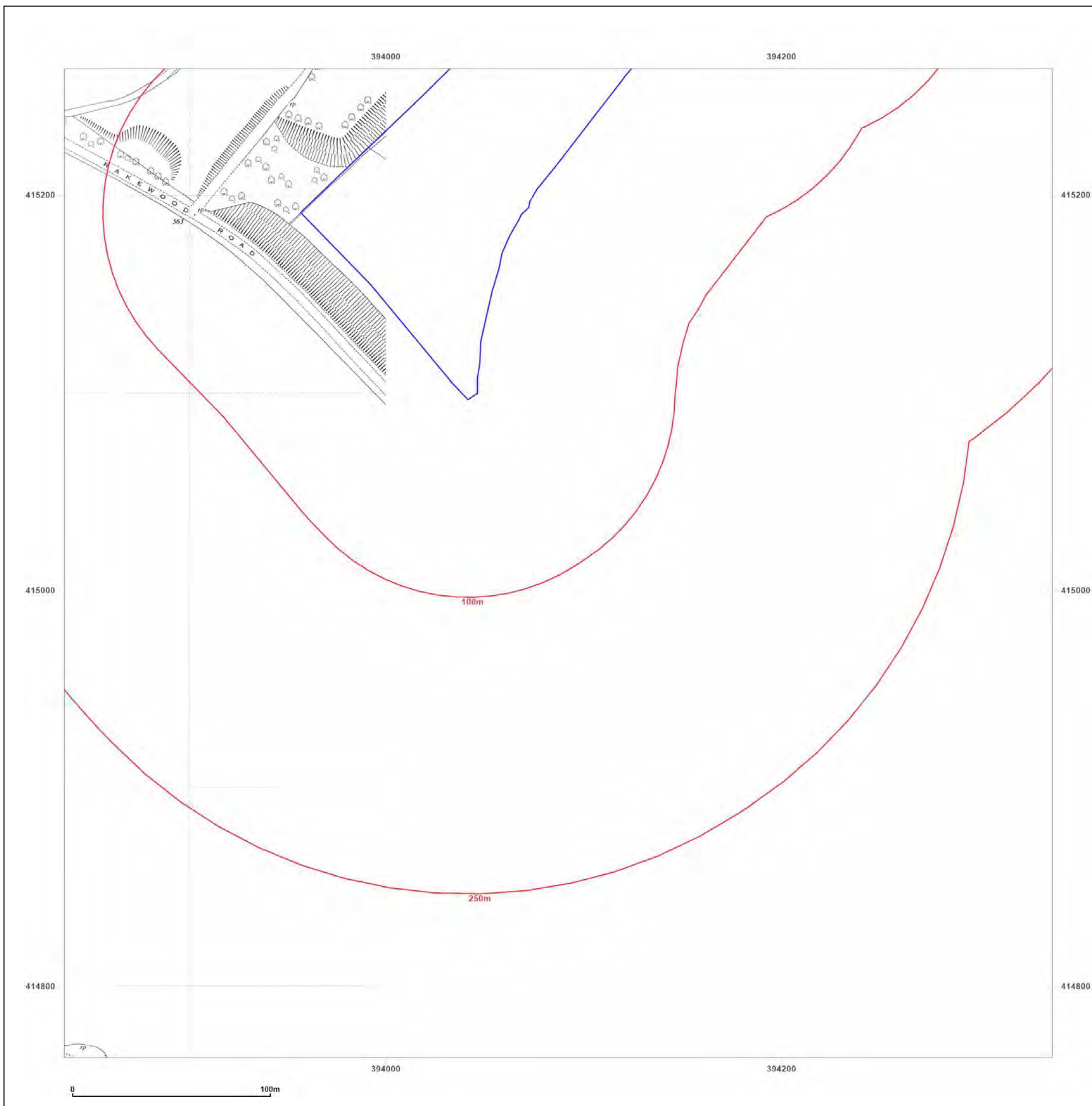


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Site Details:

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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_1
Grid Ref: 394087, 415014

Map Name: National Grid

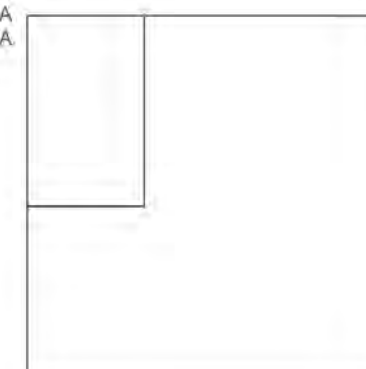
Map date: 1976

Scale: 1:1,250

Printed at: 1:2,000



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

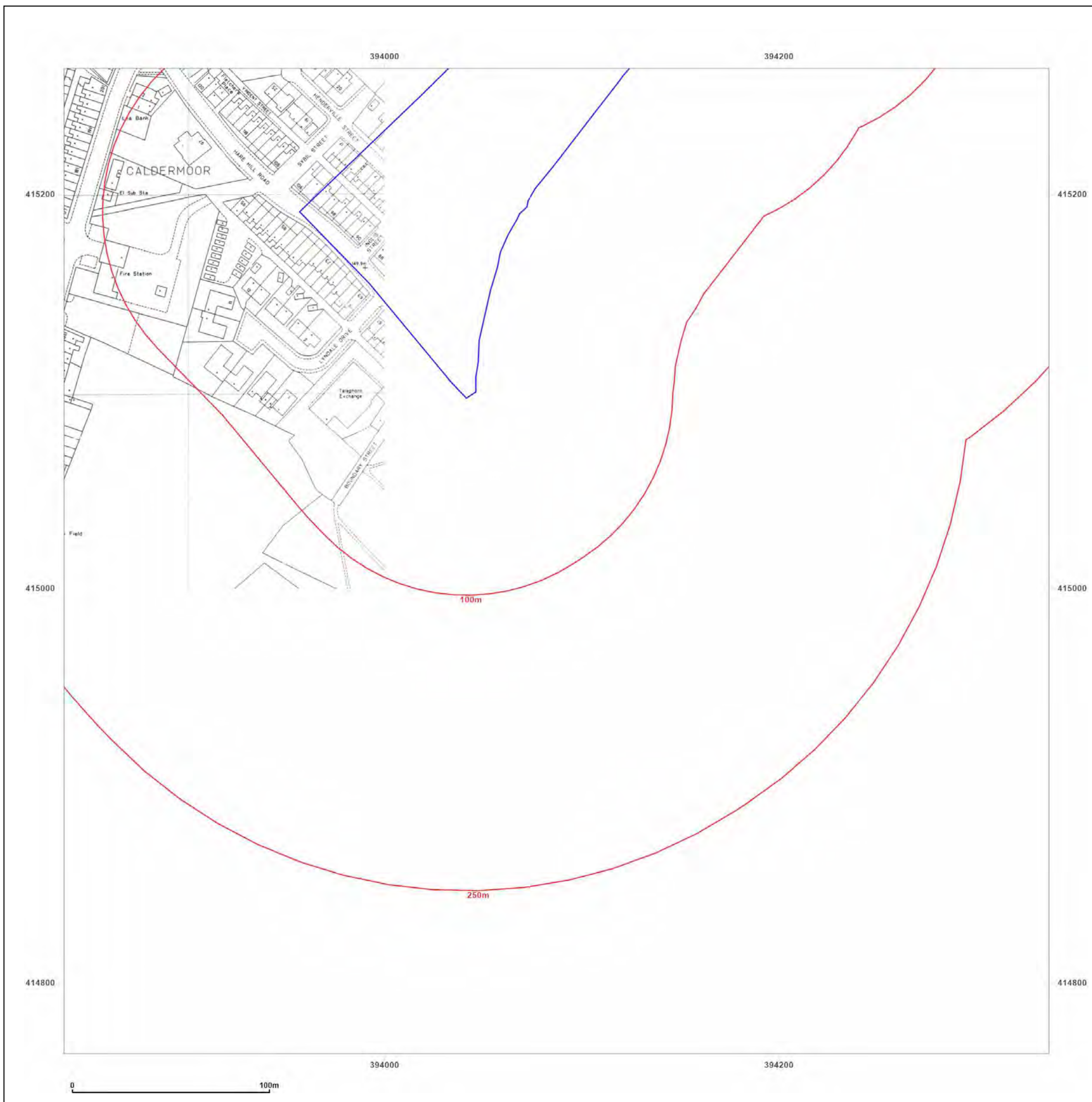


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Site Details:

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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_1
Grid Ref: 394087, 415014

Map Name: National Grid

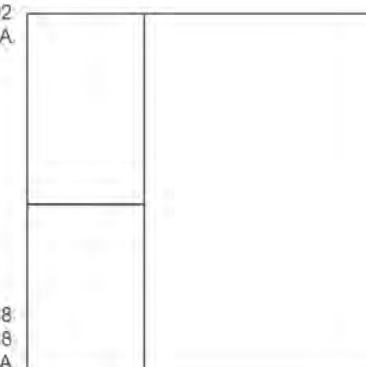
Map date: 1988-1992

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1992
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A



Surveyed 1988
Revised 1988
Edition N/A
Copyright 1988
Levelled N/A

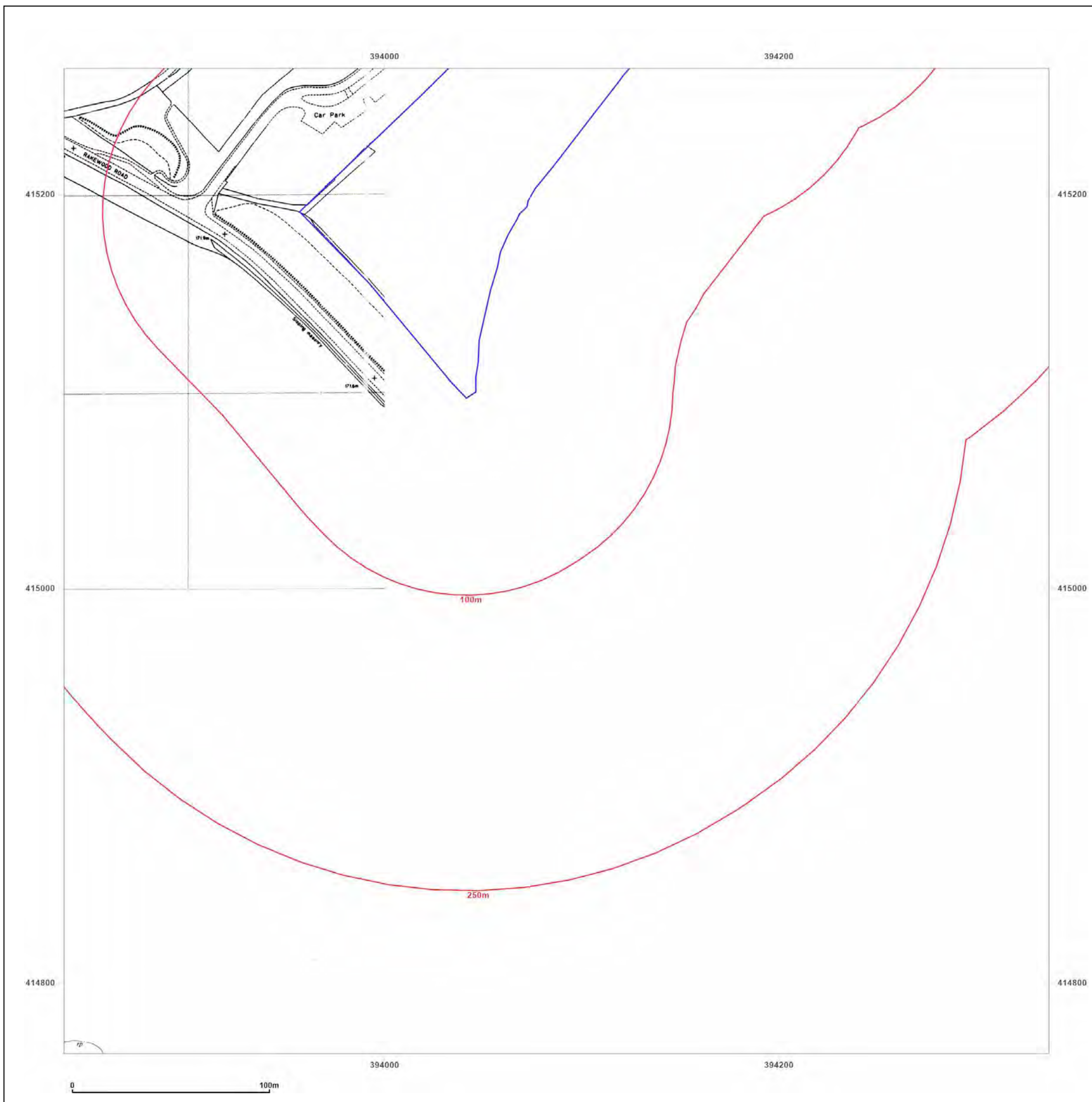


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_1
Grid Ref: 394087, 415014

Map Name: National Grid

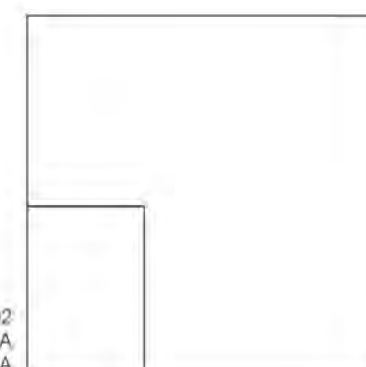
Map date: 1992

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1992
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

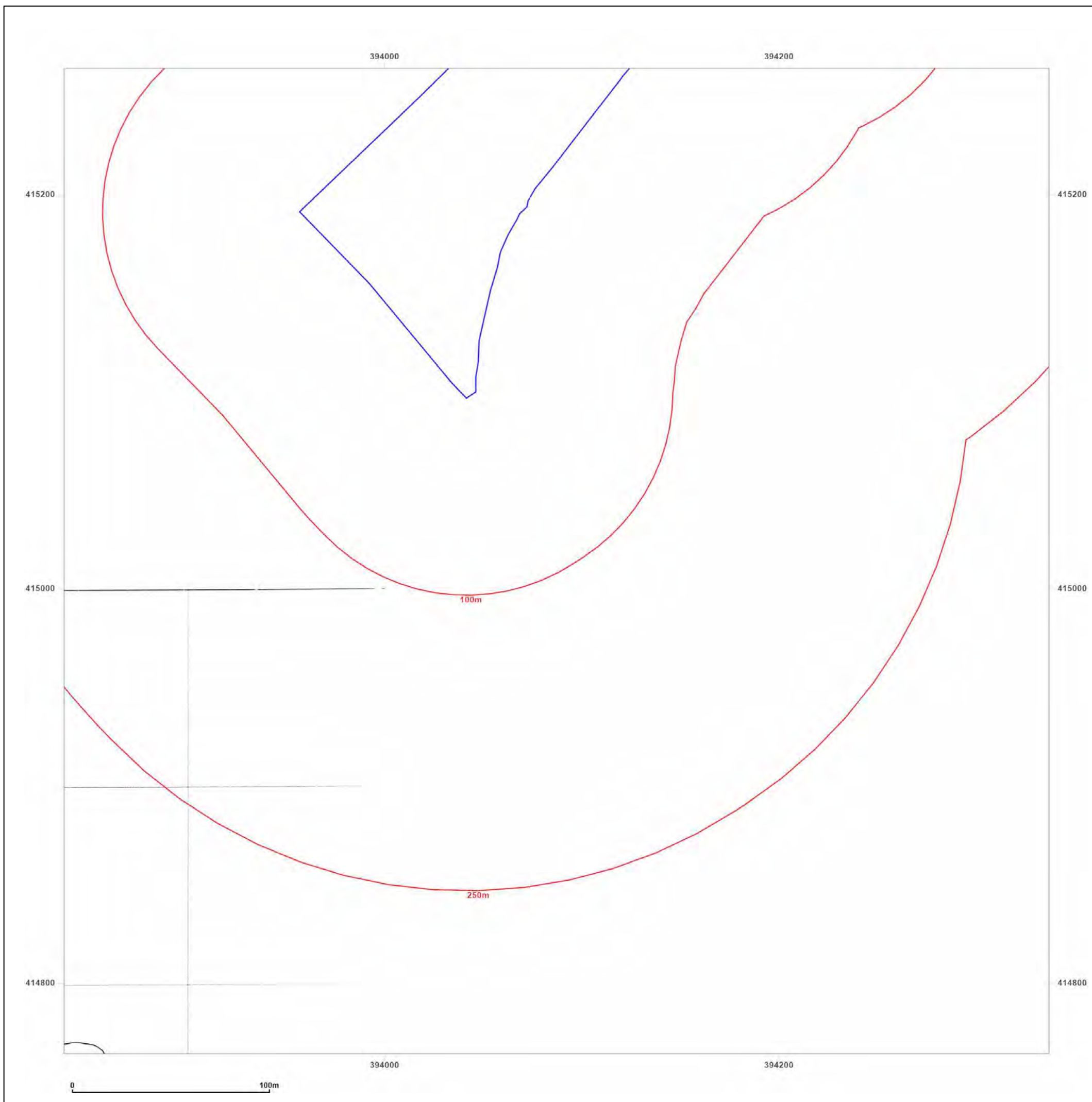


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_2
Grid Ref: 394087, 415514

Map Name: National Grid

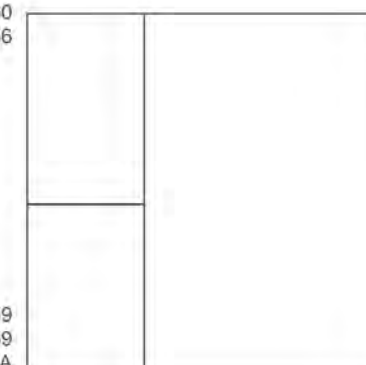
Map date: 1960

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1956



Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1956

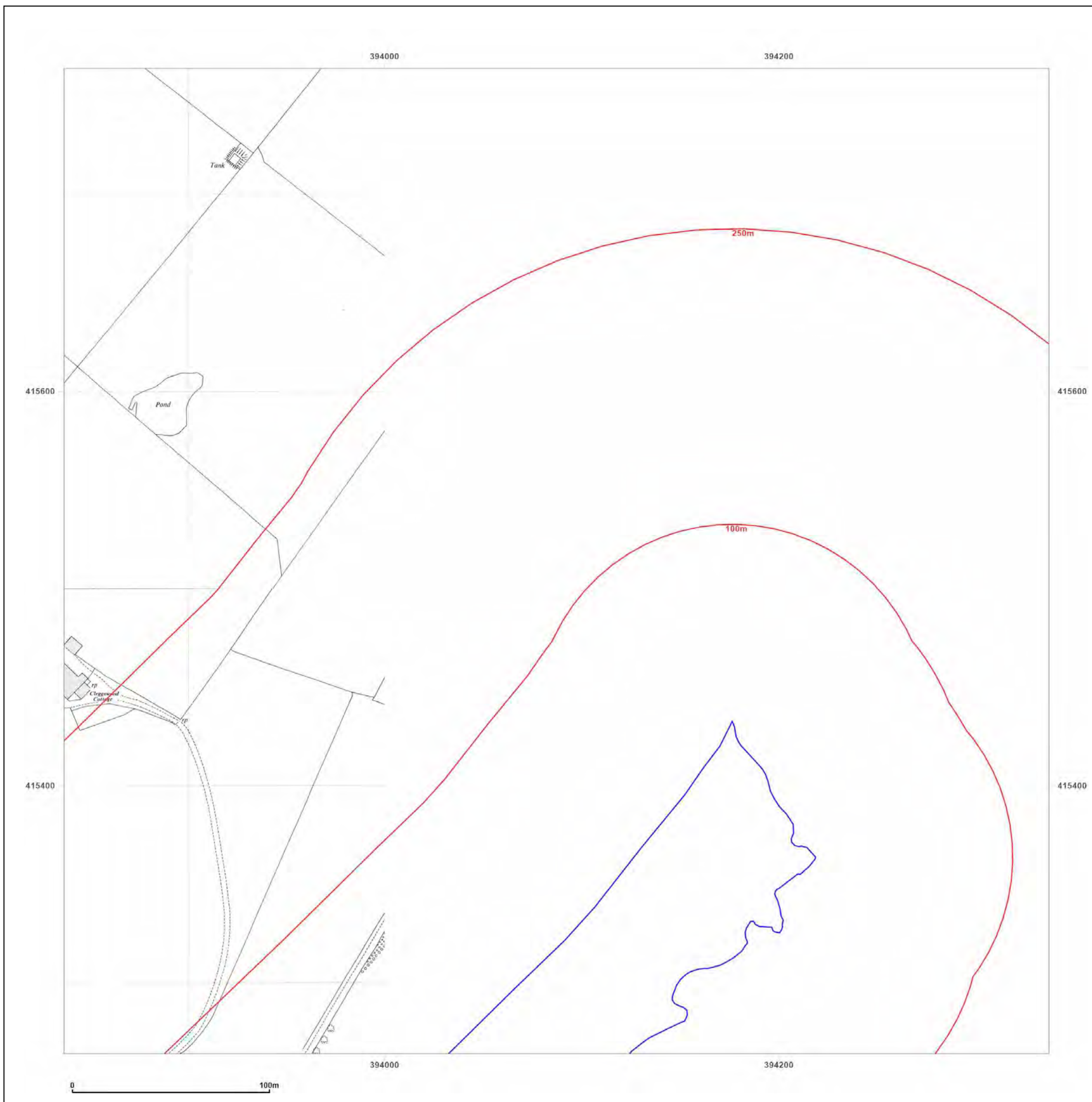


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Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_2
Grid Ref: 394087, 415514

Map Name: National Grid

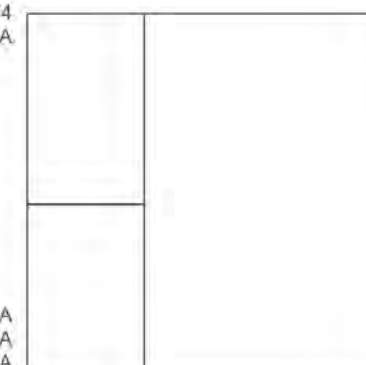
Map date: 1974-1976

Scale: 1:1,250

Printed at: 1:2,000



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



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

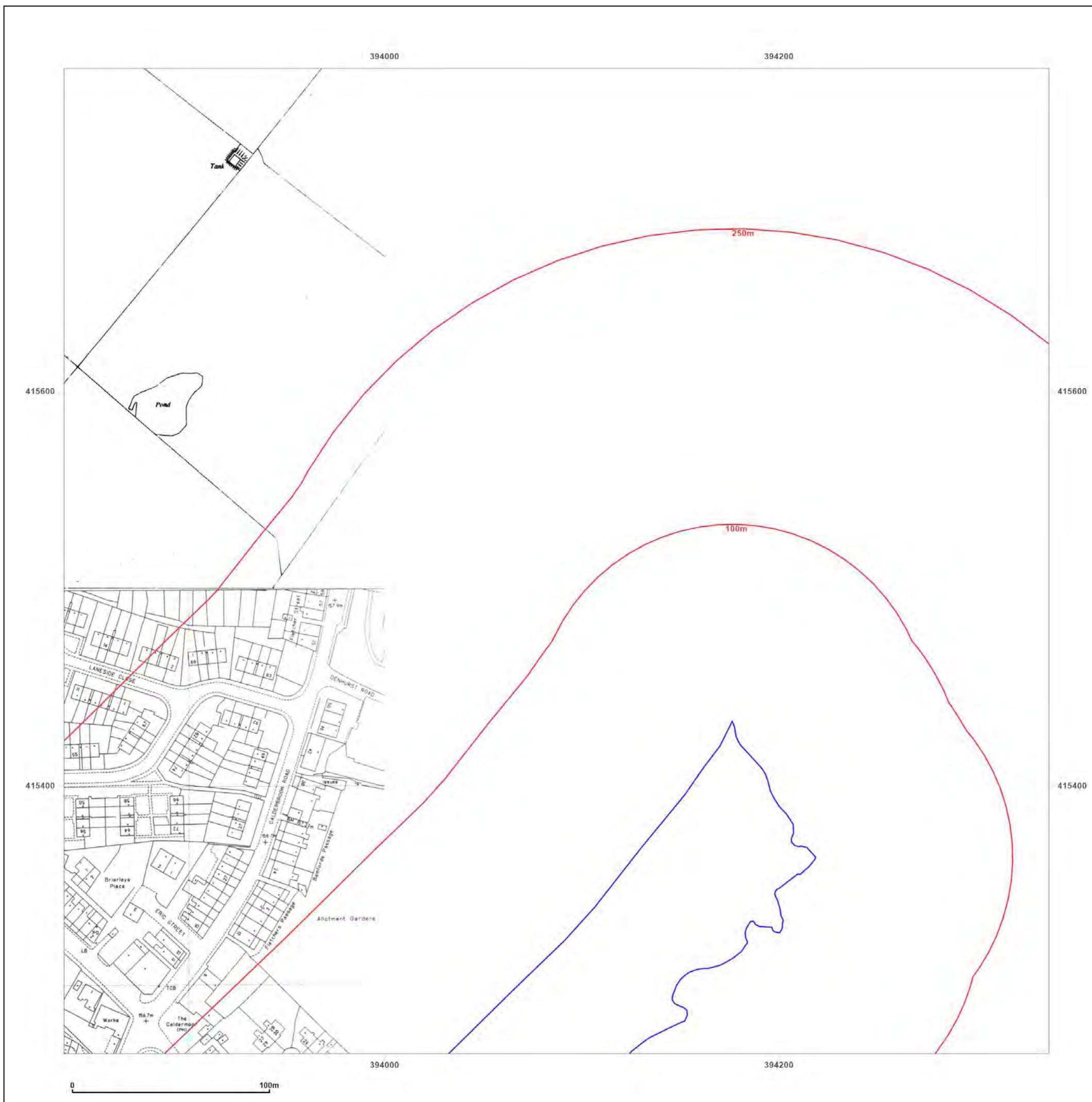


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_2
Grid Ref: 394087, 415514

Map Name: National Grid

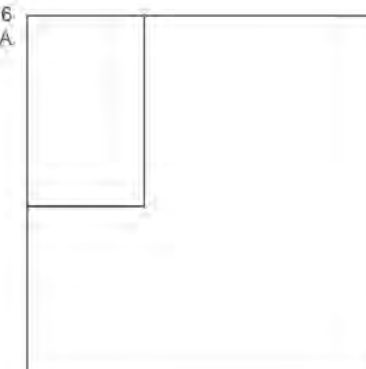
Map date: 1976

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1976
Levelled N/A

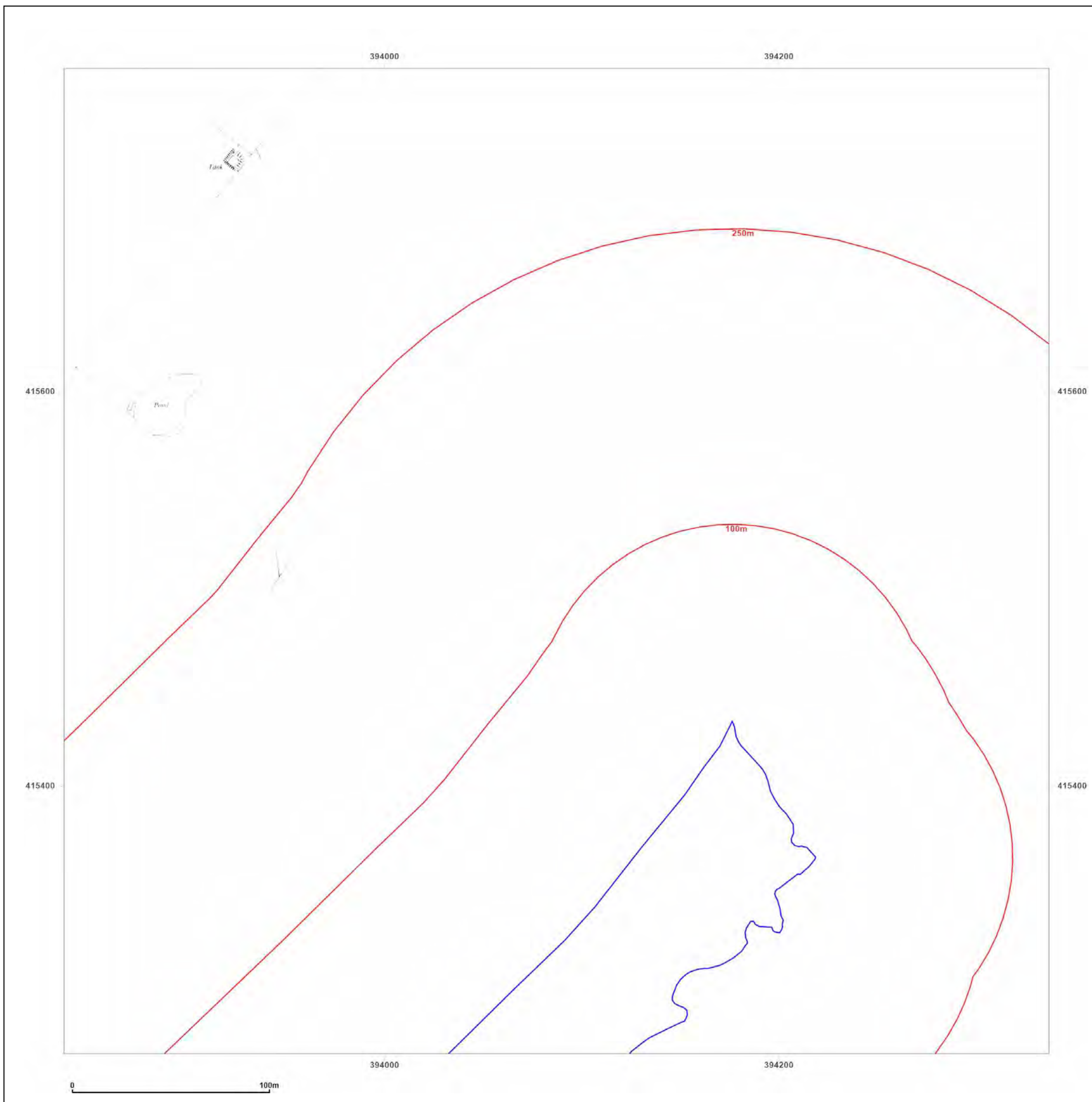


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_2
Grid Ref: 394087, 415514

Map Name: National Grid

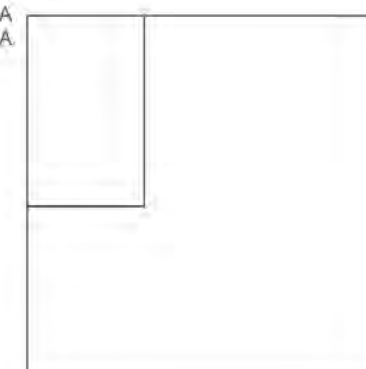
Map date: 1978

Scale: 1:1,250

Printed at: 1:2,000



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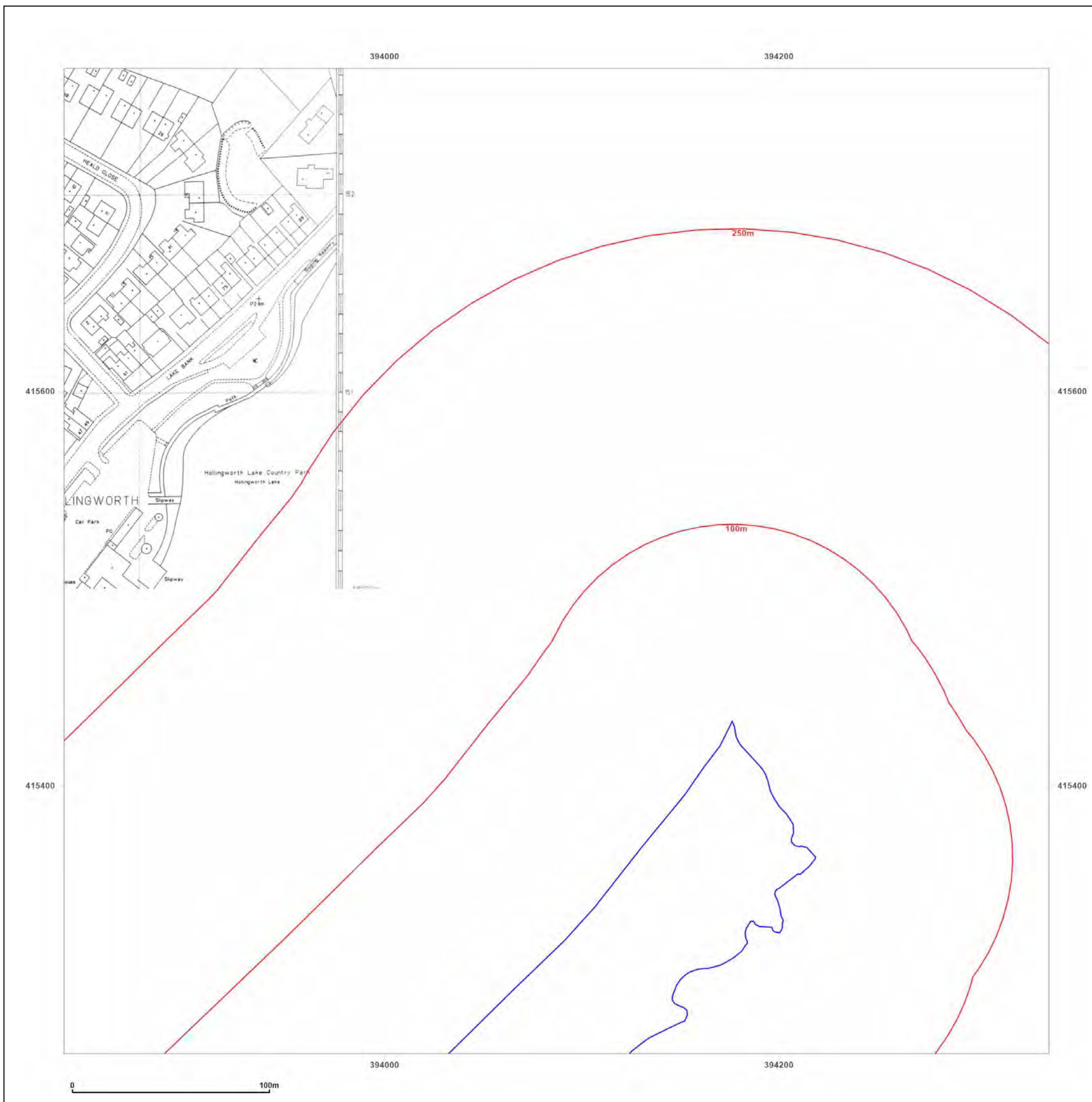


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Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_1250_1_2
Grid Ref: 394087, 415514

Map Name: National Grid

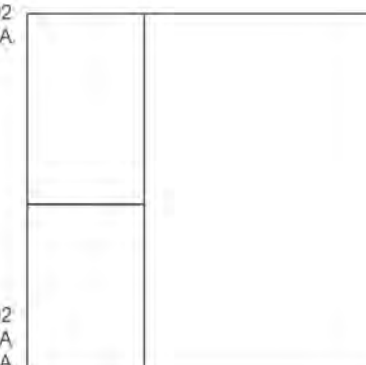
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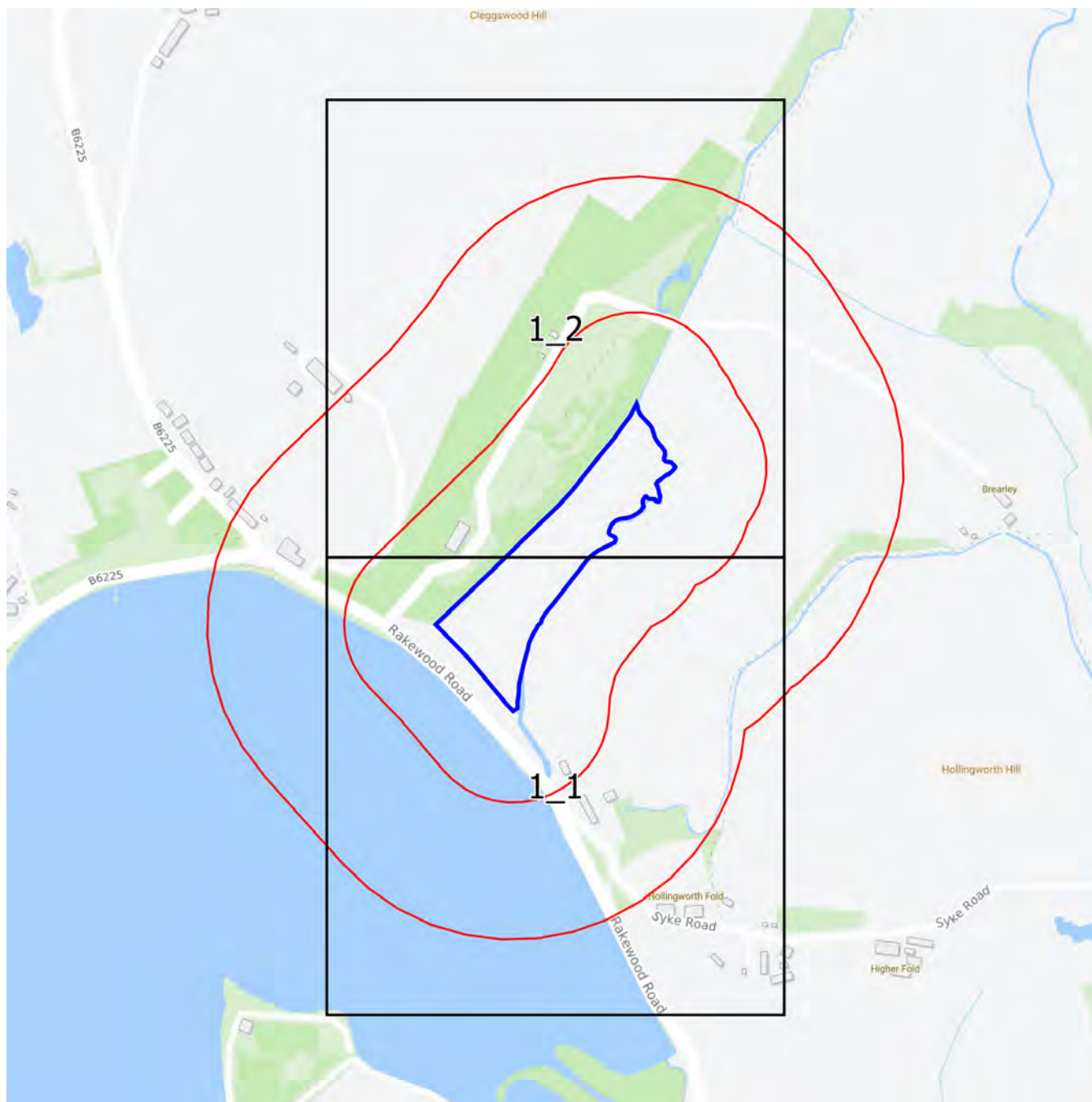


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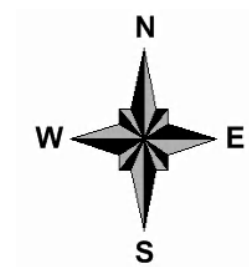
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1:1,250 Scale Grid Index



Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_2500
Grid Ref: 394087, 415264

Map Name: County Series

Map date: 1891

Scale: 1:2,500

Printed at: 1:2,500



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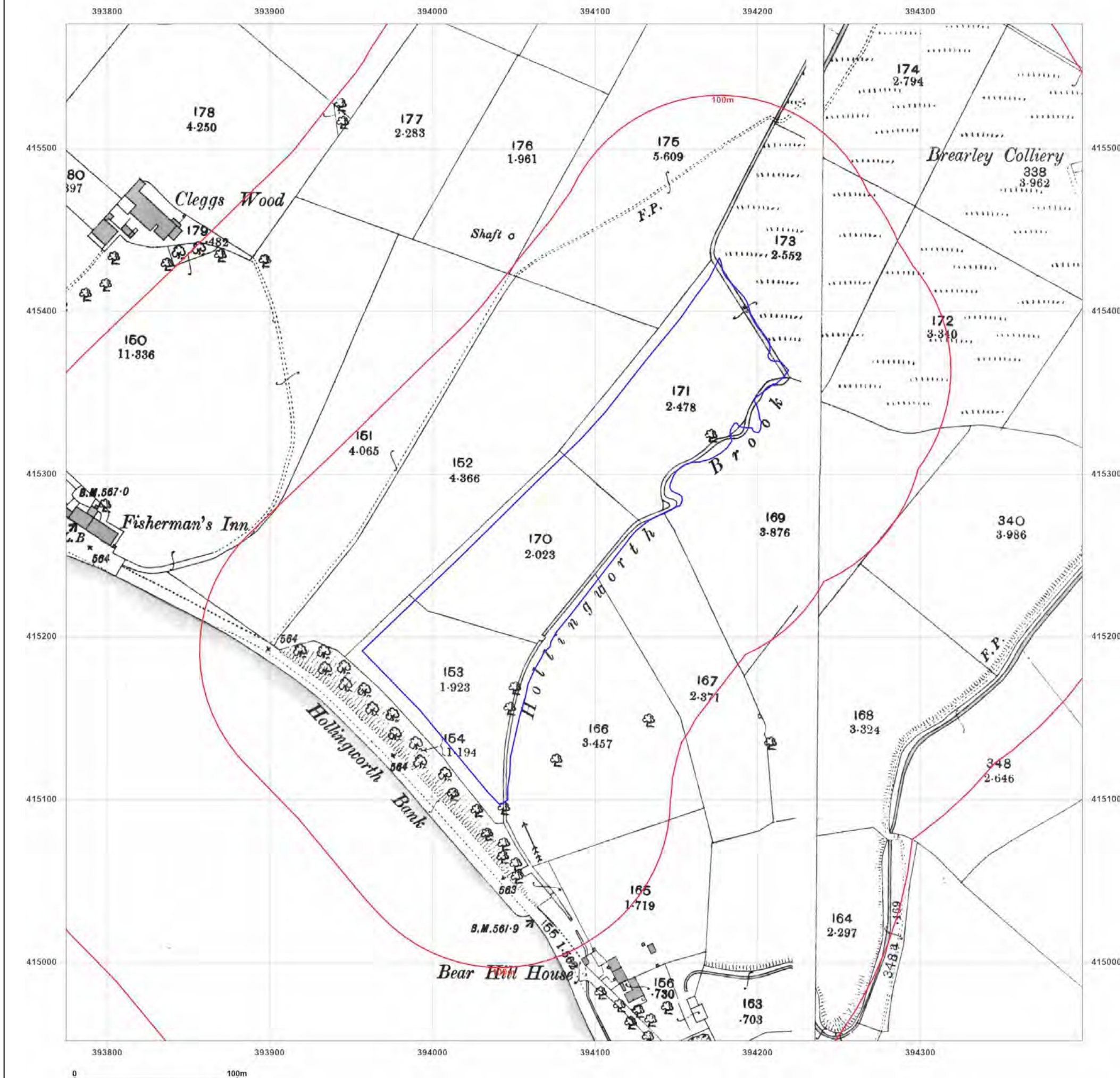


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Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_2500
Grid Ref: 394087, 415264

Map Name: County Series

Map date: 1930

Scale: 1:2,500

Printed at: 1:2,500



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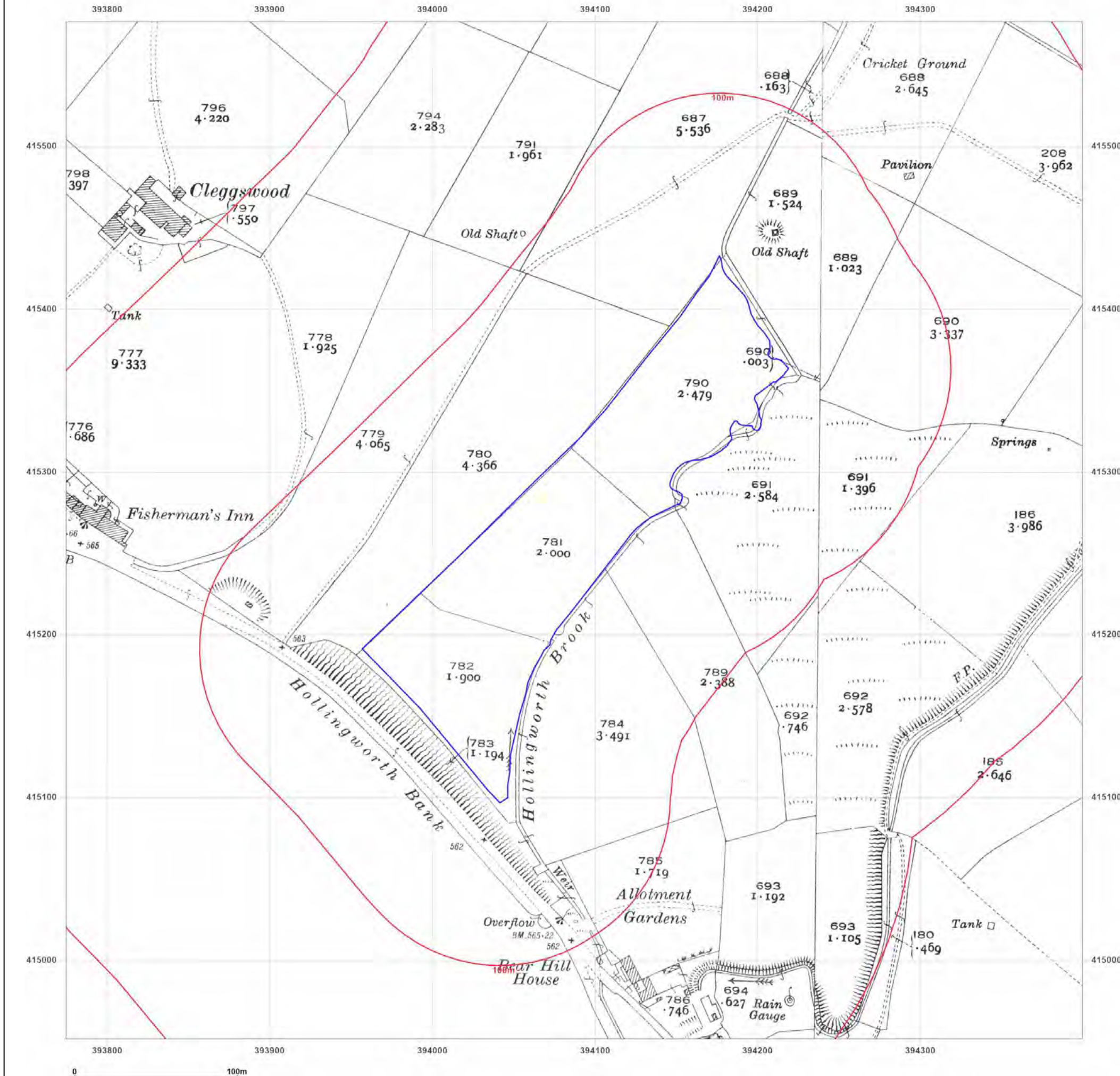


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Site Details:

RAKEWOOD ROAD,
LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_2500
Grid Ref: 394087, 415264

Map Name: County Series

Map date: 1938

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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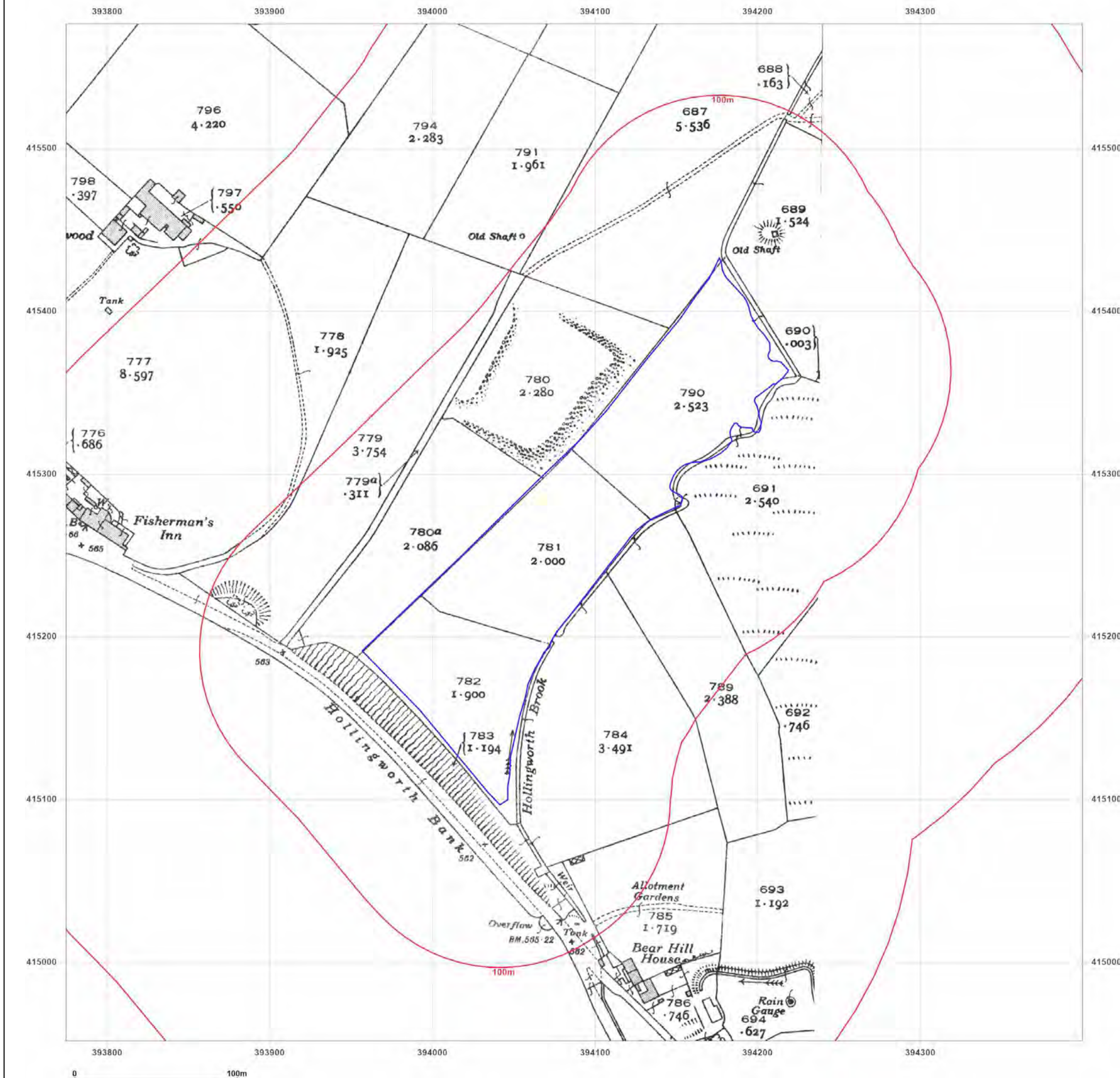


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_2500
Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 1955-1959

Scale: 1:2,500

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Edition 1956
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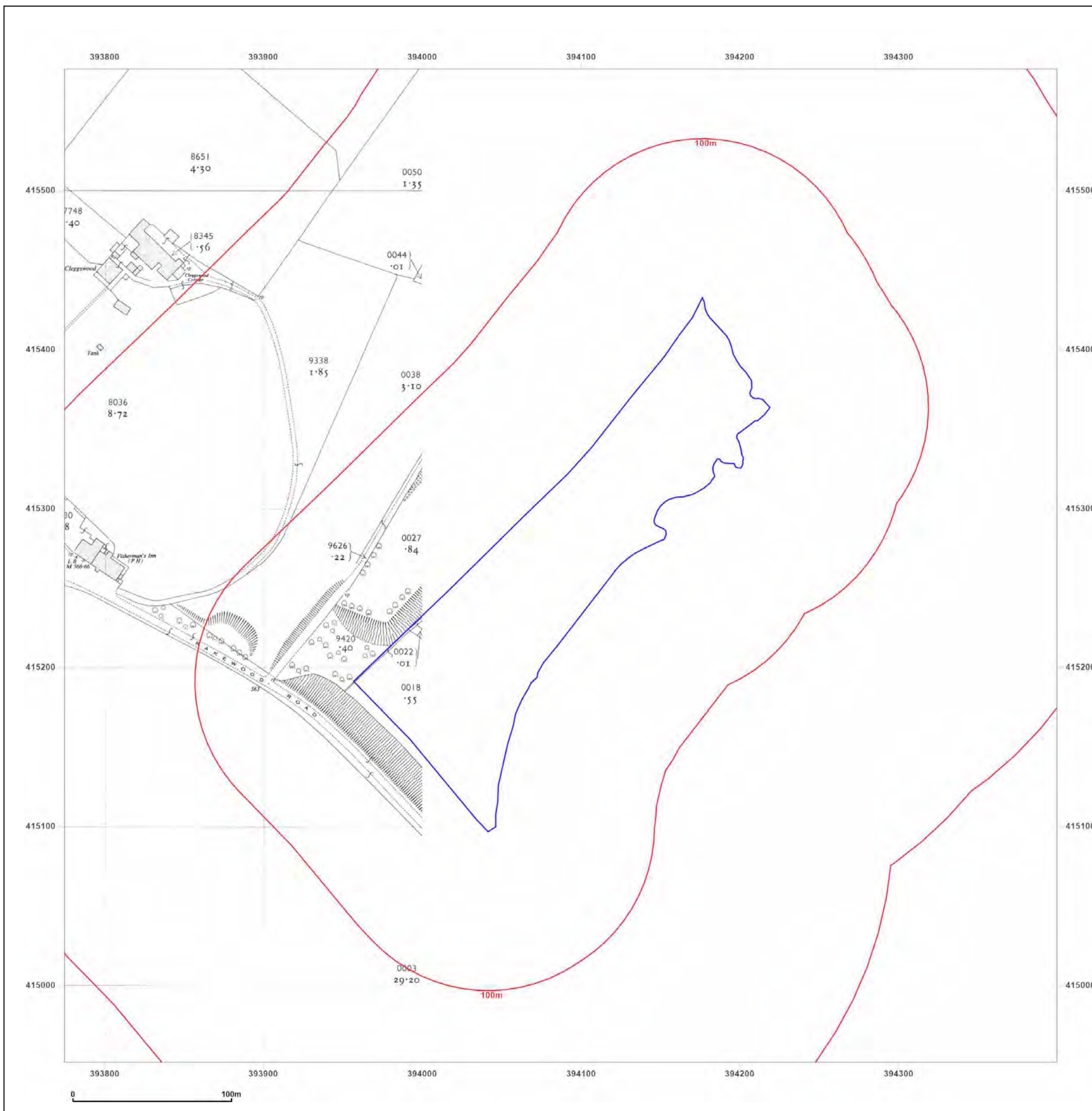


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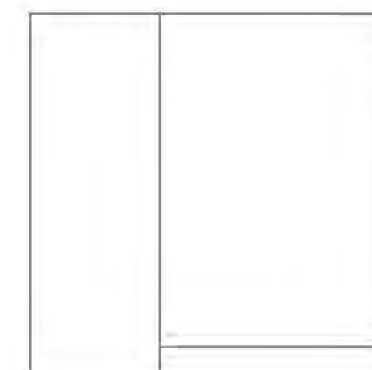
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Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 1963-1964

Scale: 1:2,500

Printed at: 1:2,500



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Revised N/A
Edition N/A
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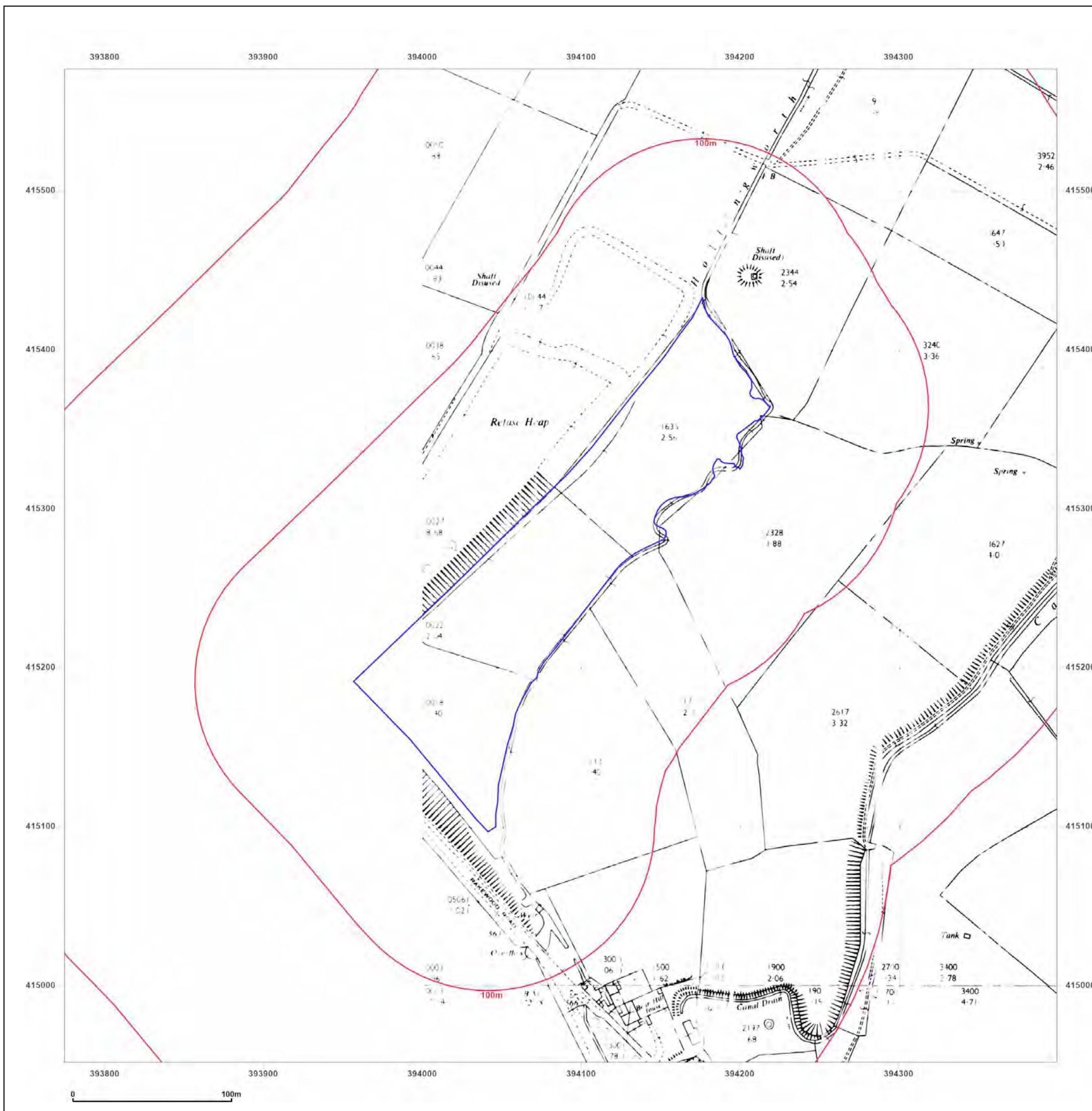


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Site Details:

RAKEWOOD ROAD,
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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_2500
Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 1983-1988

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1983
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Edition N/A
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Levelled 1962

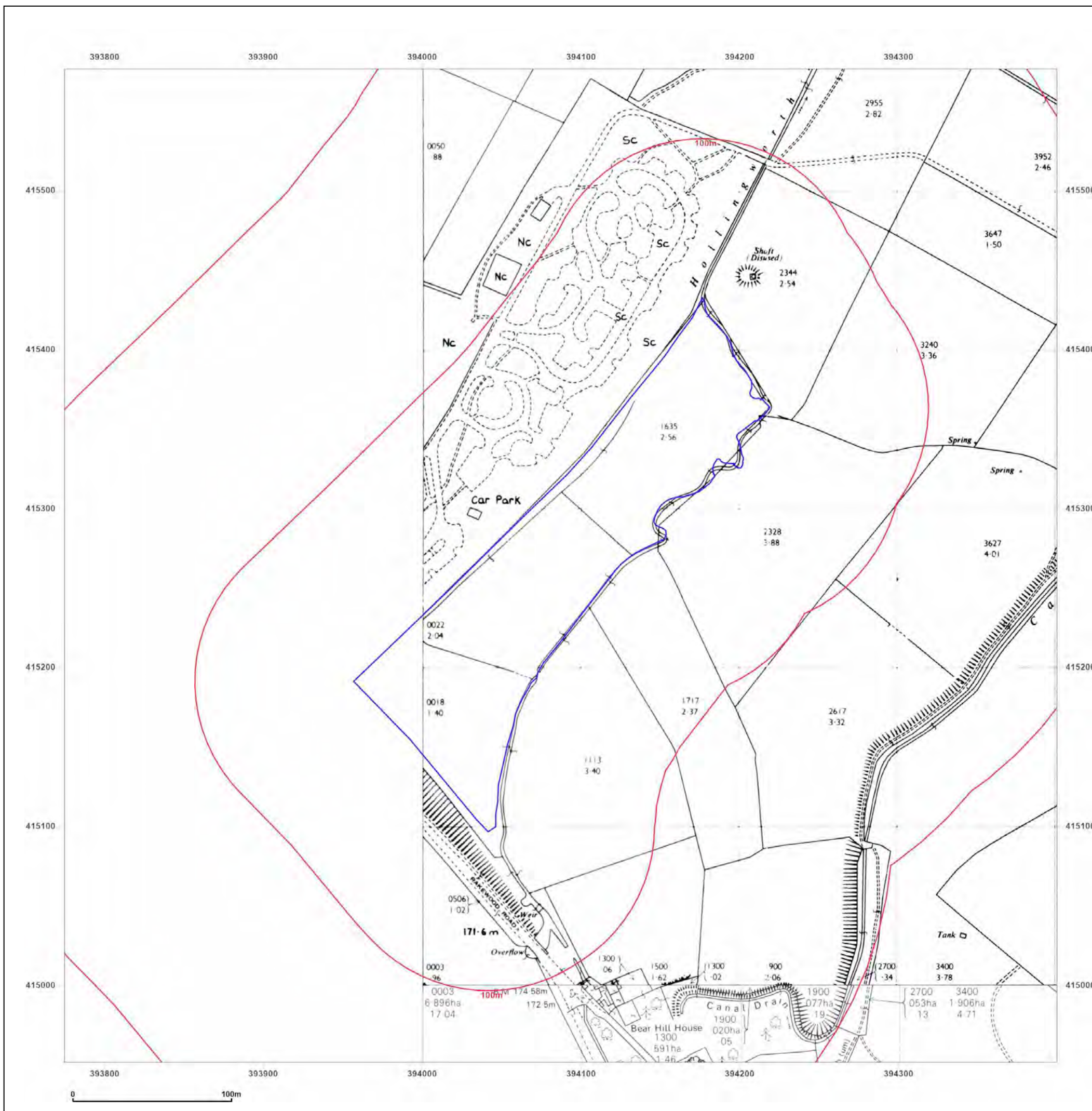


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Site Details:

RAKEWOOD ROAD,
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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_2500
Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 1992

Scale: 1:2,500

Printed at: 1:2,500



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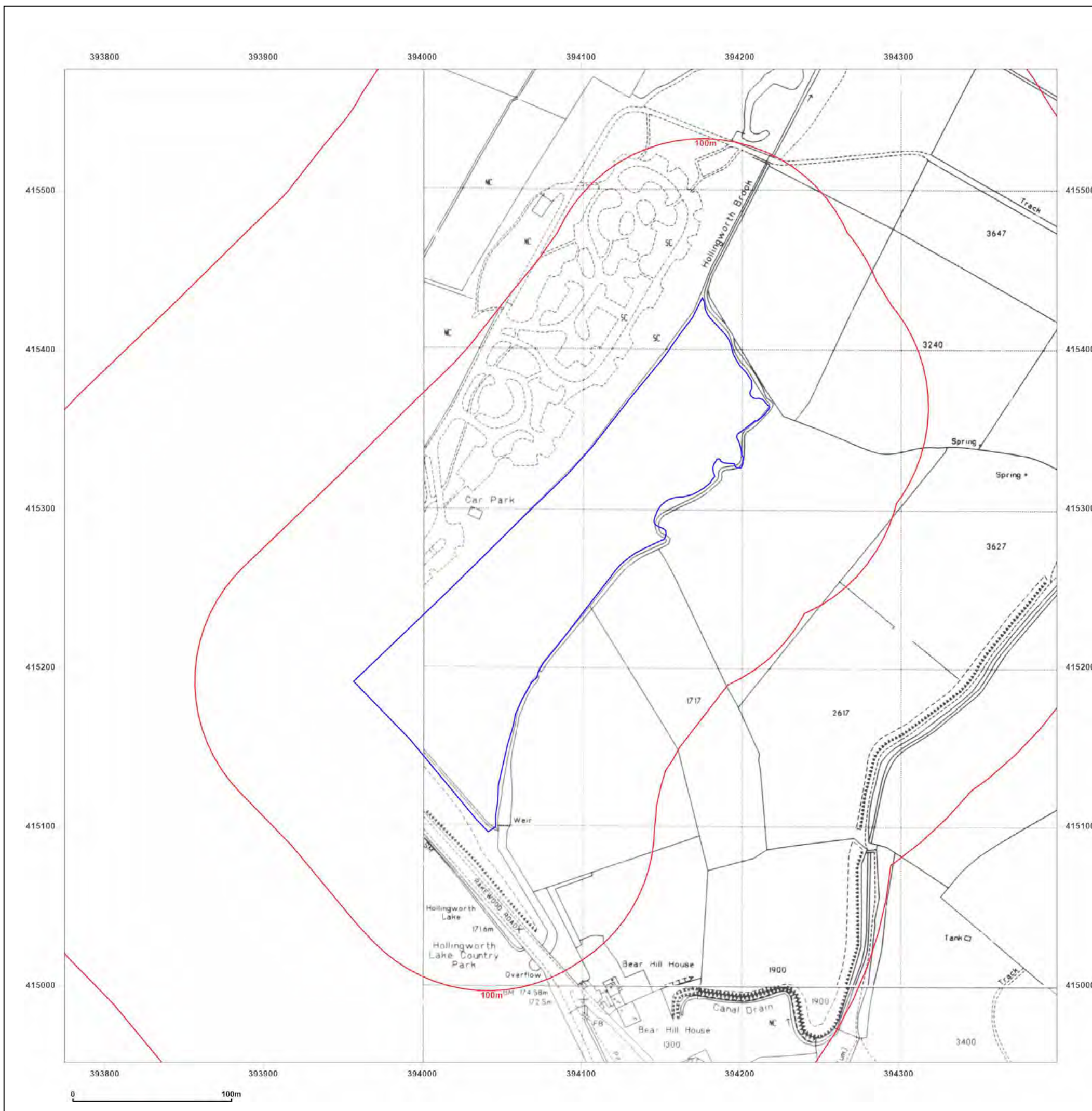


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Site Details:

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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_2500
Grid Ref: 394087, 415264

Map Name: National Grid

Map date: 1992

Scale: 1:2,500

Printed at: 1:2,500



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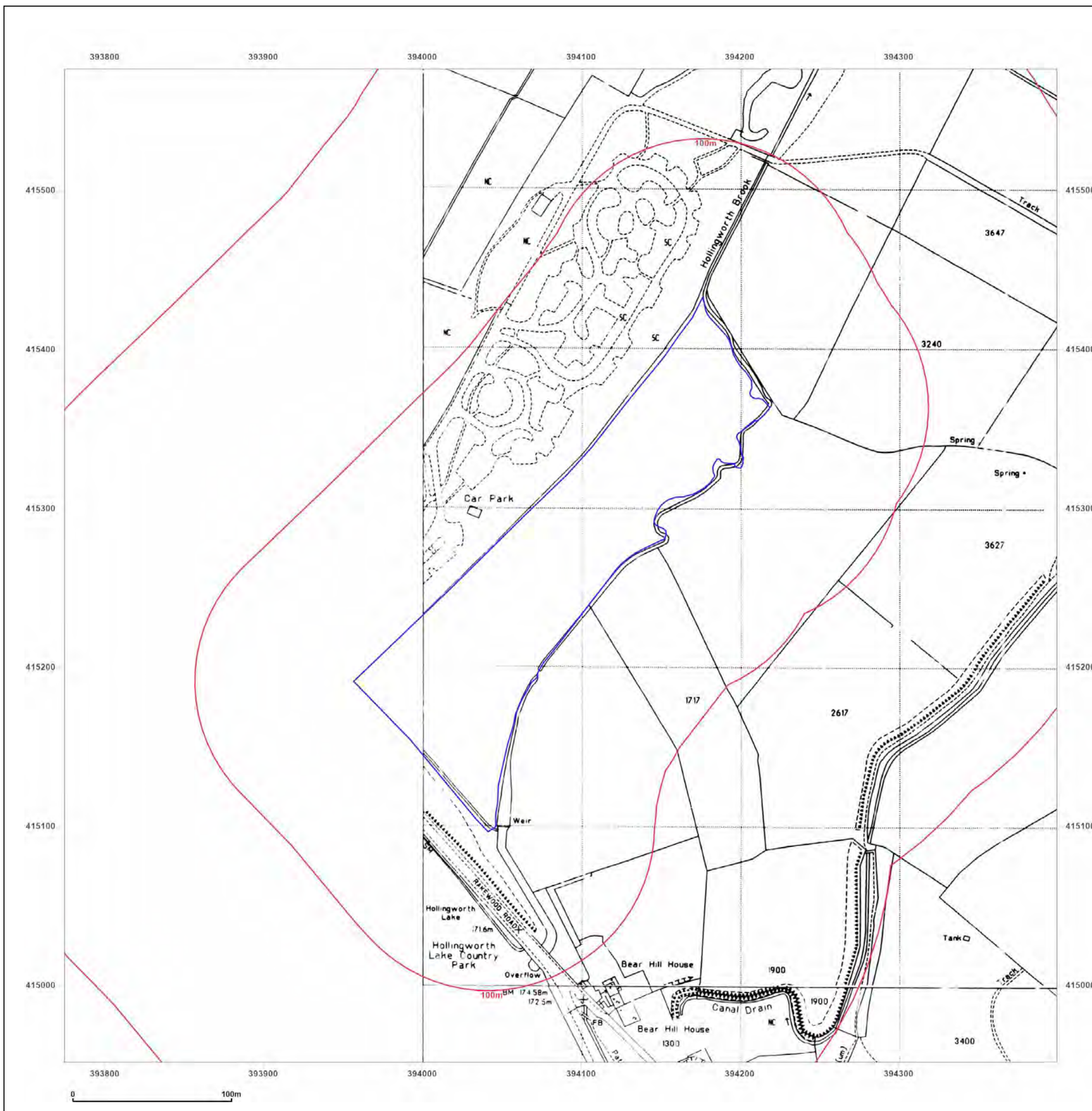


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Site Details:

RAKEWOOD ROAD,
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Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_Landline_1_1
Grid Ref: 394087, 415114

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250

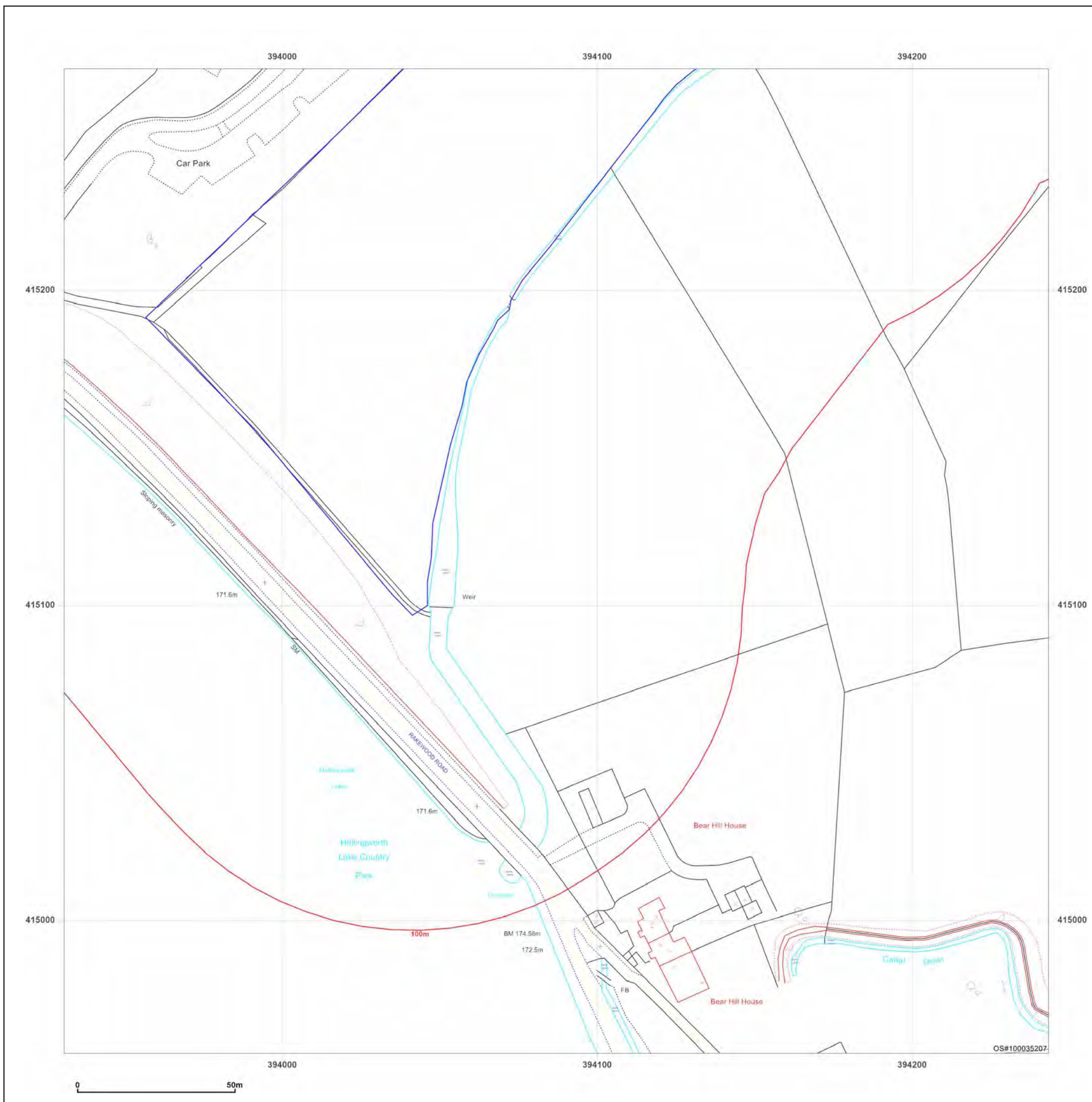


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Site Details:

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LITTLEBOROUGH, OL15 0AQ

Client Ref: 23FTP1004
Report Ref: GS-MTT-CPI-ES8-H5R_Landline_1_2
Grid Ref: 394087, 415414

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250

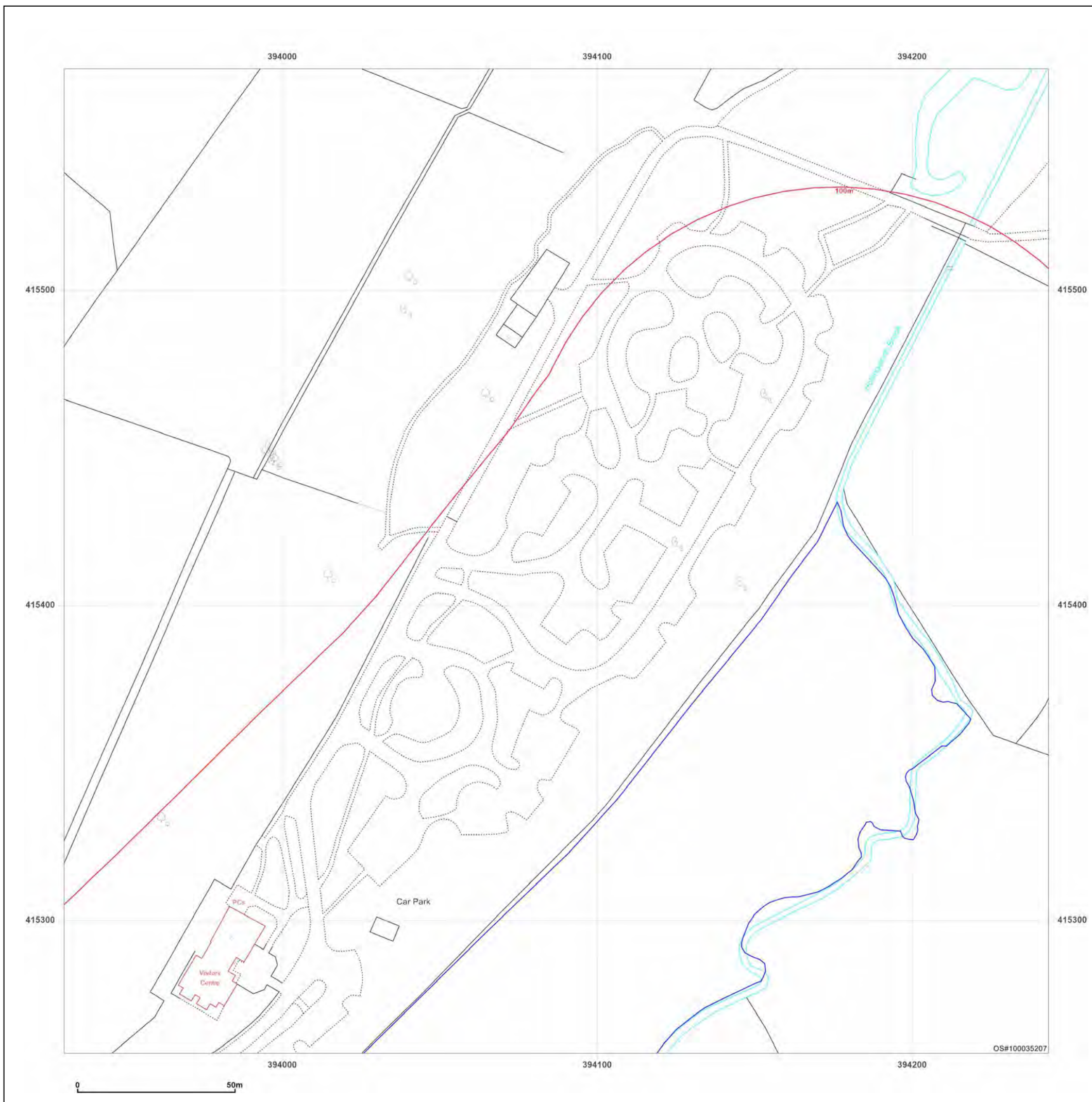


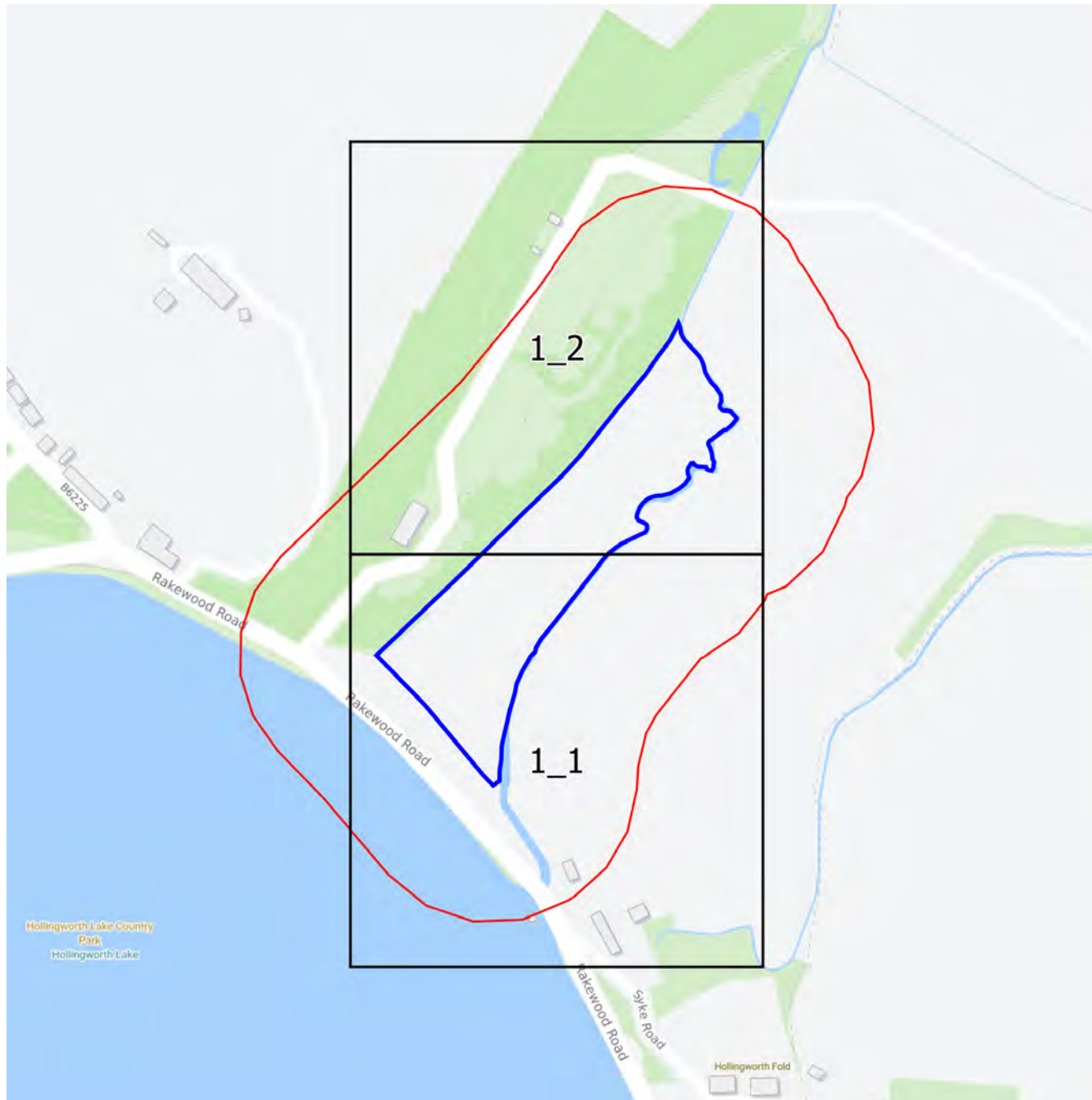
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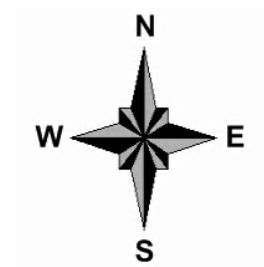
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Groundsure
INSIGHTS

Landline Scale Grid Index



APPENDIX C

(i) Groundsure Report

RAKEWOOD ROAD, LITTLEBOROUGH, OL15 0AQ

Order Details

Date: 17/11/2023
Your ref: 23FTP1004
Our Ref: GS-8EF-MV3-7SW-A25

Site Details

Location: 394023 415162
Area: 2.44 ha
Authority: [Rochdale Metropolitan Borough Council](#) ↗



Summary of findings

[p. 2 >](#)

Aerial image

[p. 9 >](#)

OS MasterMap site plan

[p.14 >](#)

groundsure.com/insightuserguide ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	1	11	29	45	-
19 >	1.2 >	Historical tanks >	0	0	2	11	-
20 >	1.3 >	Historical energy features >	0	0	1	0	-
20	1.4	Historical petrol stations	0	0	0	0	-
20	1.5	Historical garages	0	0	0	0	-
21	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
22 >	2.1 >	Historical industrial land uses >	1	14	37	59	-
27 >	2.2 >	Historical tanks >	0	0	2	19	-
28 >	2.3 >	Historical energy features >	0	0	1	0	-
28	2.4	Historical petrol stations	0	0	0	0	-
28	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
29	3.1	Active or recent landfill	0	0	0	0	-
29 >	3.2 >	Historical landfill (BGS records) >	0	0	1	0	-
30	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
30 >	3.4 >	Historical landfill (EA/NRW records) >	1	0	0	0	-
30 >	3.5 >	Historical waste sites >	0	0	0	1	-
31	3.6	Licensed waste sites	0	0	0	0	-
31	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
32 >	4.1 >	Recent industrial land uses >	0	0	2	-	-
33	4.2	Current or recent petrol stations	0	0	0	0	-
33	4.3	Electricity cables	0	0	0	0	-
33	4.4	Gas pipelines	0	0	0	0	-
33	4.5	Sites determined as Contaminated Land	0	0	0	0	-



33	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
34	4.7	Regulated explosive sites	0	0	0	0	-
34	4.8	Hazardous substance storage/usage	0	0	0	0	-
34	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
34	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
34	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
35	4.12	Radioactive Substance Authorisations	0	0	0	0	-
35 >	4.13 >	<u>Licensed Discharges to controlled waters ></u>	0	0	4	4	-
36	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
36	4.15	Pollutant release to public sewer	0	0	0	0	-
37	4.16	List 1 Dangerous Substances	0	0	0	0	-
37	4.17	List 2 Dangerous Substances	0	0	0	0	-
37 >	4.18 >	<u>Pollution Incidents (EA/NRW) ></u>	0	0	0	1	-
37	4.19	Pollution inventory substances	0	0	0	0	-
38	4.20	Pollution inventory waste transfers	0	0	0	0	-
38	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
39 >	5.1 >	<u>Superficial aquifer ></u>	Identified (within 500m)				
41 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
43 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
45	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
45	5.5	Groundwater vulnerability- local information	None (within 0m)				
46 >	5.6 >	<u>Groundwater abstractions ></u>	0	0	0	0	11
49 >	5.7 >	<u>Surface water abstractions ></u>	0	0	0	0	42
60 >	5.8 >	<u>Potable abstractions ></u>	0	0	0	0	5
62	5.9	Source Protection Zones	0	0	0	0	-
62	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
63 >	6.1 >	<u>Water Network (OS MasterMap) ></u>	0	3	15	-	-



65 >	6.2 >	Surface water features >	1	1	7	-	-
65 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
66 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
66 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
67	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
67	7.2	Historical Flood Events	0	0	0	-	-
67	7.3	Flood Defences	0	0	0	-	-
68	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
68	7.5	Flood Storage Areas	0	0	0	-	-
69	7.6	Flood Zone 2	None (within 50m)				
69	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
70 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
72 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
73 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	3
74	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
74 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	0	3
75 >	10.4 >	Special Protection Areas (SPA) >	0	0	0	0	4
76	10.5	National Nature Reserves (NNR)	0	0	0	0	0
76	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
76 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	4
77	10.8	Biosphere Reserves	0	0	0	0	0
77	10.9	Forest Parks	0	0	0	0	0
77	10.10	Marine Conservation Zones	0	0	0	0	0
77 >	10.11 >	Green Belt >	1	0	0	0	0
78	10.12	Proposed Ramsar sites	0	0	0	0	0



78	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
78	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
78	10.15	Nitrate Sensitive Areas	0	0	0	0	0
79	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
80 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
82 >	10.18 >	SSSI Units >	0	0	0	0	3
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
84	11.1	World Heritage Sites	0	0	0	-	-
85	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
85	11.3	National Parks	0	0	0	-	-
85 >	11.4 >	Listed Buildings >	0	0	1	-	-
86 >	11.5 >	Conservation Areas >	0	0	1	-	-
86	11.6	Scheduled Ancient Monuments	0	0	0	-	-
86	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
87 >	12.1 >	Agricultural Land Classification >	Grade 4 (within 250m)				
88	12.2	Open Access Land	0	0	0	-	-
88	12.3	Tree Felling Licences	0	0	0	-	-
88	12.4	Environmental Stewardship Schemes	0	0	0	-	-
88 >	12.5 >	Countryside Stewardship Schemes >	0	1	2	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
90 >	13.1 >	Priority Habitat Inventory >	1	15	28	-	-
92	13.2	Habitat Networks	0	0	0	-	-
92	13.3	Open Mosaic Habitat	0	0	0	-	-
93	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
94 >	14.1 >	10k Availability >	Identified (within 500m)				
95 >	14.2 >	Artificial and made ground (10k) >	1	0	7	4	-
97 >	14.3 >	Superficial geology (10k) >	1	3	2	4	-



98 >	14.4 >	Landslip (10k) >	0	1	2	0	-
99 >	14.5 >	Bedrock geology (10k) >	4	2	7	20	-
101 >	14.6 >	Bedrock faults and other linear features (10k) >	1	2	10	23	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
103 >	15.1 >	50k Availability >	Identified (within 500m)				
104 >	15.2 >	Artificial and made ground (50k) >	1	0	0	0	-
105 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
106 >	15.4 >	Superficial geology (50k) >	1	3	0	3	-
107 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
107 >	15.6 >	Landslip (50k) >	0	1	0	0	-
108 >	15.7 >	Landslip permeability (50k) >	Identified (within 50m)				
109 >	15.8 >	Bedrock geology (50k) >	4	1	6	13	-
111 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
111 >	15.10 >	Bedrock faults and other linear features (50k) >	1	1	8	12	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
113	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence >					
114 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
115 >	17.2 >	Running sands >	Low (within 50m)				
117 >	17.3 >	Compressible deposits >	Moderate (within 50m)				
119 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
121 >	17.5 >	Landslides >	High (within 50m)				
123 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
125 >	18.1 >	BritPits >	0	0	1	4	-
126 >	18.2 >	Surface ground workings >	1	18	28	-	-
128 >	18.3 >	Underground workings >	0	7	10	8	52
131	18.4	Underground mining extents	0	0	0	0	-
132	18.5	Historical Mineral Planning Areas	0	0	0	0	-



132	18.6	Non-coal mining	0	0	0	0	0
132	18.7	JPB mining areas	None (within 0m)				
132	18.8	The Coal Authority non-coal mining	0	0	0	0	-
133	18.9	Researched mining	0	0	0	0	-
133	18.10	Mining record office plans	0	0	0	0	-
133	18.11	BGS mine plans	0	0	0	0	-
133 >	18.12 >	Coal mining >	Identified (within 0m)				
134	18.13	Brine areas	None (within 0m)				
134	18.14	Gypsum areas	None (within 0m)				
134	18.15	Tin mining	None (within 0m)				
134	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
135	19.1	Natural cavities	0	0	0	0	-
135	19.2	Mining cavities	0	0	0	0	0
135	19.3	Reported recent incidents	0	0	0	0	-
135	19.4	Historical incidents	0	0	0	0	-
136	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
137 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
139 >	21.1 >	BGS Estimated Background Soil Chemistry >	3	4	-	-	-
139	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
140	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
141	22.1	Underground railways (London)	0	0	0	-	-
141	22.2	Underground railways (Non-London)	0	0	0	-	-
141	22.3	Railway tunnels	0	0	0	-	-
141	22.4	Historical railway and tunnel features	0	0	0	-	-
141	22.5	Royal Mail tunnels	0	0	0	-	-



142	22.6	Historical railways	0	0	0	-	-
142	22.7	Railways	0	0	0	-	-
142	22.8	Crossrail 1	0	0	0	0	-
142	22.9	Crossrail 2	0	0	0	0	-
142	22.10	HS2	0	0	0	0	-



Recent aerial photograph



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Capture Date: 23/05/2019

Site Area: 2.44ha



Recent site history - 2018 aerial photograph



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Capture Date: 01/07/2018

Site Area: 2.44ha



Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 2.44ha



Recent site history - 2001 aerial photograph



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Capture Date: 12/05/2001

Site Area: 2.44ha



Recent site history - 2000 aerial photograph



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Capture Date: 07/05/2000

Site Area: 2.44ha



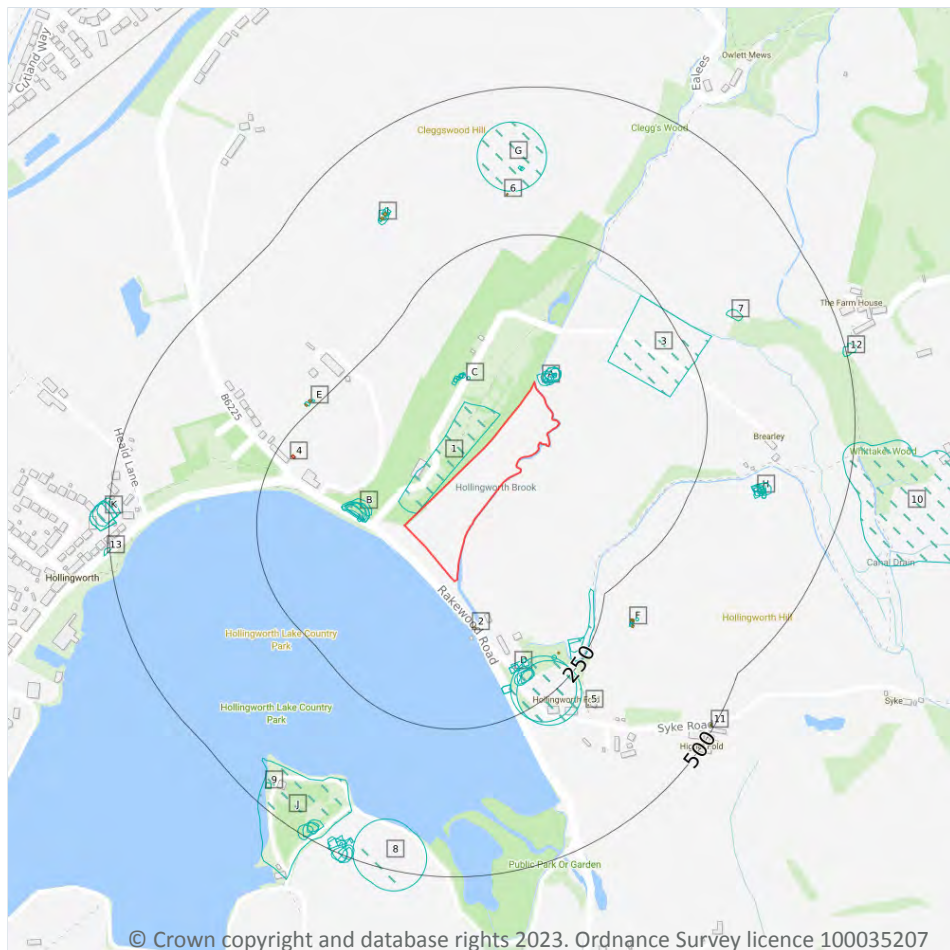
OS MasterMap site plan



Site Area: 2.44ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

86

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 15 >](#)

ID	Location	Land use	Dates present	Group ID
1	On site	Refuse Heap	1968	677850



ID	Location	Land use	Dates present	Group ID
A	7m NE	Refuse Heap	1908	781117
A	13m NE	Unspecified Heap	1928	713766
A	16m NE	Unspecified Heap	1938 - 1949	724293
A	17m NE	Unspecified Old Shafts	1928	640174
A	17m NE	Old Coal Shafts	1908	684754
A	21m NE	Refuse Heap	1911	764009
A	21m NE	Refuse Heap	1911	753095
A	24m NE	Unspecified Old Shafts	1938	640175
A	32m NE	Old Coal Shafts	1911	684753
A	32m NE	Unspecified Disused Shaft	1968 - 1976	730868
A	36m NE	Unspecified Old Shafts	1949	640173
B	59m W	Unspecified Pit	1949 - 1976	741849
B	61m W	Unspecified Pit	1910	747426
B	62m W	Unspecified Pit	1910	716094
B	66m W	Unspecified Pit	1938	701602
B	69m W	Unspecified Pit	1928	790756
B	71m W	Unspecified Ground Workings	1908	647816
C	93m N	Unspecified Shaft	1892	665138
C	102m N	Unspecified Disused Shaft	1968 - 1976	732659
C	104m N	Old Coal Shafts	1911	748444
C	104m N	Unspecified Old Shafts	1949	640176
C	105m N	Unspecified Shaft	1890	665133
C	105m N	Unspecified Old Shafts	1928 - 1938	767632
C	106m N	Coal Pit	1851	654271
C	107m N	Old Coal Shafts	1908	684755
3	124m NE	Colliery	1891 - 1892	707363
D	171m S	Unspecified Pit	1938	690609
D	173m S	Unspecified Ground Workings	1928	709553



ID	Location	Land use	Dates present	Group ID
D	173m S	Unspecified Ground Workings	1908	719269
D	174m S	Engine House	1851	676172
D	180m S	Unspecified Quarry	1890	778884
D	186m S	Unspecified Quarry	1938	751537
D	190m S	Unspecified Old Quarry	1908 - 1910	716788
D	191m S	Unspecified Old Quarry	1910	748174
D	192m S	Unspecified Quarry	1890	755844
D	196m S	Unspecified Ground Workings	1928	732245
D	196m S	Unspecified Ground Workings	1908	790455
D	206m S	Unspecified Tank	1938	674696
D	213m SE	Unspecified Pit	1967	739879
D	218m SE	Unspecified Pit	1890	778232
E	257m NW	Unspecified Tank	1949	674697
E	257m NW	Unspecified Tank	1928 - 1938	786311
F	301m SE	Unspecified Tank	1910	701024
F	301m SE	Unspecified Tank	1909	702095
F	301m SE	Unspecified Tank	1930	754930
F	309m SE	Unspecified Tank	1949	674618
G	325m N	Unspecified Old Level	1949	763067
7	337m NE	Sandstone Quarry	1851	687450
H	341m E	Unspecified Heap	1910	700246
H	344m E	Unspecified Heap	1910	709524
H	347m E	Unspecified Ground Workings	1930	748724
H	347m E	Unspecified Ground Workings	1909	751816
H	349m E	Unspecified Old Shaft	1909 - 1930	712725
H	353m E	Unspecified Heap	1949	778198
H	354m E	Unspecified Disused Shaft	1968 - 1976	787996
G	358m N	Unspecified Old Level	1938	773290



ID	Location	Land use	Dates present	Group ID
H	360m E	Unspecified Old Shaft	1949	651804
G	360m N	Unspecified Old Level	1928	698522
I	370m N	Unspecified Heap	1938	650653
I	373m N	Unspecified Tank	1938	674559
I	375m N	Unspecified Tank	1949	780319
I	376m N	Unspecified Tank	1989	771849
I	376m N	Unspecified Tank	1908	724296
I	376m N	Unspecified Tank	1928	759130
I	378m N	Unspecified Tank	1911	752103
J	384m SW	Nursery	1851	679931
8	416m S	Unspecified Old Quarry	1890	703682
9	462m SW	Pump House	1976	693614
J	465m SW	Unspecified Pit	1954	690608
J	468m S	Unspecified Ground Workings	1954	716584
J	472m SW	Sandstone Quarry	1851	687455
J	474m SW	Unspecified Old Quarries	1910	700651
J	477m S	Unspecified Ground Workings	1928	762476
J	477m S	Unspecified Pits	1938	659158
J	480m S	Unspecified Quarry	1954	667794
J	481m SW	Unspecified Old Quarries	1908	759716
K	481m W	Unspecified Quarry	1949 - 1968	704685
10	483m E	Colliery	1890	708795
J	484m S	Unspecified Old Quarries	1910	774674
K	485m W	Unspecified Old Quarry	1890 - 1908	773471
K	487m W	Unspecified Quarry	1938	700426
K	487m W	Unspecified Quarry	1928	760064
J	488m S	Unspecified Pit	1928	690607
12	494m E	Unspecified Pit	1930 - 1949	713939



ID	Location	Land use	Dates present	Group ID
13	495m W	Sandstone Quarry	1851	687454

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	13
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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 15 >](#)

ID	Location	Land use	Dates present	Group ID
2	84m S	Unspecified Tank	1938	84029
D	210m SE	Unspecified Tank	1961	84025
E	260m NW	Unspecified Tank	1930 - 1938	94701
E	260m NW	Unspecified Tank	1959 - 1992	92278
F	300m SE	Unspecified Tank	1983 - 1988	97066
F	302m SE	Unspecified Tank	1962	95736
F	303m SE	Unspecified Tank	1992	102647
F	305m SE	Unspecified Tank	1910 - 1930	91318
5	306m SE	Unspecified Tank	1961	84027
6	320m N	Unspecified Tank	1938	84030
I	376m N	Unspecified Tank	1910 - 1938	100543
I	378m N	Unspecified Tank	1959 - 1960	92676
11	493m SE	Unspecified Tank	1961	84011

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m

1

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 15 >](#)

ID	Location	Land use	Dates present	Group ID
4	218m W	Electricity Substation	1992	45410

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

0

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'.

This data is sourced from Ordnance Survey / Groundsure.



1.6 Historical military land

Records within 500m

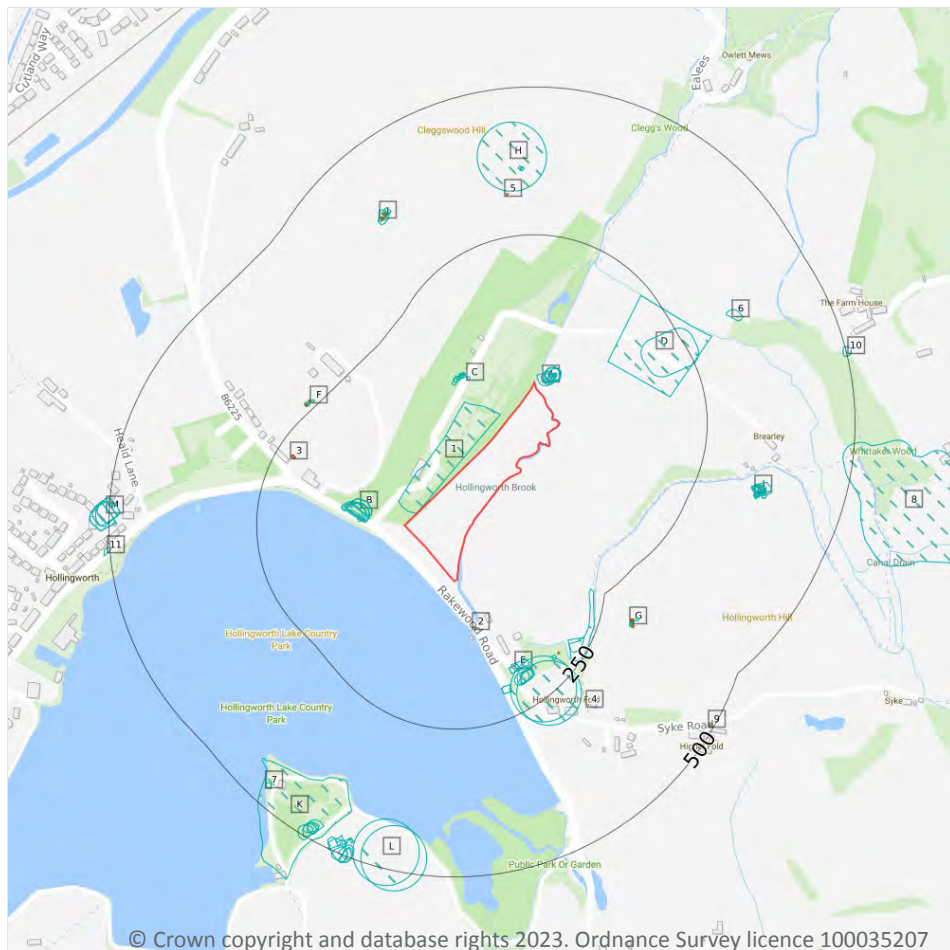
0

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

2.1 Historical industrial land uses

Records within 500m

111

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 22 >](#)

ID	Location	Land Use	Date	Group ID
1	On site	Refuse Heap	1968	677850
A	7m NE	Refuse Heap	1908	781117
A	13m NE	Unspecified Heap	1928	713766



ID	Location	Land Use	Date	Group ID
A	16m NE	Unspecified Heap	1938	724293
A	17m NE	Old Coal Shafts	1908	684754
A	17m NE	Unspecified Old Shafts	1928	640174
A	21m NE	Refuse Heap	1911	764009
A	21m NE	Refuse Heap	1911	753095
A	21m NE	Refuse Heap	1911	753095
A	24m NE	Unspecified Old Shafts	1938	640175
A	28m NE	Unspecified Heap	1949	724293
A	32m NE	Old Coal Shafts	1911	684753
A	32m NE	Unspecified Disused Shaft	1976	730868
A	32m NE	Unspecified Disused Shaft	1968	730868
A	36m NE	Unspecified Old Shafts	1949	640173
B	59m W	Unspecified Pit	1976	741849
B	59m W	Unspecified Pit	1949	741849
B	59m W	Unspecified Pit	1968	741849
B	61m W	Unspecified Pit	1910	747426
B	61m W	Unspecified Pit	1910	747426
B	62m W	Unspecified Pit	1910	716094
B	66m W	Unspecified Pit	1938	701602
B	69m W	Unspecified Pit	1928	790756
B	71m W	Unspecified Ground Workings	1908	647816
C	93m N	Unspecified Shaft	1892	665138
C	102m N	Unspecified Disused Shaft	1976	732659
C	102m N	Unspecified Disused Shaft	1968	732659
C	104m N	Old Coal Shafts	1911	748444
C	104m N	Unspecified Old Shafts	1949	640176
C	105m N	Unspecified Shaft	1890	665133
C	105m N	Old Coal Shafts	1911	748444



ID	Location	Land Use	Date	Group ID
C	105m N	Unspecified Old Shafts	1938	767632
C	106m N	Coal Pit	1851	654271
C	107m N	Old Coal Shafts	1908	684755
C	107m N	Unspecified Old Shafts	1928	767632
D	124m NE	Colliery	1892	707363
E	171m S	Unspecified Pit	1938	690609
E	173m S	Unspecified Ground Workings	1928	709553
E	173m S	Unspecified Ground Workings	1908	719269
E	174m S	Engine House	1851	676172
D	177m NE	Colliery	1891	707363
E	180m S	Unspecified Quarry	1890	778884
E	186m S	Unspecified Quarry	1938	751537
E	190m S	Unspecified Old Quarry	1908	716788
E	191m S	Unspecified Old Quarry	1910	748174
E	192m S	Unspecified Quarry	1890	755844
E	193m S	Unspecified Old Quarry	1910	716788
E	196m S	Unspecified Ground Workings	1928	732245
E	196m S	Unspecified Ground Workings	1908	790455
E	206m S	Unspecified Tank	1938	674696
E	213m SE	Unspecified Pit	1967	739879
E	218m SE	Unspecified Pit	1890	778232
F	257m NW	Unspecified Tank	1949	674697
F	257m NW	Unspecified Tank	1938	786311
F	260m NW	Unspecified Tank	1928	786311
G	301m SE	Unspecified Tank	1910	701024
G	301m SE	Unspecified Tank	1930	754930
G	301m SE	Unspecified Tank	1909	702095
G	302m SE	Unspecified Tank	1910	701024



ID	Location	Land Use	Date	Group ID
G	309m SE	Unspecified Tank	1949	674618
H	325m N	Unspecified Old Level	1949	763067
6	337m NE	Sandstone Quarry	1851	687450
I	341m E	Unspecified Heap	1910	700246
I	344m E	Unspecified Heap	1910	709524
I	344m E	Unspecified Heap	1910	709524
I	347m E	Unspecified Ground Workings	1930	748724
I	347m E	Unspecified Ground Workings	1909	751816
I	349m E	Unspecified Old Shaft	1910	712725
I	350m E	Unspecified Old Shaft	1910	712725
I	350m E	Unspecified Old Shaft	1910	712725
I	350m E	Unspecified Old Shaft	1930	712725
I	350m E	Unspecified Old Shaft	1909	712725
I	353m E	Unspecified Heap	1949	778198
I	354m E	Unspecified Disused Shaft	1976	787996
I	354m E	Unspecified Disused Shaft	1968	787996
H	358m N	Unspecified Old Level	1938	773290
I	360m E	Unspecified Old Shaft	1949	651804
H	360m N	Unspecified Old Level	1928	698522
J	370m N	Unspecified Heap	1938	650653
J	373m N	Unspecified Tank	1938	674559
J	375m N	Unspecified Tank	1949	780319
J	376m N	Unspecified Tank	1989	771849
J	376m N	Unspecified Tank	1928	759130
J	376m N	Unspecified Tank	1908	724296
J	378m N	Unspecified Tank	1911	752103
J	379m N	Unspecified Tank	1911	752103
K	384m SW	Nursery	1851	679931



ID	Location	Land Use	Date	Group ID
L	416m S	Unspecified Old Quarry	1890	703682
L	424m S	Unspecified Old Quarry	1890	703682
7	462m SW	Pump House	1976	693614
K	465m SW	Unspecified Pit	1954	690608
K	468m S	Unspecified Ground Workings	1954	716584
K	472m SW	Sandstone Quarry	1851	687455
K	474m SW	Unspecified Old Quarries	1910	700651
K	476m SW	Unspecified Old Quarries	1910	700651
K	477m S	Unspecified Ground Workings	1928	762476
K	477m S	Unspecified Pits	1938	659158
K	480m S	Unspecified Quarry	1954	667794
K	481m SW	Unspecified Old Quarries	1908	759716
M	481m W	Unspecified Quarry	1949	704685
M	481m W	Unspecified Quarry	1968	704685
8	483m E	Colliery	1890	708795
K	484m S	Unspecified Old Quarries	1910	774674
K	485m S	Unspecified Old Quarries	1910	774674
M	485m W	Unspecified Old Quarry	1890	773471
M	487m W	Unspecified Quarry	1938	700426
M	487m W	Unspecified Quarry	1928	760064
M	487m W	Unspecified Old Quarry	1908	773471
K	488m S	Unspecified Pit	1928	690607
10	494m E	Unspecified Pit	1930	713939
11	495m W	Sandstone Quarry	1851	687454

This data is sourced from Ordnance Survey / Groundsure.



2.2 Historical tanks

Records within 500m

21

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 22 >](#)

ID	Location	Land Use	Date	Group ID
2	84m S	Unspecified Tank	1938	84029
E	210m SE	Unspecified Tank	1961	84025
F	260m NW	Unspecified Tank	1930	94701
F	260m NW	Unspecified Tank	1938	94701
F	260m NW	Unspecified Tank	1959	92278
F	261m NW	Unspecified Tank	1960	92278
F	261m NW	Unspecified Tank	1992	92278
G	300m SE	Unspecified Tank	1983	97066
G	300m SE	Unspecified Tank	1988	97066
G	302m SE	Unspecified Tank	1962	95736
G	303m SE	Unspecified Tank	1992	102647
G	305m SE	Unspecified Tank	1910	91318
G	305m SE	Unspecified Tank	1930	91318
4	306m SE	Unspecified Tank	1961	84027
5	320m N	Unspecified Tank	1938	84030
J	376m N	Unspecified Tank	1910	100543
J	376m N	Unspecified Tank	1930	100543
J	376m N	Unspecified Tank	1938	100543
J	378m N	Unspecified Tank	1959	92676
J	379m N	Unspecified Tank	1960	92676
9	493m SE	Unspecified Tank	1961	84011

This data is sourced from Ordnance Survey / Groundsure.



2.3 Historical energy features

Records within 500m

1

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 22 >](#)

ID	Location	Land Use	Date	Group ID
3	218m W	Electricity Substation	1992	45410

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

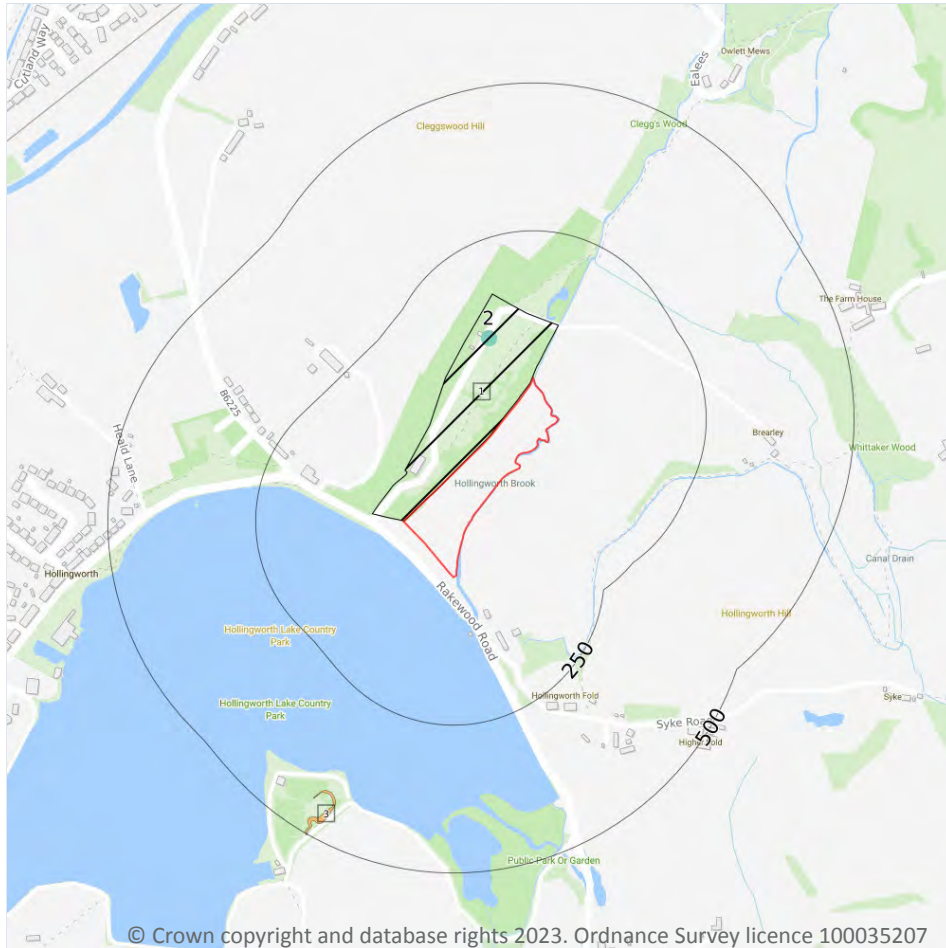
0

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'.

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Historical landfill (BGS)
- Historical waste sites

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

1

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.

Features are displayed on the Waste and landfill map on [page 29 >](#)



ID	Location	Address	BGS Number	Risk	Waste Type
2	102m N	Hollingworth Lake, Rakewood Road, Littleborough	498	No risk to aquifer	N/A

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	1
----------------------------	----------

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.

Features are displayed on the Waste and landfill map on [page 29 >](#)

ID	Location	Details		
1	On site	Site Address: Rakewood Road, Littleborough, Greater Manchester, Greater Manchester Licence Holder Address: -	Waste Licence: - Site Reference: D058 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: Littleborough Urban District Council Licence Holder: - First Recorded 31/12/1932 Last Recorded: -

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

3.5 Historical waste sites

Records within 500m	1
----------------------------	----------

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

Features are displayed on the Waste and landfill map on [page 29 >](#)



ID	Location	Address	Further Details	Date
3	418m SW	Site Address: N/A	Type of Site: Ground Workings and Refuse Heap Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1992

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

3.6 Licensed waste sites

Records within 500m	0
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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

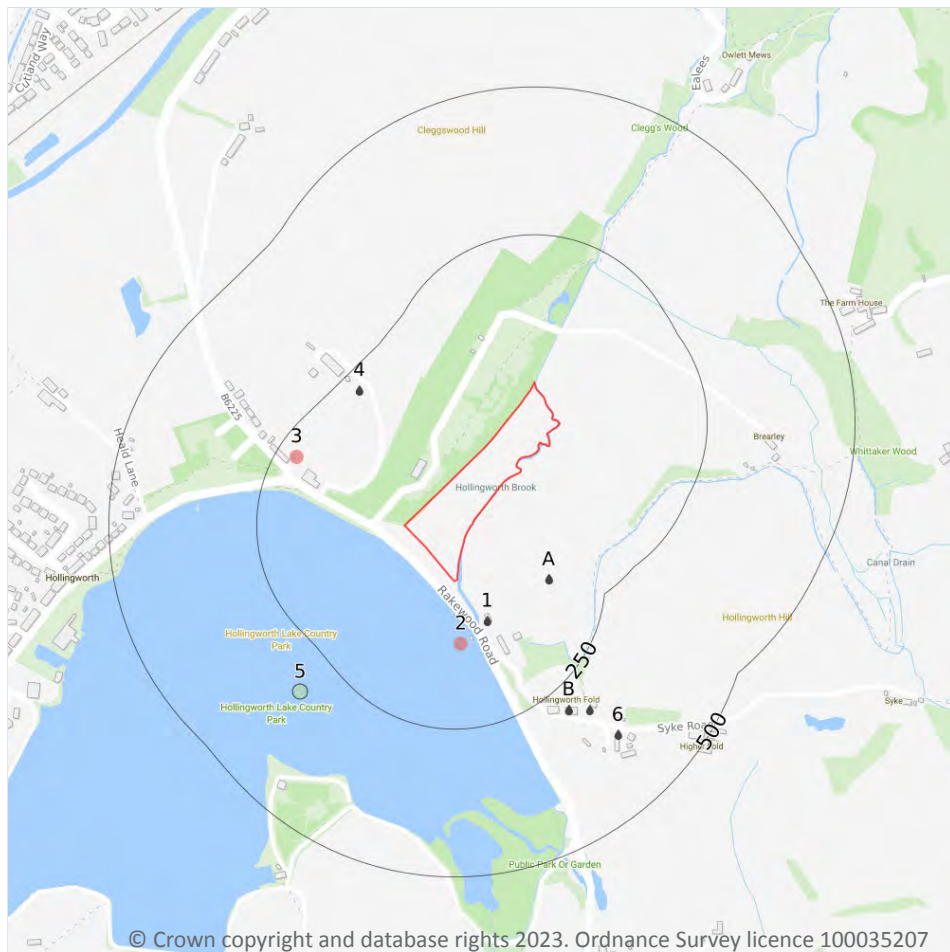
Records within 500m	0
---------------------	---

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.

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
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 32 >](#)

ID	Location	Company	Address	Activity	Category
2	106m S	Water Tower	Greater Manchester, OL15	Water Pumping Stations	Industrial Features
3	217m W	Electricity Sub Station	Greater Manchester, OL15	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**0**

Open, closed, under development and obsolete petrol stations.

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

8

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 32](#) >

ID	Location	Address	Details	
1	86m S	1 & 2 BEARHILL, RAKEWOOD RD, HOLLINGWORTH LAKE, LITTLEBOROUGH, LANCASHIRE, OL15 0AQ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/690 Permit Version: 1 Receiving Water: UNKNOWN	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 06/09/1963 Effective Date: 06/09/1963 Revocation Date: -
A	153m SE	HOLLINGWORTH LAKE VISITORS CENTRE, HOLLINGWORTH LAKE COUNTY PARK, RAKEWOOD ROAD, LITTLEBOROUGH, ROCHDALE, LANCASHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016990310 Permit Version: 2 Receiving Water: HOLLINGWORTH BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 31/10/1983 Revocation Date: -
A	153m SE	HOLLINGWORTH LAKE VISITORS CENTRE, HOLLINGWORTH LAKE COUNTY PARK, RAKEWOOD ROAD, LITTLEBOROUGH, ROCHDALE, LANCASHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016990310 Permit Version: 1 Receiving Water: HOLLINGWORTH BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/07/1981 Revocation Date: 30/10/1983
4	217m NW	CLEGGSWOOD FARM, HOLLINGWORTH LAKE, LITTLEBOROUGH, ROCHDALE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016993939 Permit Version: 1 Receiving Water: LAND VIA SOAKAWAY	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 23/08/2007 Effective Date: 23/08/2007 Revocation Date: 15/09/2009



ID	Location	Address	Details	
B	289m S	3, 5 & 7 HOLLINGWORTH FOLD (3/5, SYKE RD, LITTLEBOROUGH, LANCASHIRE, OL15 0AJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/872 Permit Version: 1 Receiving Water: UNKNOWN	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 29/11/1963 Effective Date: 29/11/1963 Revocation Date: -
B	289m S	3, 5 & 7 HOLLINGWORTH FOLD (3/5, SYKE RD, LITTLEBOROUGH, LANCASHIRE, OL15 0AJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/872 Permit Version: 1 Receiving Water: UNKNOWN	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 29/11/1963 Effective Date: 29/11/1963 Revocation Date: -
B	313m SE	HOLLINGWORTH FOLD COTTAGE, SYKE RD, LITTLEBOROUGH, LANCASHIRE, OL15 0AJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016992358 Permit Version: 1 Receiving Water: TRIB OF HOLLINGWORTH BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 27/10/1977 Effective Date: 27/10/1977 Revocation Date: -
6	377m SE	1 HOLLINGWORTH FOLD, SYKE RD, LITTLEBOROUGH, LANCASHIRE, OL15 0AJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/78 Permit Version: 1 Receiving Water: EALEES BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 25/01/1963 Effective Date: 25/01/1963 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

1

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 32 >](#)

ID	Location	Details	
5	319m SW	Incident Date: 01/04/2002 Incident Identification: 67950 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) 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

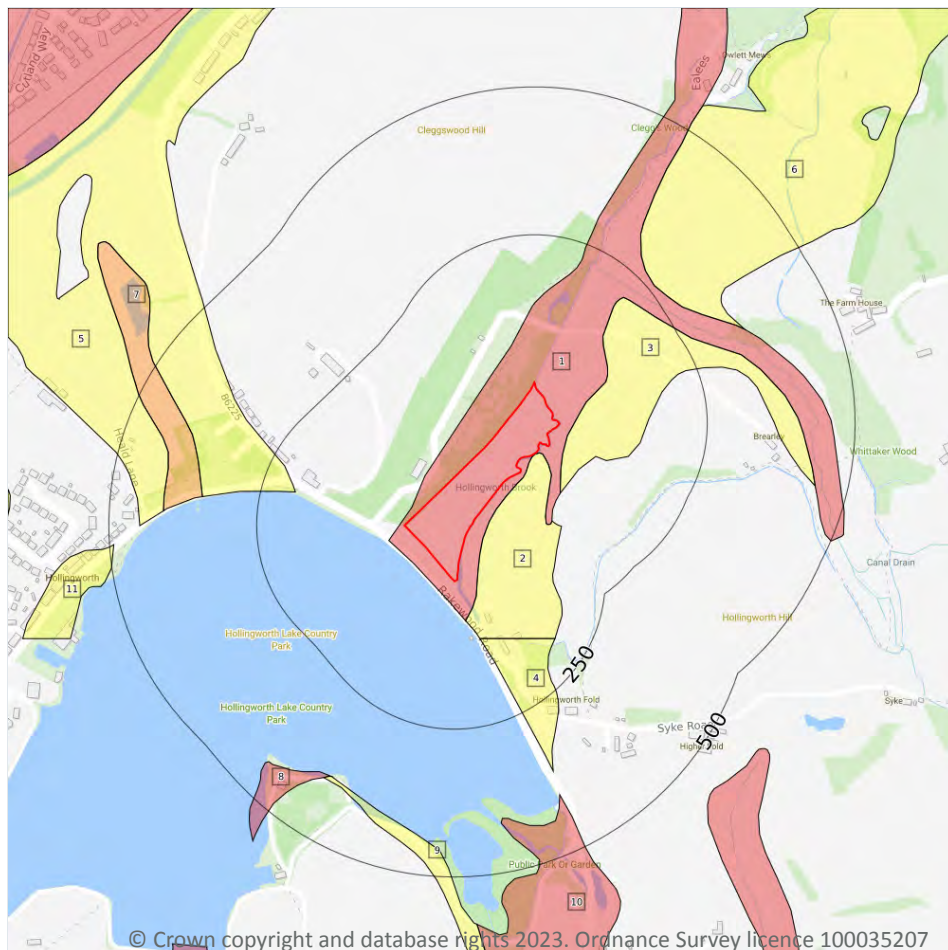
0

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

11

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 39](#) >

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
2	1m NE	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

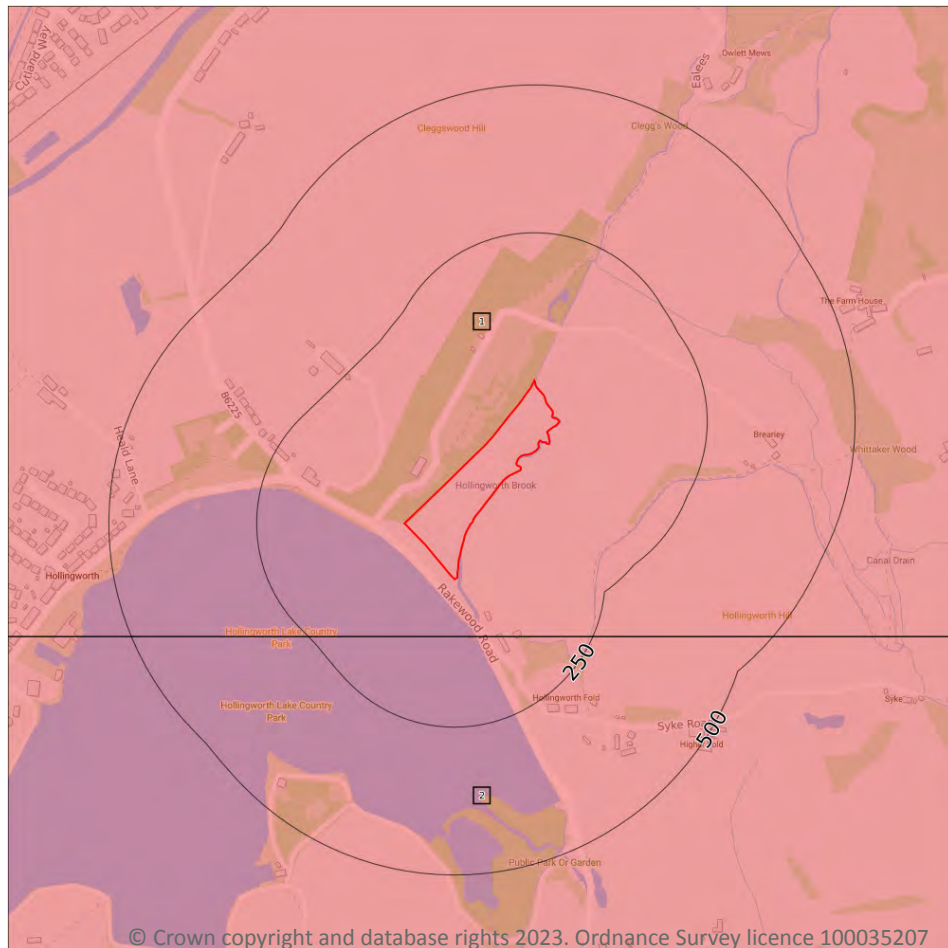


ID	Location	Designation	Description
3	22m NE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	106m S	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
5	193m W	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
6	261m NE	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
7	345m W	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
8	390m SW	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
9	390m SW	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
10	402m S	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
11	493m W	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

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 41](#) >

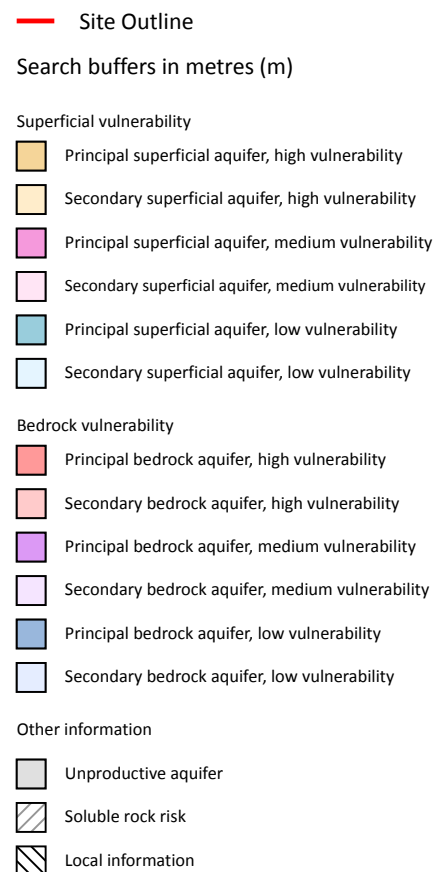
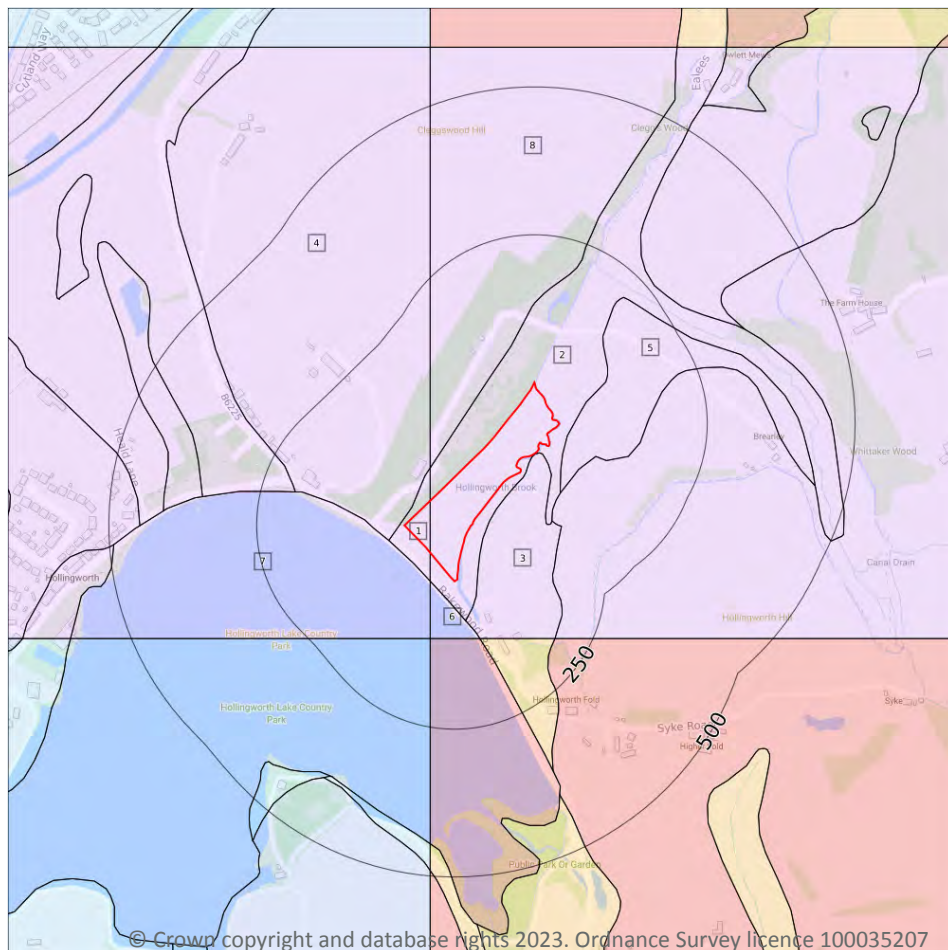
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	97m S	Secondary 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



5.3 Groundwater vulnerability

Records within 50m

8

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 43](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
4	7m SW	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
5	21m NE	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
6	29m S	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: Unknown (lakes+landslip) Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
7	30m SW	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: Unknown (lakes+landslip) Thickness: 3-10m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
8	40m W	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium 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

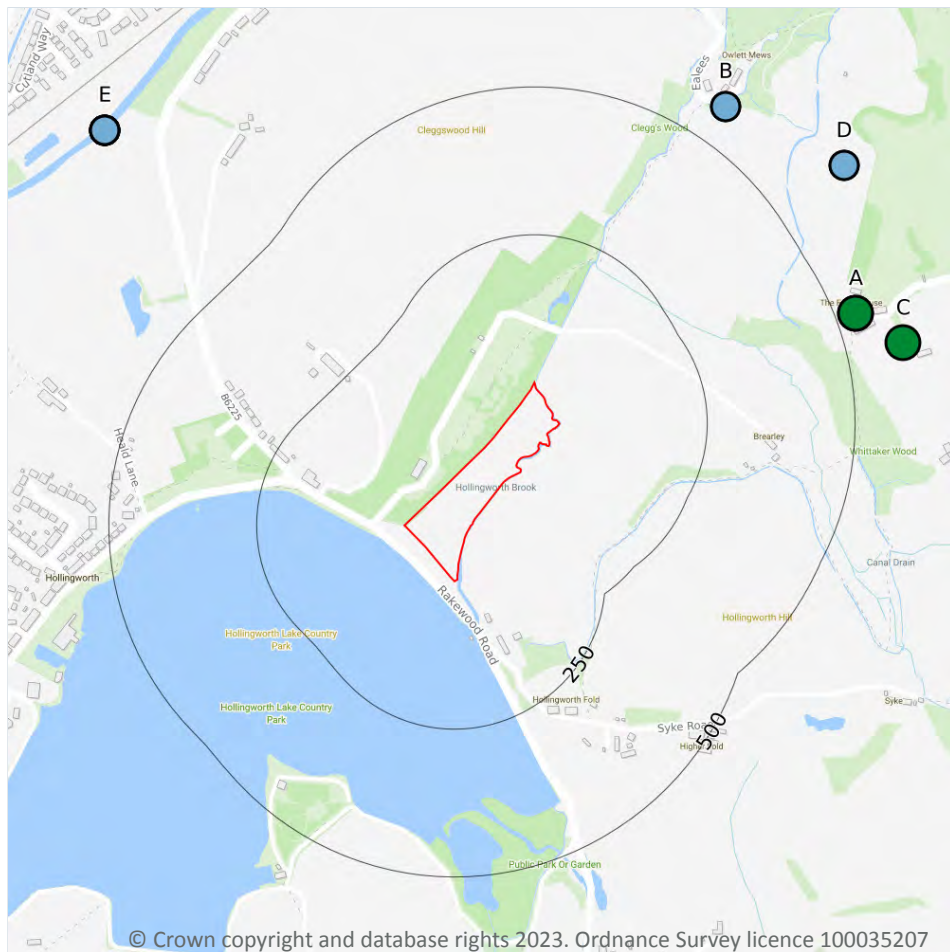
Records on site

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
Point 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

11

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.

Features are displayed on the Abstractions and Source Protection Zones map on [page 46 >](#)



ID	Location	Details	
A	534m NE	Status: Historical Licence No: 2569002246 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household" Direct Source: Ground Water - North West Region Point: "BOREHOLE AT WHITTAKER FARM, SHORE LANE, LITTLEBOROUGH" Data Type: Point Name: SUTCLIFFE Easting: 394720 Northing: 415550	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/07/1991 Expiry Date: - Issue No: 100 Version Start Date: 03/09/1991 Version End Date: -
A	534m NE	Status: Historical Licence No: 2569002246 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - North West Region Point: BOREHOLE AT WHITTAKER FARM, SHORE LANE, LITTLEBOROUGH Data Type: Point Name: SUTCLIFFE Easting: 394720 Northing: 415550	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/07/1991 Expiry Date: - Issue No: 100 Version Start Date: 03/09/1991 Version End Date: -
A	534m NE	Status: Historical Licence No: 2569002246 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - North West Region Point: BOREHOLE AT WHITTAKER FARM SHORE LANE LITTLEBOROUGH Data Type: Point Name: WHITTAKER MANAGEMENT COMPANY LTD Easting: 394720 Northing: 415550	Annual Volume (m ³): 2727.6 Max Daily Volume (m ³): 18.184 Original Application No: - Original Start Date: 04/07/1991 Expiry Date: - Issue No: 101 Version Start Date: 01/04/1994 Version End Date: -
-	1099m NW	Status: Historical Licence No: 2569002250 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT STOCKTON STREET LITTLEBOROUGH Data Type: Point Name: VITA THERMOPLASTIC COMPOUNDS LTD Easting: 393500 Northing: 416300	Annual Volume (m ³): 72730 Max Daily Volume (m ³): 331 Original Application No: - Original Start Date: 23/01/1991 Expiry Date: - Issue No: 101 Version Start Date: 24/10/2005 Version End Date: -



ID	Location	Details	
-	1814m SE	Status: Historical Licence No: 2569002214 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING AT PREMISES, MILNROW" Data Type: Point Name: ADRIAN ARNOLD AND DAVID DRAKE TA Easting: 395200 Northing: 413700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 27/06/1973 Expiry Date: - Issue No: 100 Version Start Date: 27/06/1973 Version End Date: -
-	1814m SE	Status: Historical Licence No: 2569002214 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING AT PREMISES, MILNROW Data Type: Point Name: ADRIAN ARNOLD AND DAVID DRAKE TA Easting: 395200 Northing: 413700	Annual Volume (m ³): 6637 Max Daily Volume (m ³): 18 Original Application No: - Original Start Date: 27/06/1973 Expiry Date: - Issue No: 100 Version Start Date: 27/06/1973 Version End Date: -
-	1868m N	Status: Historical Licence No: 2569002062 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BRICK LINED CATCHPIT AT HIGHER GALE,GALE, LITTLEBOROUGH" Data Type: Point Name: HARRISON Easting: 394100 Northing: 417300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/02/1966 Version End Date: -
-	1868m N	Status: Historical Licence No: 2569002062 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BRICK LINED CATCHPIT AT HIGHER GALE,GALE, LITTLEBOROUGH Data Type: Point Name: HARRISON Easting: 394100 Northing: 417300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/02/1966 Version End Date: -



ID	Location	Details	
-	1951m S	Status: Active Licence No: 2569002253 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT TUNSHILL MILNROW ROCHDALE Data Type: Point Name: TUNSHILL GOLF CLUB Easting: 394180 Northing: 413150	Annual Volume (m ³): 4546 Max Daily Volume (m ³): 54.55 Original Application No: 7126 Original Start Date: 18/06/1992 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1951m S	Status: Historical Licence No: 2569002253 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE AT TUNSHILL, MILNROW, ROCHDALE" Data Type: Point Name: TUNSHILL GOLF CLUB Easting: 394180 Northing: 413150	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/06/1992 Expiry Date: - Issue No: 100 Version Start Date: 18/06/1992 Version End Date: -
-	1951m S	Status: Historical Licence No: 2569002253 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT TUNSHILL, MILNROW, ROCHDALE Data Type: Point Name: TUNSHILL GOLF CLUB Easting: 394180 Northing: 413150	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/06/1992 Expiry Date: - Issue No: 100 Version Start Date: 18/06/1992 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

42

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 46 >](#)



ID	Location	Details	
B	568m NE	Status: Historical Licence No: 2569002136 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: SHORE LANE BRK AT LITTLEBOROUGH Data Type: Point Name: FOTHERGILL ENGINEERED FABRICS LTD Easting: 394500 Northing: 415900	Annual Volume (m ³): 35641 Max Daily Volume (m ³): 136 Original Application No: 0074 Original Start Date: 01/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/06/2007 Version End Date: -
B	568m NE	Status: Historical Licence No: 2569002136 Details: Non-Evaporative Cooling Direct Source: Surface, Non-Tidal - North West Region Point: SHORE LANE BRK AT LITTLEBOROUGH Data Type: Point Name: FOTHERGILL ENGINEERED FABRICS LTD Easting: 394500 Northing: 415900	Annual Volume (m ³): 35641 Max Daily Volume (m ³): 136 Original Application No: 0074 Original Start Date: 01/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/06/2007 Version End Date: -
C	597m E	Status: Historical Licence No: 2569002232 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING FED STORAGE TANK AT WHITTAKER GOLF CLUB, LITTLEBOROUGH" Data Type: Point Name: WHITTAKER GOLF CLUB Easting: 394800 Northing: 415500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 19/12/2000 Version End Date: -
C	597m E	Status: Historical Licence No: 2569002232 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING FED STORAGE TANK AT WHITTAKER GOLF CLUB, LITTLEBOROUGH" Data Type: Point Name: WHITTAKER GOLF CLUB Easting: 394800 Northing: 415500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 19/12/2000 Version End Date: -



ID	Location	Details	
C	597m E	Status: Historical Licence No: 2569002232 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED STORAGE TANK AT WHITTAKER GOLF CLUB, LITTLEBOROUGH Data Type: Point Name: WHITTAKER ESTATE COMPANY LTD. Easting: 394800 Northing: 415500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 101 Version Start Date: 03/02/2004 Version End Date: -
C	597m E	Status: Historical Licence No: 2569002232 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED STORAGE TANK AT WHITTAKER GOLF CLUB, LITTLEBOROUGH Data Type: Point Name: WHITTAKER ESTATE COMPANY LTD. Easting: 394800 Northing: 415500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 101 Version Start Date: 03/02/2004 Version End Date: -
D	639m NE	Status: Historical Licence No: 2569002230 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "UNNAMED WATERCOURSE AT WHITTAKER GOLF CLUB, LITTLEBOROUGH" Data Type: Point Name: WHITTAKER GOLF CLUB Easting: 394700 Northing: 415800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 23/05/1985 Version End Date: -
D	639m NE	Status: Historical Licence No: 2569002230 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: UNNAMED WATERCOURSE AT WHITTAKER GOLF CLUB, LITTLEBOROUGH Data Type: Point Name: WHITTAKER ESTATE COMPANY LTD. Easting: 394700 Northing: 415800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 101 Version Start Date: 03/02/2004 Version End Date: -



ID	Location	Details	
E	833m NW	Status: Historical Licence No: 2569002008 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH" Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
E	833m NW	Status: Historical Licence No: 2569002008 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH" Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
E	833m NW	Status: Historical Licence No: 2569002008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH" Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
E	833m NW	Status: Historical Licence No: 2569002008 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -



ID	Location	Details	
E	833m NW	Status: Historical Licence No: 2569002008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
E	833m NW	Status: Historical Licence No: 2569002008 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
E	833m NW	Status: Historical Licence No: 2569002008 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): 1654780 Max Daily Volume (m ³): 4546 Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
E	833m NW	Status: Historical Licence No: 2569002008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): 1654780 Max Daily Volume (m ³): 4546 Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -



ID	Location	Details	
E	833m NW	Status: Historical Licence No: 2569002008 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393450 Northing: 415860	Annual Volume (m ³): 1654780 Max Daily Volume (m ³): 4546 Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH 95 Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH 95 Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH 95 Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -



ID	Location	Details	
-	862m NW	Status: Historical Licence No: 2569002008 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH \$95" Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH \$95" Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH \$95" Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH \$95 Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -



ID	Location	Details	
-	862m NW	Status: Historical Licence No: 2569002008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH \$95 Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH \$95 Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -



ID	Location	Details	
-	862m NW	Status: Historical Licence No: 2569002008 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES, LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): 1654780 Max Daily Volume (m ³): 4546 Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): 1654780 Max Daily Volume (m ³): 4546 Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -
-	862m NW	Status: Historical Licence No: 2569002008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT PREMISES LITTLEBOROUGH Data Type: Point Name: AKZO NOBEL CHEMICALS LTD Easting: 393630 Northing: 416100	Annual Volume (m ³): 1654780 Max Daily Volume (m ³): 4546 Original Application No: - Original Start Date: 21/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1994 Version End Date: -



ID	Location	Details	
-	1142m SE	Status: Historical Licence No: 2569002047 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "LONGDEN END BRK AT PREMISES, RAKEWOOD, LITTLEBOROUGH" Data Type: Point Name: J CLEGG BROS RAKEWOOD LTD Easting: 394600 Northing: 414100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 21/05/1999 Version End Date: -
-	1142m SE	Status: Historical Licence No: 2569002047 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: LONGDEN END BRK AT PREMISES, RAKEWOOD, LITTLEBOROUGH Data Type: Point Name: J CLEGG BROS RAKEWOOD LTD Easting: 394600 Northing: 414100	Annual Volume (m ³): 120000 Max Daily Volume (m ³): 618.256 Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 21/05/1999 Version End Date: -
-	1142m SE	Status: Historical Licence No: 2569002047 Details: Lake & Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: LONGDEN END BRK AT PREMISES, RAKEWOOD, LITTLEBOROUGH Data Type: Point Name: J CLEGG & BROS RAKEWOOD LTD Easting: 394600 Northing: 414100	Annual Volume (m ³): 120000 Max Daily Volume (m ³): 618.3 Original Application No: - Original Start Date: 18/01/1966 Expiry Date: 31/03/2014 Issue No: 102 Version Start Date: 04/09/2007 Version End Date: -
-	1297m NE	Status: Historical Licence No: 2569002231 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "SHORE LANE BRK AT LITTLEBOROUGH, LANCS" Data Type: Point Name: WHITTAKER GOLF CLUB Easting: 395400 Northing: 415900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 23/05/1985 Version End Date: -



ID	Location	Details	
-	1297m NE	Status: Historical Licence No: 2569002231 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SHORE LANE BRK AT LITTLEBOROUGH, LANCS Data Type: Point Name: WHITTAKER ESTATE COMPANY LTD. Easting: 395400 Northing: 415900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 101 Version Start Date: 03/02/2004 Version End Date: -
-	1635m SE	Status: Historical Licence No: NW/069/0002/008 Details: Lake & Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: LONGDEN END BROOK ADJ TO RAKEWOOD ROAD, LITTLEBOROUGH Data Type: Point Name: J CLEGG & BROS RAKEWOOD LTD Easting: 394803 Northing: 413650	Annual Volume (m ³): 120000 Max Daily Volume (m ³): 619 Original Application No: - Original Start Date: 01/04/2014 Expiry Date: 31/03/2021 Issue No: 1 Version Start Date: 01/04/2014 Version End Date: -
-	1635m SE	Status: Historical Licence No: NW/069/0002/008/L Details: Lake & Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: LONGDEN END BROOK ADJ TO RAKEWOOD ROAD, LITTLEBOROUGH Data Type: Point Name: J CLEGG & BROS RAKEWOOD LTD Easting: 394803 Northing: 413650	Annual Volume (m ³): 120000 Max Daily Volume (m ³): 619 Original Application No: - Original Start Date: 01/04/2021 Expiry Date: - Issue No: 1 Version Start Date: 01/04/2021 Version End Date: -
-	1635m SE	Status: Historical Licence No: NW/069/0002/008/R01 Details: Lake & Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: LONGDEN END BROOK ADJ TO RAKEWOOD ROAD, LITTLEBOROUGH Data Type: Point Name: J.Clegg & Bros (Rakewood) Limited Easting: 394803 Northing: 413650	Annual Volume (m ³): 120000 Max Daily Volume (m ³): 619 Original Application No: NPS/WR/033153 Original Start Date: 14/07/2021 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 14/07/2021 Version End Date: -



ID	Location	Details	
-	1777m N	Status: Historical Licence No: 2569002240 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: TOWN HOUSE BROOK AND GALE HOUSE RESERVOIR OVERFLOW AT LI Data Type: Point Name: WALSDEN PRINTING CO LTD Easting: 393800 Northing: 417170	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/07/1989 Expiry Date: - Issue No: 100 Version Start Date: 13/12/1996 Version End Date: -
-	1778m N	Status: Historical Licence No: 2569002240 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: TOWN HOUSE BROOK AND GALE HOUSE RESERVOIR OVERFLOW111 Data Type: Point Name: WALSDEN PRINTING CO LTD Easting: 394110 Northing: 417210	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/07/1989 Expiry Date: - Issue No: 100 Version Start Date: 13/12/1996 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	5
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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.

Features are displayed on the Abstractions and Source Protection Zones map on [page 46 >](#)

ID	Location	Details	
A	534m NE	Status: Historical Licence No: 2569002246 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household" Direct Source: Ground Water - North West Region Point: "BOREHOLE AT WHITTAKER FARM, SHORE LANE, LITTLEBOROUGH" Data Type: Point Name: SUTCLIFFE Easting: 394720 Northing: 415550	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/07/1991 Expiry Date: - Issue No: 100 Version Start Date: 03/09/1991 Version End Date: -



ID	Location	Details	
A	534m NE	Status: Historical Licence No: 2569002246 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - North West Region Point: BOREHOLE AT WHITTAKER FARM, SHORE LANE, LITTLEBOROUGH Data Type: Point Name: SUTCLIFFE Easting: 394720 Northing: 415550	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/07/1991 Expiry Date: - Issue No: 100 Version Start Date: 03/09/1991 Version End Date: -
A	534m NE	Status: Historical Licence No: 2569002246 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - North West Region Point: BOREHOLE AT WHITTAKER FARM SHORE LANE LITTLEBOROUGH Data Type: Point Name: WHITTAKER MANAGEMENT COMPANY LTD Easting: 394720 Northing: 415550	Annual Volume (m ³): 2727.6 Max Daily Volume (m ³): 18.184 Original Application No: - Original Start Date: 04/07/1991 Expiry Date: - Issue No: 101 Version Start Date: 01/04/1994 Version End Date: -
C	597m E	Status: Historical Licence No: 2569002232 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING FED STORAGE TANK AT WHITTAKER GOLF CLUB, LITTLEBOROUGH" Data Type: Point Name: WHITTAKER GOLF CLUB Easting: 394800 Northing: 415500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 19/12/2000 Version End Date: -
C	597m E	Status: Historical Licence No: 2569002232 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED STORAGE TANK AT WHITTAKER GOLF CLUB, LITTLEBOROUGH Data Type: Point Name: WHITTAKER ESTATE COMPANY LTD. Easting: 394800 Northing: 415500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/05/1985 Expiry Date: - Issue No: 101 Version Start Date: 03/02/2004 Version End Date: -

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

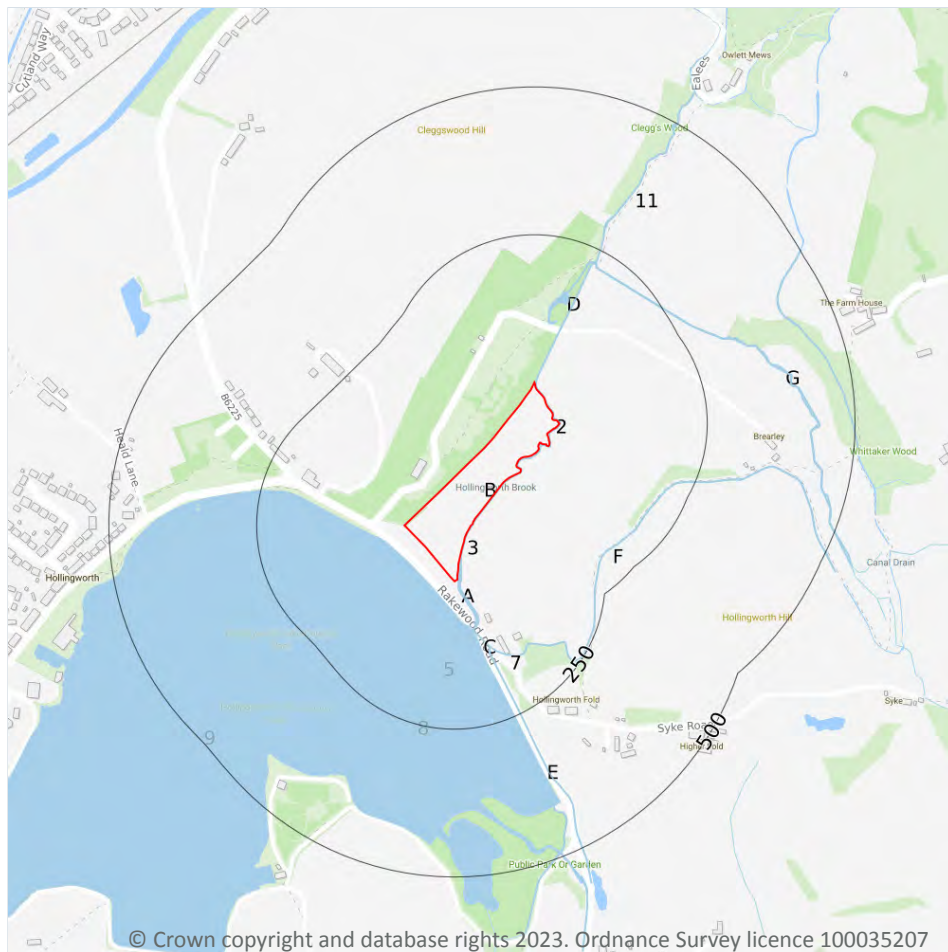
0

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

18

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 63](#) >

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



ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
3	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
C	87m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
C	87m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Lake
5	91m S	Reservoir. An area of non-tidal water used for storing water.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Lake
7	125m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Canal Drain
E	125m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
D	139m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	162m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Canal Drain
D	170m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	173m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	203m S	Reservoir. An area of non-tidal water used for storing water.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Lake
9	203m S	Reservoir. An area of non-tidal water used for storing water.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
D	216m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	220m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Brearley Brook
D	226m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook
11	228m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hollingworth Brook

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

9

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 63 >](#)

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 63 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
B	On site	River	Roch (Source to Spodden)	GB112069064720	Roch Irk Medlock	Irwell

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 63 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	555m NE	River	Roch (Source to Spodden)	GB112069064720 ↗	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site

1

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 63 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
B	On site	Northern Manchester Carboniferous Aquifers	GB41202G101800 ↗	Poor	Poor	Good	2019

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



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m**0**

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).

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

7.2 Historical Flood Events

Records within 250m**0**

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.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

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

7.7 Flood Zone 3

Records within 50m

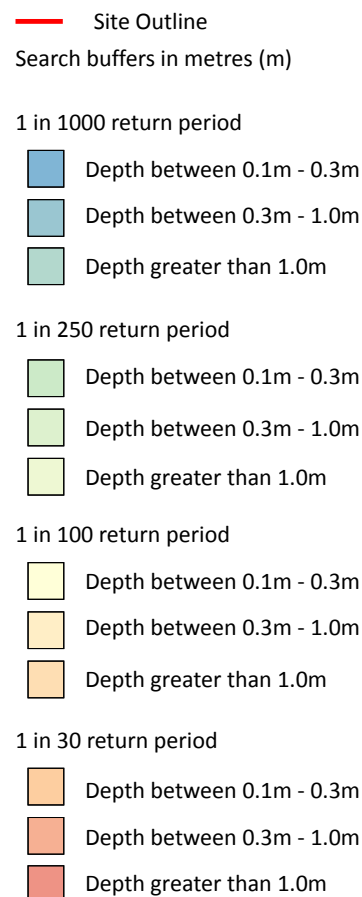
0

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.

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, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, 0.3m - 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 70 >](#)

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.

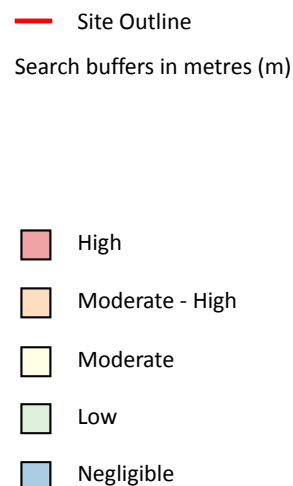
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

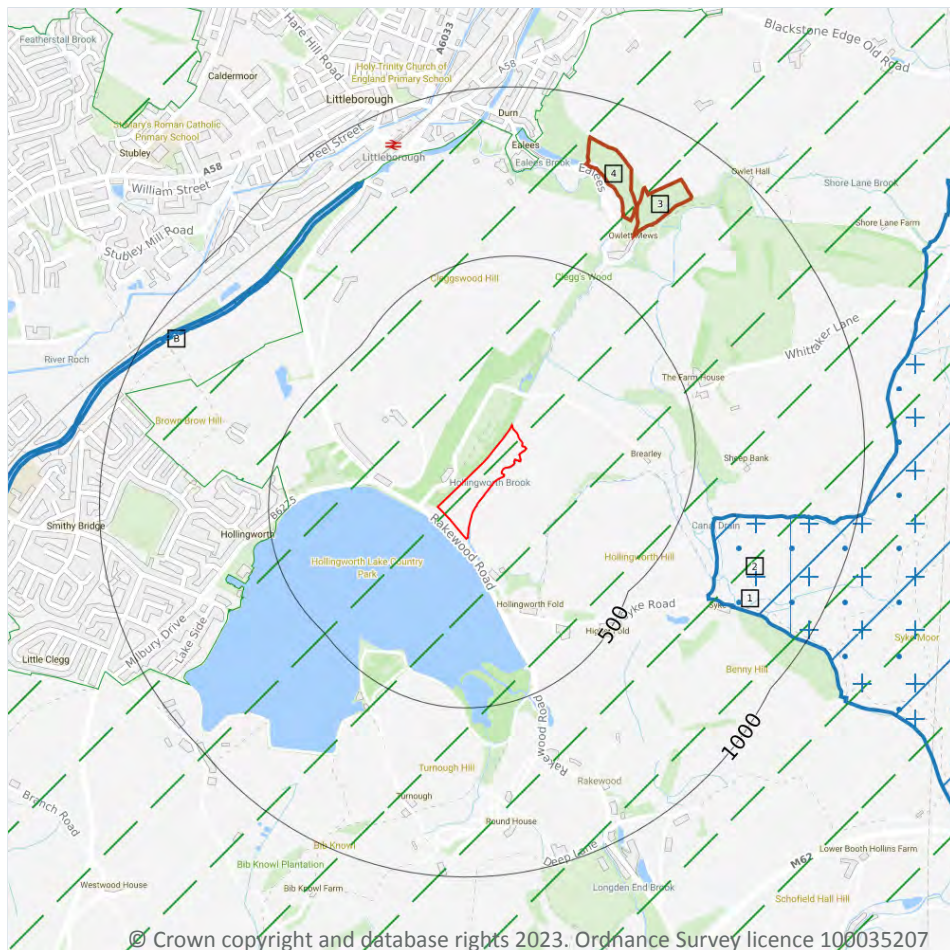
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 72 >](#)

This data is sourced from Ambiantal Risk Analytics.



10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Designated Ancient Woodland
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

3

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.

Features are displayed on the Environmental designations map on [page 73](#) >

ID	Location	Name	Data source
A	593m E	South Pennine Moors	Natural England



ID	Location	Name	Data source
B	825m NW	Rochdale Canal	Natural England
-	1305m W	Rochdale Canal	Natural England

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

3

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.

Features are displayed on the Environmental designations map on [page 73 >](#)

ID	Location	Name	Features of interest	Habitat description	Data source
A	593m E	South Pennine Moors	Wet heathland with cross-leaved heath; Dry heaths; Blanket bog; Very wet mires often identified by an unstable 'quaking' surface; Western acidic oak woodland.	Inland water bodies (Standing water, Running water); Humid grassland, Mesophile grassland; Mixed woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas); Bogs, Marshes, Water fringed vegetation, Fens; Broad-leaved deciduous woodland; Dry grassland, Steppes	Natural England
B	825m NW	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England



ID	Location	Name	Features of interest	Habitat description	Data source
-	1305m W	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England

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

10.4 Special Protection Areas (SPA)

Records within 2000m

4

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.

Features are displayed on the Environmental designations map on [page 73 >](#)

ID	Location	Name	Species of interest	Habitat description	Data source
2	593m E	South Pennine Moors Phase 2	Merlin; European golden plover; Short-eared owl	Inland water bodies (Standing water, Running water); Heath, Scrub, Maquis and Garrigue, Phygrana; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens	Natural England
A	807m E	South Pennine Moors Phase 2	Merlin; European golden plover; Short-eared owl	Inland water bodies (Standing water, Running water); Heath, Scrub, Maquis and Garrigue, Phygrana; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens	Natural England
5	1624m SE	South Pennine Moors Phase 2	Merlin; European golden plover; Short-eared owl	Inland water bodies (Standing water, Running water); Heath, Scrub, Maquis and Garrigue, Phygrana; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens	Natural England
-	1886m SE	South Pennine Moors Phase 2	Merlin; European golden plover; Short-eared owl	Inland water bodies (Standing water, Running water); Heath, Scrub, Maquis and Garrigue, Phygrana; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens	Natural England

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**4**

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.

Features are displayed on the Environmental designations map on [page 73 >](#)

ID	Location	Name	Woodland Type
3	667m NE	Ealees Wood	Ancient & Semi-Natural Woodland
4	699m NE	Ealees Wood	Ancient & Semi-Natural Woodland
-	1778m N	Unknown	Ancient & Semi-Natural Woodland
-	1823m N	Unknown	Ancient & Semi-Natural Woodland

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**1**

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

Features are displayed on the Environmental designations map on [page 73 >](#)

ID	Location	Name	Local Authority name
1	On site	Merseyside and Greater Manchester	Rochdale

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

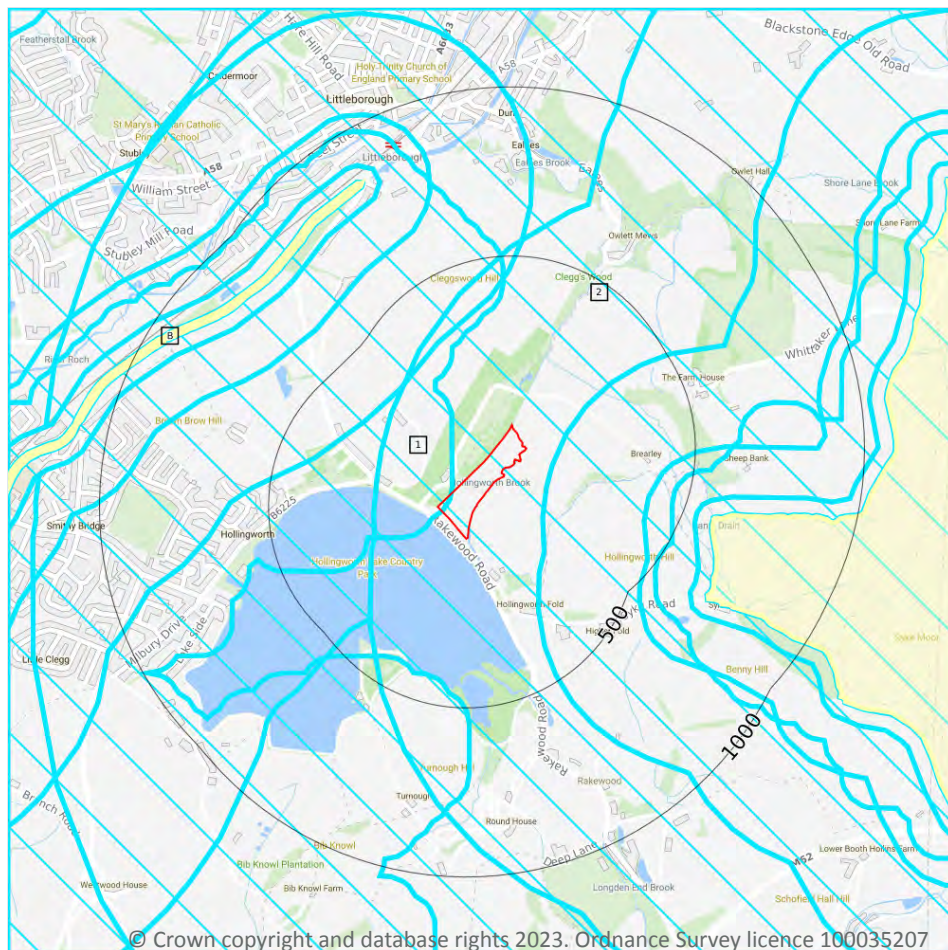
0

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.

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

2

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 80](#) >

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha Residential - Residential development of 50 units or more. Rural residential - Any residential development of 10 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20MW 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. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste of more than 2m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply
2	On site	Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha Residential - Residential development of 50 units or more. Rural residential - Any residential development of 10 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20MW 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. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply

This data is sourced from Natural England.



10.18 SSSI Units

Records within 2000m

3

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.

Features are displayed on the SSSI Impact Zones and Units map on [page 80](#) >

ID: 16
 Location: 593m E
 SSSI name: South Pennine Moors
 Unit name: Clegg Moor
 Broad habitat: Bogs - Upland
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of breeding birds - Golden plover, <i>Pluvialis apricaria</i>	-	-
Aggregations of breeding birds - Twite, <i>Carduelis flavirostris</i>	-	-
Assemblages of breeding birds - Upland moorland and grassland with water bodies	Favourable	25/03/2022
Assemblages of breeding birds - Upland moorland and grassland without water bodies	-	-
H4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>	Unfavourable - Recovering	31/01/2014
H4030 European dry heaths	Unfavourable - Recovering	31/01/2014
H7130 Blanket bog	Unfavourable - Recovering	31/01/2014
Wet heath (upland)	-	-

ID: B
 Location: 825m NW
 SSSI name: Rochdale Canal
 Unit name: Failsworth
 Broad habitat: Standing Open Water And Canals
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - <i>Luronium natans</i> , Floating Water-plantain	Unfavourable - Recovering	25/11/2010



ID: -
Location: 1305m W
SSSI name: Rochdale Canal
Unit name: Failsworth
Broad habitat: Standing Open Water And Canals
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

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 84 >](#)

ID	Location	Name	Grade	Reference Number	Listed date
2	139m S	3, Bear Hill	II	1068530	23/04/1986

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 84](#) >

ID	Location	Name	District	Date of designation
1	110m S	Hollingworth Fold	Rochdale	31/03/1982

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

0

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

1

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 87](#) >

ID	Location	Classification	Description
1	On site	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.



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

0

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.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

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.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

3

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.

Location	Reference	Scheme	Start Date	End Date
1m NE	1449112	Countryside Stewardship (Middle Tier)	01/01/2023	31/12/2027
98m NE	1449112	Countryside Stewardship (Middle Tier)	01/01/2023	31/12/2027



Location	Reference	Scheme	Start Date	End Date
154m NW	1264535	Countryside Stewardship (Middle Tier)	01/01/2022	31/12/2026

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

44

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 90](#) >

ID	Location	Main Habitat	Other habitats
A	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
1	19m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	22m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	28m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
A	30m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	30m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	32m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	32m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
D	34m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
D	41m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
D	46m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	46m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	48m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
D	49m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
D	49m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
D	50m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	51m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
E	55m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	57m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	60m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	61m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	61m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	63m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	66m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	67m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
F	67m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	68m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	71m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	72m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
F	76m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
E	79m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	80m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
E	81m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	88m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	96m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	97m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
G	126m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	131m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	146m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	177m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
G	184m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
10	199m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
H	226m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
H	229m W	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

2

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.

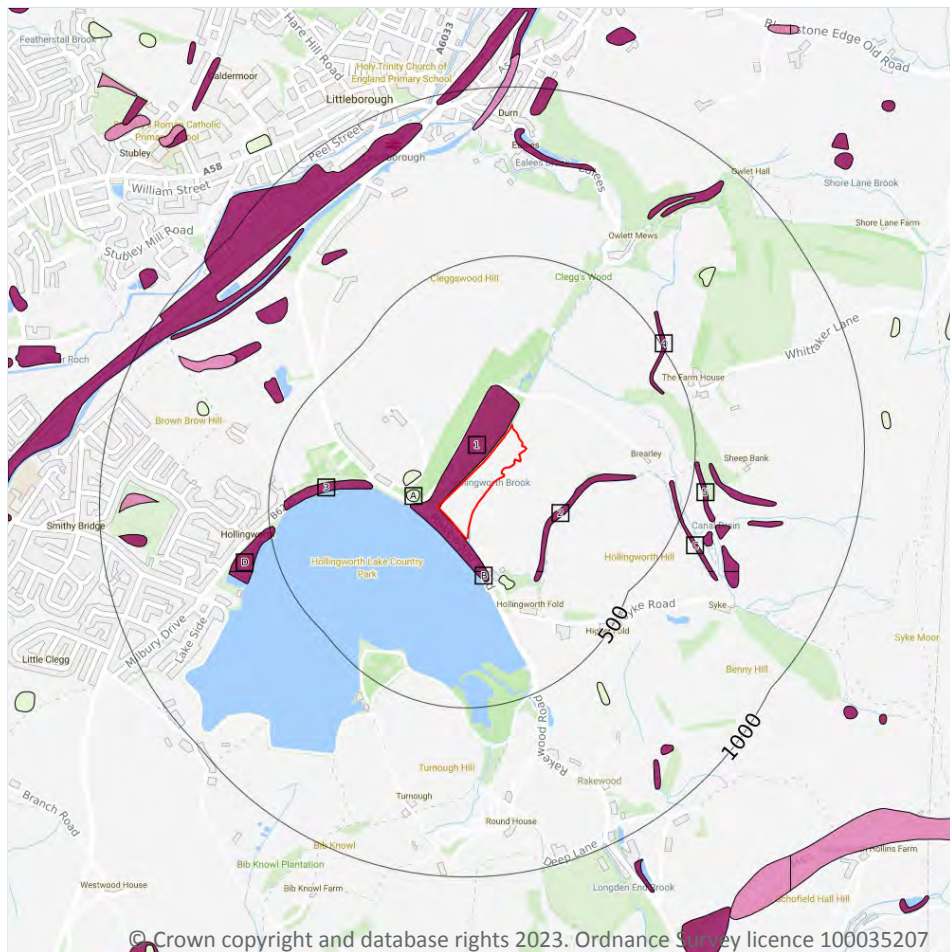
Features are displayed on the Geology 1:10,000 scale - Availability map on [page 94](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SD91NW
2	97m S	Full	Full	Full	Full	SD91SW

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

12

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.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 95](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	61m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
B	100m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	102m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit

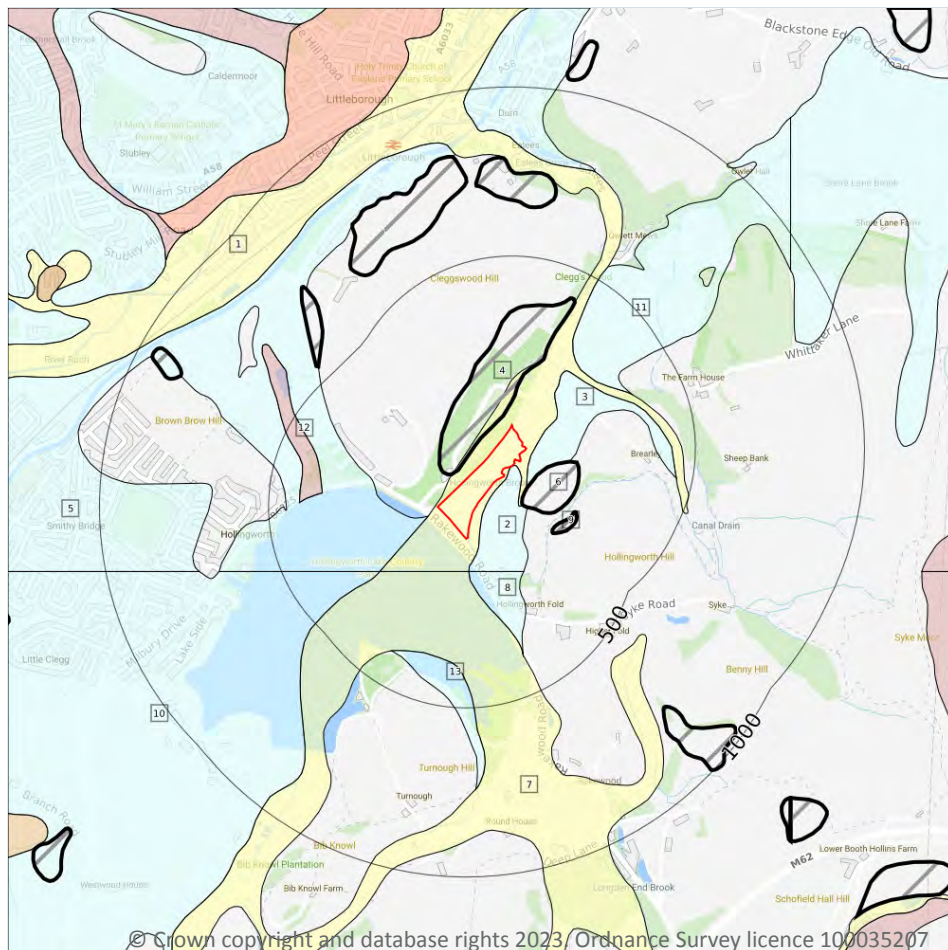


ID	Location	LEX Code	Description	Rock description
B	151m S	WMGR-ARTDP	Infilled Ground	Artificial Deposit
2	182m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	201m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	227m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	415m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
C	435m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
D	486m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	500m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

10

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 97](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
2	1m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	22m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
5	39m SW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton



ID	Location	LEX Code	Description	Rock description
7	97m S	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
8	97m S	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
10	256m SW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
11	261m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
12	343m W	HEAD-DMTN	Head - Diamicton	Diamicton
13	359m S	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

3

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.

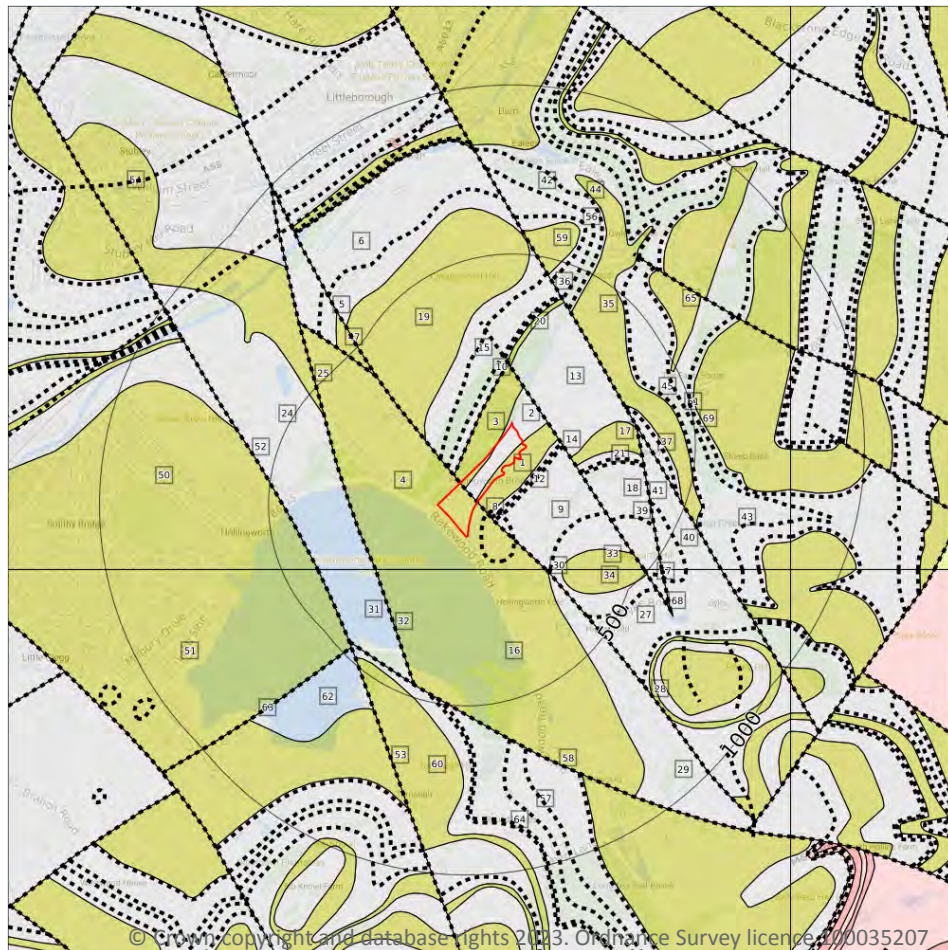
Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 97 >](#)

ID	Location	LEX Code	Description	Rock description
4	36m NW	SLIP-UNKNOWN	Landslide Deposits	Unknown/unclassified Entry
6	65m E	SLIP-UNKNOWN	Landslide Deposits	Unknown/unclassified Entry
9	211m SE	SLIP-UNKNOWN	Landslide Deposits	Unknown/unclassified Entry

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

33

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.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 99](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	GAS-SDST	Great Arc Sandstone - Sandstone	Langsettian Sub-age
2	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
3	On site	GAS-SDST	Great Arc Sandstone - Sandstone	Langsettian Sub-age



ID	Location	LEX Code	Description	Rock age
4	On site	MLRS-SDST	Milnrow Sandstone - Sandstone	Langsettian Sub-age
6	29m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
9	47m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
13	89m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
16	97m S	MLRS-SDST	Milnrow Sandstone - Sandstone	Langsettian Sub-age
17	135m E	GAS-SDST	Great Arc Sandstone - Sandstone	Langsettian Sub-age
18	158m E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
19	162m NW	DF-SDST	Darwen Flags - Sandstone	Langsettian Sub-age
20	168m N	GAS-SDST	Great Arc Sandstone - Sandstone	Langsettian Sub-age
24	244m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
27	252m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
29	259m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
31	265m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
33	295m SE	DF-SDST	Darwen Flags - Sandstone	Langsettian Sub-age
34	296m SE	DF-SDST	Darwen Flags - Sandstone	Langsettian Sub-age
35	312m NE	WH-SDST	Woodhead Hill Rock - Sandstone	Langsettian Sub-age
37	314m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
40	331m E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
42	370m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
43	375m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
47	398m NW	DF-SDST	Darwen Flags - Sandstone	Langsettian Sub-age
50	403m SW	MLRS-SDST	Milnrow Sandstone - Sandstone	Langsettian Sub-age



ID	Location	LEX Code	Description	Rock age
51	403m SW	MLRS-SDST	Milnrow Sandstone - Sandstone	Langsettian Sub-age
54	426m W	MLRS-SDST	Milnrow Sandstone - Sandstone	Langsettian Sub-age
57	451m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
59	451m N	GAS-SDST	Great Arc Sandstone - Sandstone	Langsettian Sub-age
60	467m SW	HER-SDST	Helpet Edge Rock - Sandstone	Langsettian Sub-age
62	472m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
65	483m NE	GNR-SDST	Ganister Rock - Sandstone	Langsettian Sub-age
67	491m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	36
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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.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 99](#) >

ID	Location	Category	Description
5	On site	FAULT	Normal fault, inferred
7	29m W	ROCK	Coal seam, inferred coincident with bedrock geology boundary
8	38m S	LANDFORM	Kettle hole; closed hollow
10	59m W	FOSSIL_HORIZON	Fossil horizon, marine band
11	60m S	ROCK	Coal seam, inferred
12	69m S	FOSSIL_HORIZON	Fossil horizon, marine band
14	89m NE	FAULT	Normal fault, inferred
15	92m NW	ROCK	Coal seam, inferred
21	176m E	ROCK	Coal seam, inferred
22	183m E	FOSSIL_HORIZON	Fossil horizon, marine band



ID	Location	Category	Description
23	194m N	ROCK	Coal seam, inferred
25	244m SW	FAULT	Normal fault, inferred
26	248m SE	ROCK	Coal seam, inferred
28	252m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side
30	263m SE	ROCK	Coal seam, inferred
32	265m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
36	312m NE	FAULT	Normal fault, inferred
38	315m NE	ROCK	Coal seam, inferred
39	324m E	ROCK	Coal seam, inferred
41	331m E	FAULT	Normal fault, inferred
44	377m NE	ROCK	Coal seam, inferred
45	387m NE	ROCK	Coal seam, inferred
46	396m NE	ROCK	Coal seam, inferred
48	398m NW	FAULT	Normal fault, inferred
49	402m E	ROCK	Coal seam, inferred
52	403m SW	FAULT	Normal fault, inferred
53	403m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
55	426m SE	ROCK	Coal seam, inferred
56	437m N	ROCK	Coal seam, inferred
58	451m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
61	469m NE	ROCK	Coal seam, inferred
63	472m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
64	475m S	FOSSIL_HORIZON	Fossil horizon, marine band
66	485m S	ROCK	Coal seam, inferred
68	491m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side
69	499m E	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

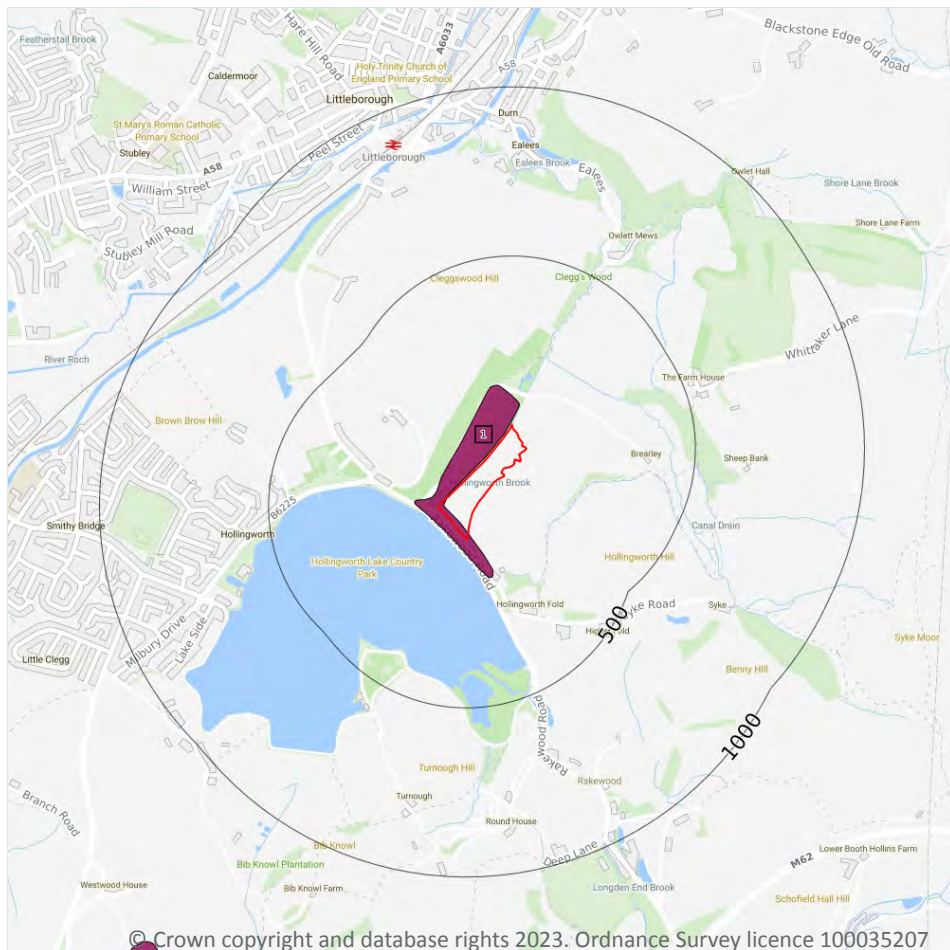
Features are displayed on the Geology 1:50,000 scale - Availability map on [page 103](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW076_rochdale_v4

This data is sourced from the British Geological Survey.



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



- Site Outline
- Search buffers in metres (m)
- Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m

1

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.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on [page 104](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.



15.3 Artificial ground permeability (50k)

Records within 50m

1

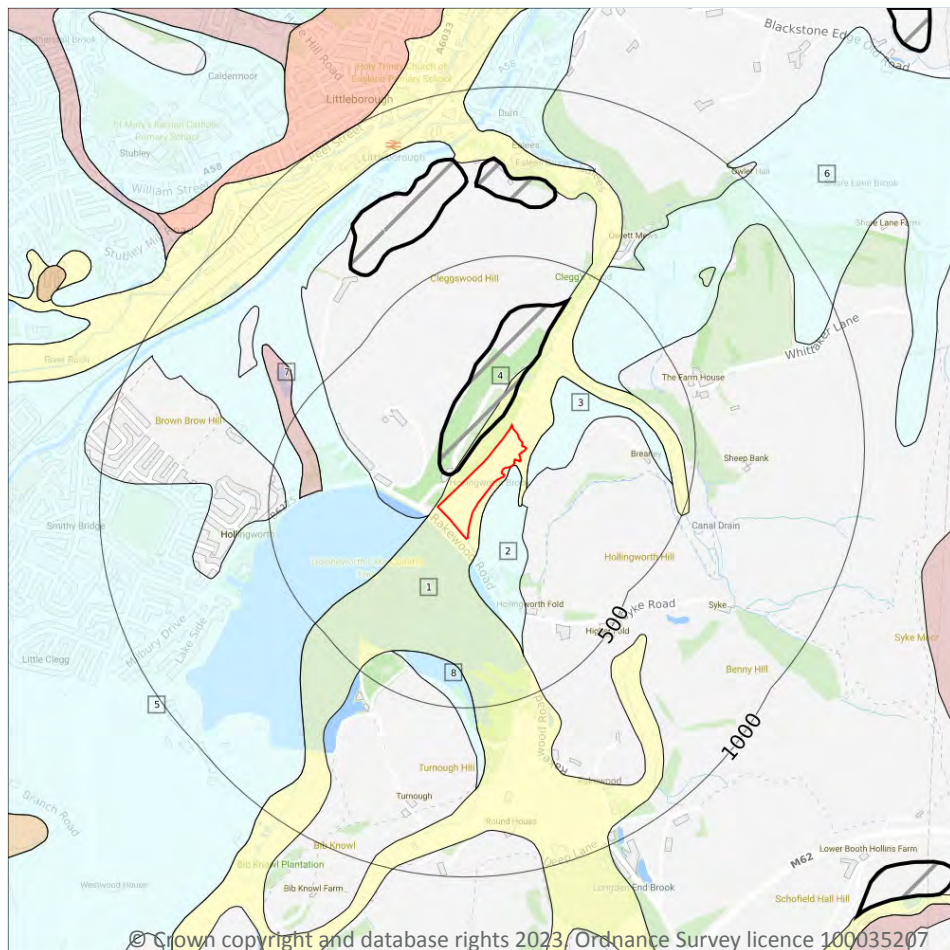
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

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

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

7

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 106](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	1m NE	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
3	22m NE	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
5	37m SW	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON



ID	Location	LEX Code	Description	Rock description
6	261m NE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
7	345m W	HEAD-DMTN	HEAD	DIAMICTON
8	358m S	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

4

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	Intergranular	High	Very Low
1m NE	Mixed	High	Low
22m NE	Mixed	High	Low
37m SW	Mixed	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

1

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.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 106](#) >

ID	Location	LEX Code	Description	Rock description
4	36m NW	SLIP-UNKNOWN	LANDSLIDE DEPOSITS	UNKNOWN/UNCLASSIFIED ENTRY

This data is sourced from the British Geological Survey.



15.7 Landslip permeability (50k)

Records within 50m

1

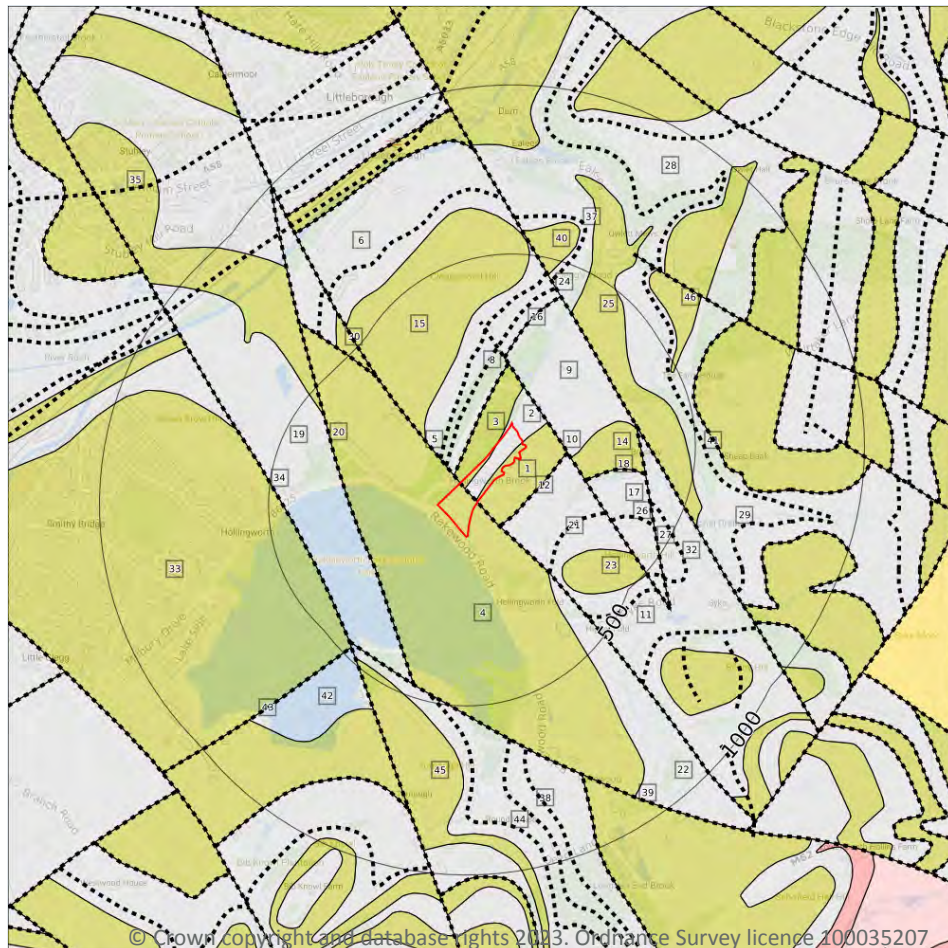
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

Flow type	Maximum permeability	Minimum permeability
Mixed	Very High	Low

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 109](#) >

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



ID	Location	LEX Code	Description	Rock age
4	On site	MLRS-SDST	MILNROW SANDSTONE - SANDSTONE	WESTPHALIAN
6	29m W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
9	89m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
11	90m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
14	136m E	GAS-SDST	GREAT ARC SANDSTONE - SANDSTONE	WESTPHALIAN
15	162m NW	DF-SDST	DARWEN FLAGS - SANDSTONE	WESTPHALIAN
17	201m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
19	244m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
22	260m SE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
23	295m SE	DF-SDST	DARWEN FLAGS - SANDSTONE	WESTPHALIAN
25	312m NE	WH-SDST	WOODHEAD HILL ROCK - SANDSTONE	WESTPHALIAN
28	370m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
29	374m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
30	398m NW	DF-SDST	DARWEN FLAGS - SANDSTONE	WESTPHALIAN
33	403m SW	MLRS-SDST	MILNROW SANDSTONE - SANDSTONE	WESTPHALIAN
35	426m W	MLRS-SDST	MILNROW SANDSTONE - SANDSTONE	WESTPHALIAN
38	451m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
40	451m N	GAS-SDST	GREAT ARC SANDSTONE - SANDSTONE	WESTPHALIAN
42	472m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
45	479m SW	HER-SDST	HELPET EDGE ROCK - SANDSTONE	WESTPHALIAN
46	483m NE	GNR-SDST	GANISTER ROCK - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m

4

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	High	Moderate
On site	Fracture	High	Moderate
On site	Fracture	High	Moderate
On site	Fracture	Moderate	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

22

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 109](#) >

ID	Location	Category	Description
5	On site	FAULT	Fault, inferred
7	29m W	ROCK	Coal seam, inferred
8	66m W	FOSSIL_HORIZON	Marine band
10	89m NE	FAULT	Fault, inferred
12	90m S	FOSSIL_HORIZON	Marine band
13	92m NW	ROCK	Coal seam, inferred
16	194m N	ROCK	Coal seam, inferred
18	201m E	FOSSIL_HORIZON	Marine band
20	244m SW	FAULT	Fault, inferred
21	248m SE	ROCK	Coal seam, inferred
24	312m NE	FAULT	Fault, inferred



ID	Location	Category	Description
26	324m E	ROCK	Coal seam, inferred
27	331m E	FAULT	Fault, inferred
31	398m NW	FAULT	Fault, inferred, displacement unknown
32	403m E	ROCK	Coal seam, inferred
34	403m SW	FAULT	Fault, inferred
36	426m SE	ROCK	Coal seam, inferred
37	437m N	ROCK	Coal seam, inferred
39	451m SW	FAULT	Fault, inferred
41	469m NE	ROCK	Coal seam, inferred
43	472m SW	FAULT	Fault, inferred
44	475m S	FOSSIL_HORIZON	Marine band

This data is sourced from the British Geological Survey.



16 Boreholes

16.1 BGS Boreholes

Records within 250m

0

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.

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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

17.1 Shrink swell clays

Records within 50m

2

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).

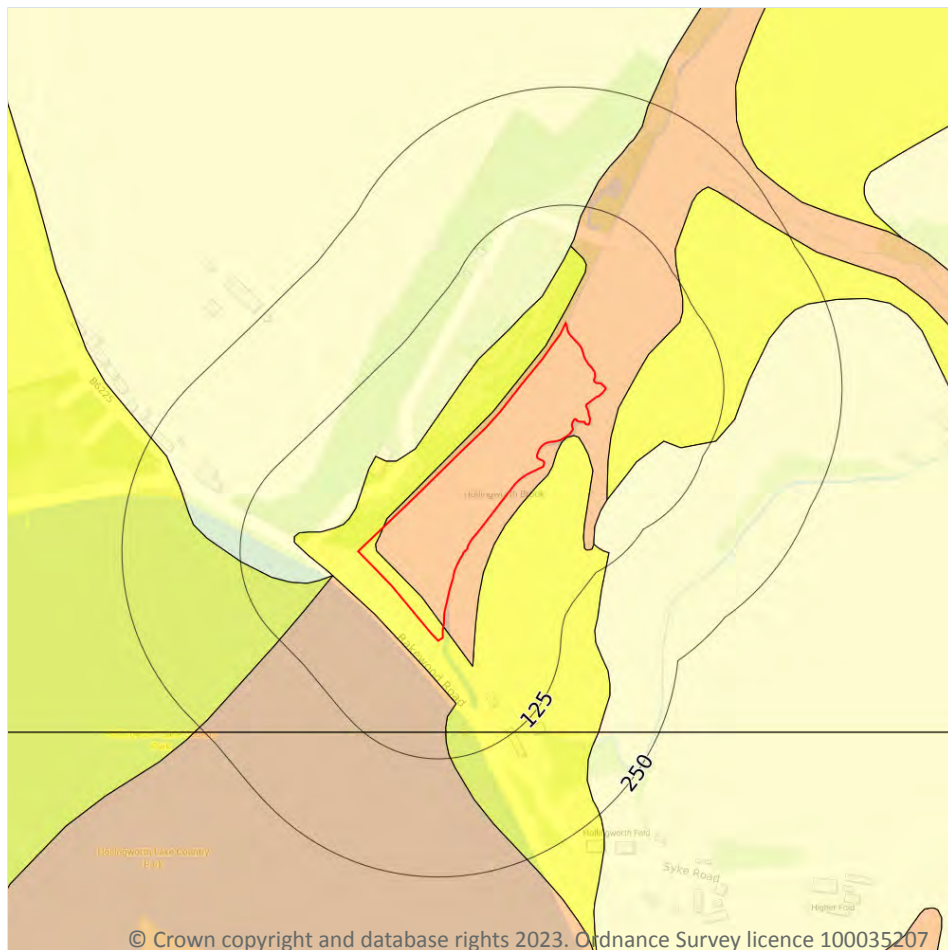
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 114 >](#)

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.
7m SW	Negligible	Ground conditions predominantly non-plastic.

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

5

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 115 >](#)

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.

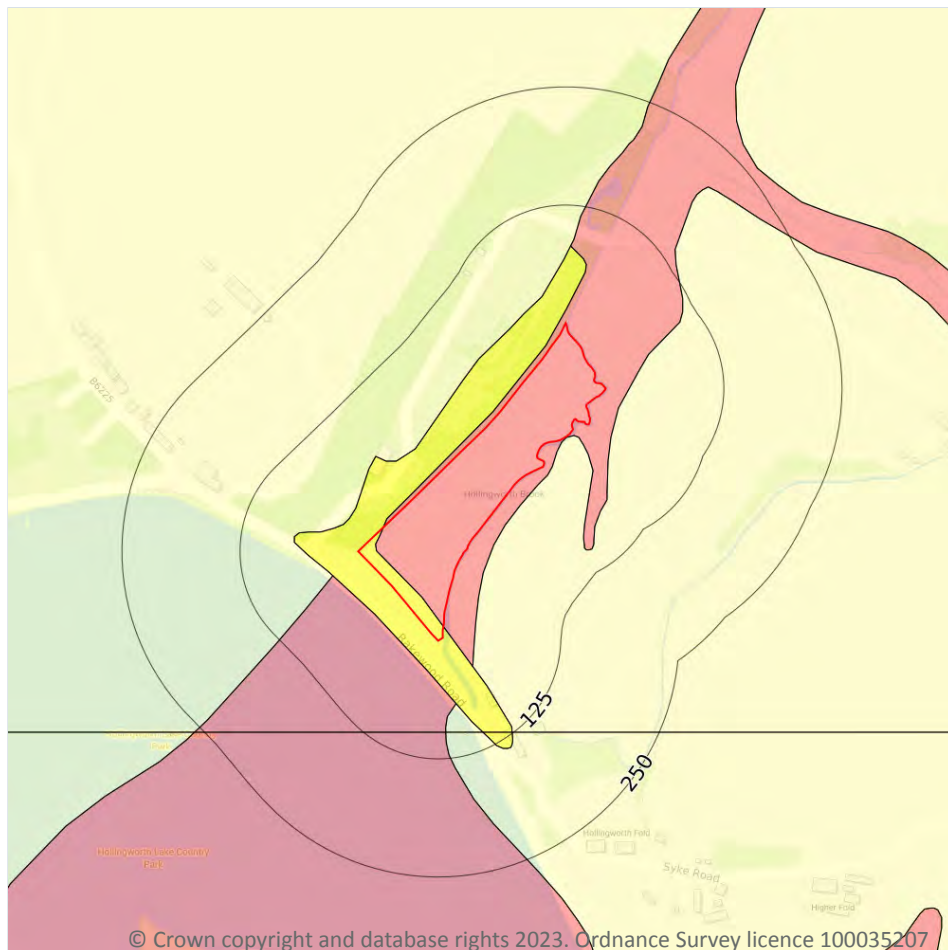


Location	Hazard rating	Details
On site	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.
22m NE	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.
30m S	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.
31m W	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

5

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 117 >](#)

Location	Hazard rating	Details
On site	Very low	Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.

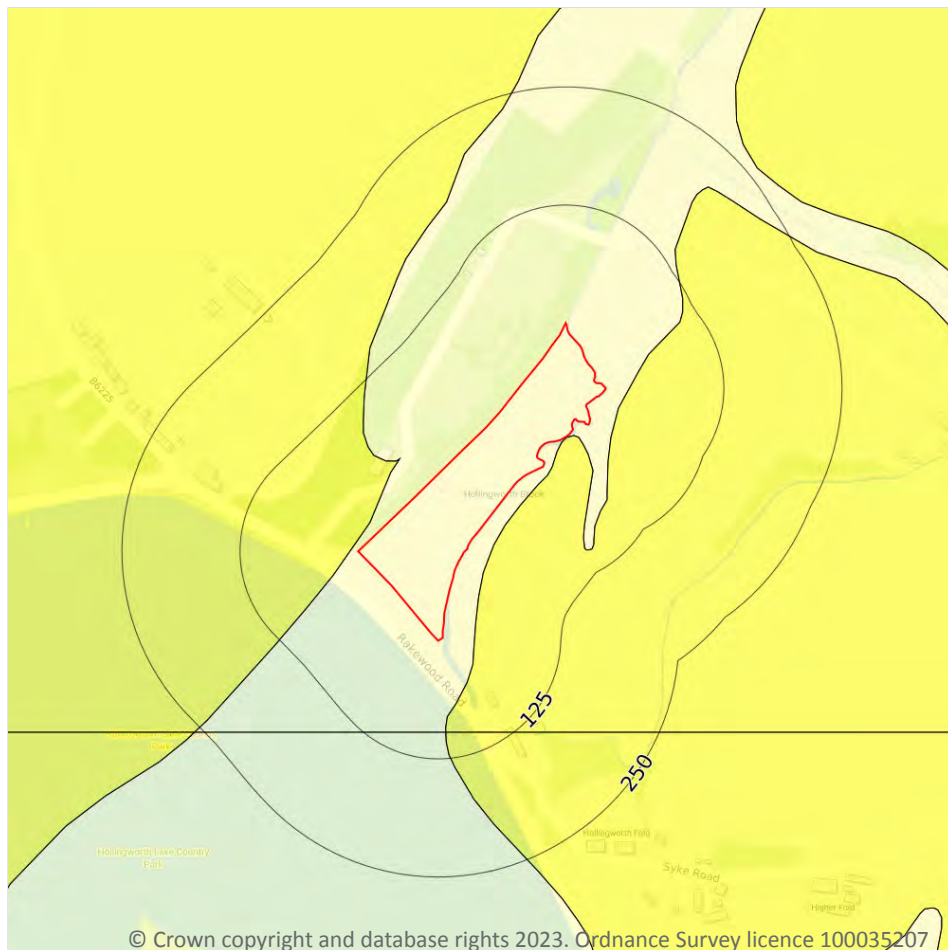


Location	Hazard rating	Details
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.
1m NE	Negligible	Compressible strata are not thought to occur.
30m S	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.
31m W	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

3

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 119 >](#)

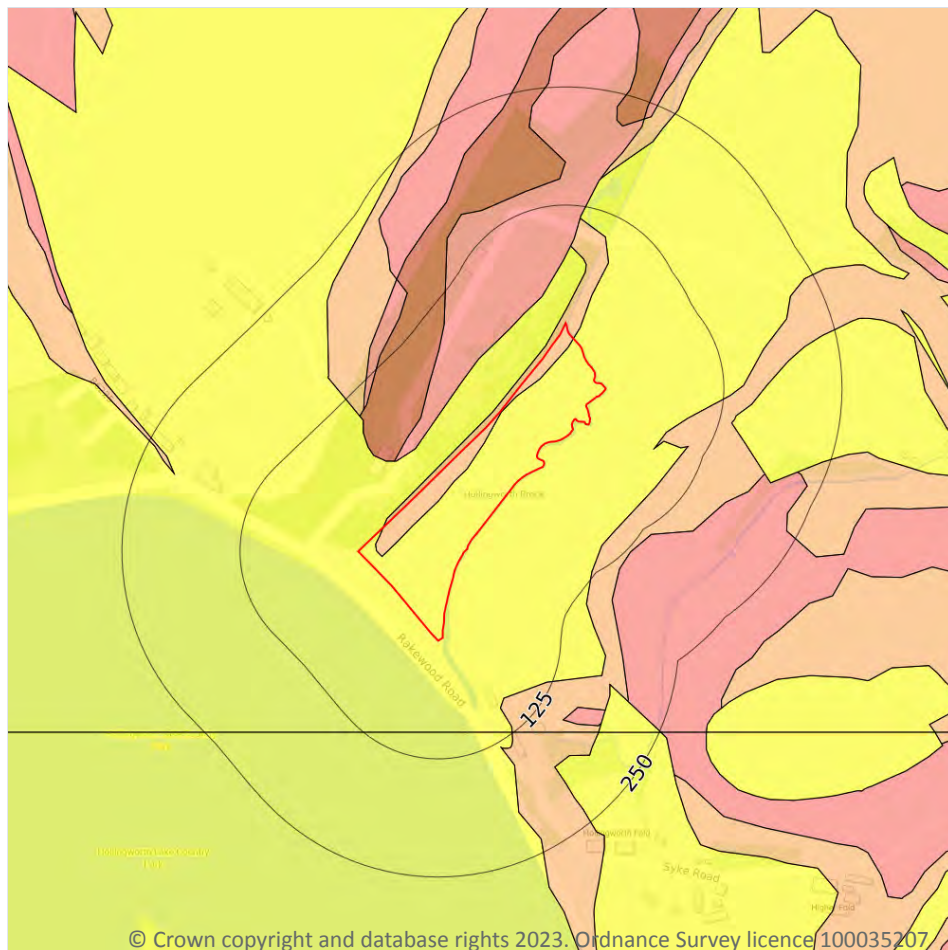
Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
1m NE	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
7m SW	Very low	Deposits with potential to collapse when 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

4

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 121](#) >

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.

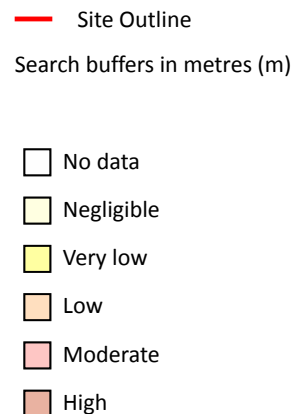


Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
36m NW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
42m W	High	Slope instability problems almost certainly present and may be active. Significant constraint on land use.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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 123 >](#)

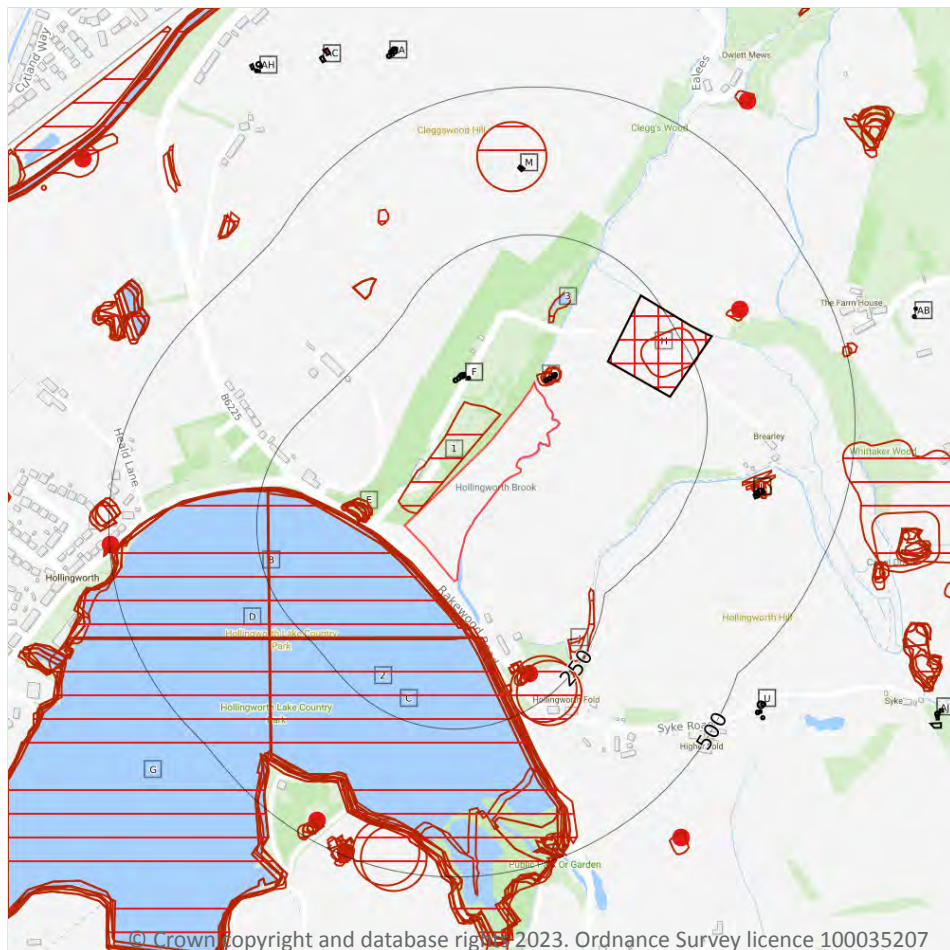
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- ▨ Surface ground workings
- ▧ Underground workings
- ▨ Underground mining extents
- ▧ Historical mineral planning areas
- ▨ TCA non-coal mining
- 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 BritPits

Records within 500m

5

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.

Features are displayed on the Mining and ground workings map on [page 125](#) >

ID	Location	Details	Description
I	200m S	Name: Bear Hill House Quarry Address: Rakewood, LITTLEBOROUGH, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
N	360m NE	Name: Whitaker Address: LITTLEBOROUGH, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
Q	465m SW	Name: Black Nursery Address: Rakewood, LITTLEBOROUGH, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
Q	494m S	Name: Turnough Hill Quarries Address: Rakewood, LITTLEBOROUGH, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
R	498m W	Name: Hollingworth Address: Hollingworth, LITTLEBOROUGH, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

47

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 and ground workings map on [page 125 >](#)



ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Refuse Heap	1968	1:10560
A	7m NE	Refuse Heap	1908	1:10560
A	13m NE	Unspecified Heap	1928	1:10560
A	16m NE	Unspecified Heap	1938	1:10560
A	21m NE	Refuse Heap	1911	1:10560
A	21m NE	Refuse Heap	1911	1:10560
A	21m NE	Refuse Heap	1911	1:10560
A	28m NE	Unspecified Heap	1949	1:10560
2	33m SW	Lake	1890	1:10560
B	36m SW	Lake	1989	1:10000
B	36m SW	Lake	1976	1:10000
B	36m SW	Lake	1968	1:10560
C	37m SW	Lake	1910	1:10560
D	37m SW	Lake	1890	1:10560
C	38m SW	Lake	1910	1:10560
D	40m SW	Lake	1938	1:10560
D	40m SW	Reservoir	1851	1:10560
D	45m SW	Lake	1928	1:10560
D	45m SW	Lake	1908	1:10560
E	59m W	Unspecified Pit	1976	1:10000
E	59m W	Unspecified Pit	1949	1:10560
E	59m W	Unspecified Pit	1968	1:10560
E	61m W	Unspecified Pit	1910	1:10560
E	61m W	Unspecified Pit	1910	1:10560
E	62m W	Unspecified Pit	1910	1:10560
E	66m W	Unspecified Pit	1938	1:10560
E	69m W	Unspecified Pit	1928	1:10560
E	71m W	Unspecified Ground Workings	1908	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
G	95m S	Lake	1976	1:10000
G	95m S	Lake	1967	1:10560
G	95m S	Lake	1954	1:10560
3	105m NE	Pond	1989	1:10000
H	124m NE	Colliery	1892	1:10560
I	171m S	Unspecified Pit	1938	1:10560
I	173m S	Unspecified Ground Workings	1928	1:10560
I	173m S	Unspecified Ground Workings	1908	1:10560
H	177m NE	Colliery	1891	1:10560
I	180m S	Unspecified Quarry	1890	1:10560
I	186m S	Unspecified Quarry	1938	1:10560
I	190m S	Unspecified Old Quarry	1908	1:10560
I	191m S	Unspecified Old Quarry	1910	1:10560
I	192m S	Unspecified Quarry	1890	1:10560
I	193m S	Unspecified Old Quarry	1910	1:10560
I	196m S	Unspecified Ground Workings	1928	1:10560
I	196m S	Unspecified Ground Workings	1908	1:10560
J	213m SE	Unspecified Pit	1967	1:10560
J	218m SE	Unspecified Pit	1890	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

77

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 and ground workings map on [page 125 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
A	17m NE	Old Coal Shafts	1908	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
A	17m NE	Unspecified Old Shafts	1928	1:10560
A	24m NE	Unspecified Old Shafts	1938	1:10560
A	32m NE	Old Coal Shafts	1911	1:10560
A	32m NE	Unspecified Disused Shaft	1976	1:10000
A	32m NE	Unspecified Disused Shaft	1968	1:10560
A	36m NE	Unspecified Old Shafts	1949	1:10560
F	93m N	Unspecified Shaft	1892	1:10560
F	102m N	Unspecified Disused Shaft	1976	1:10000
F	102m N	Unspecified Disused Shaft	1968	1:10560
F	104m N	Unspecified Old Shafts	1949	1:10560
F	105m N	Unspecified Shaft	1890	1:10560
F	105m N	Old Coal Shafts	1911	1:10560
F	105m N	Unspecified Old Shafts	1938	1:10560
F	107m N	Old Coal Shafts	1908	1:10560
F	107m N	Unspecified Old Shafts	1928	1:10560
H	124m NE	Colliery	1892	1:10560
L	349m E	Unspecified Old Shaft	1910	1:10560
L	350m E	Unspecified Old Shaft	1930	1:10560
L	350m E	Unspecified Old Shaft	1909	1:10560
L	354m E	Unspecified Disused Shaft	1976	1:10000
L	354m E	Unspecified Disused Shaft	1968	1:10560
M	358m N	Unspecified Old Level	1938	1:10560
L	360m E	Unspecified Old Shaft	1949	1:10560
M	360m N	Unspecified Old Level	1928	1:10560
U	550m SE	Unspecified Disused Shaft	1976	1:10000
U	552m SE	Old Air Shaft	1930	1:10560
U	552m SE	Old Air Shaft	1909	1:10560
U	555m SE	Disused Air Shaft	1967	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
U	555m SE	Old Air Shaft	1954	1:10560
U	556m SE	Old Air Shaft	1910	1:10560
U	556m SE	Air Shaft	1890	1:10560
U	564m SE	Air Shaft	1891	1:10560
AA	601m N	Old Air Shaft	1928	1:10560
AA	601m N	Air Shaft	1908	1:10560
AA	602m N	Old Air Shaft	1938	1:10560
AA	604m N	Unspecified Disused Shaft	1976	1:10000
AA	604m N	Unspecified Old Shaft	1968	1:10560
AA	607m N	Air Shaft	1890	1:10560
AA	609m N	Air Shaft	1911	1:10560
AA	610m N	Old Air Shaft	1949	1:10560
AB	624m E	Unspecified Shaft	1891	1:10560
AB	631m E	Unspecified Shaft	1892	1:10560
AC	649m N	Clay Level	1908	1:10560
AC	655m N	Clay Level	1911	1:10560
AH	701m NW	Old Air Shaft	1938	1:10560
AH	704m NW	Old Air Shaft	1928	1:10560
AH	705m NW	Old Air Shaft	1949	1:10560
AH	708m NW	Unspecified Disused Shaft	1989	1:10000
AH	711m NW	Clay Level	1908	1:10560
AJ	795m SE	Unspecified Disused Shaft	1976	1:10000
AJ	795m SE	Unspecified Disused Shaft	1967	1:10560
AJ	797m SE	Unspecified Old Shaft	1954	1:10560
AJ	798m SE	Unspecified Old Shaft	1910	1:10560
AJ	798m SE	Unspecified Old Shaft	1909	1:10560
-	799m E	Unspecified Old Shaft	1930	1:10560
-	799m E	Unspecified Old Shaft	1909	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
-	799m E	Unspecified Shaft	1891	1:10560
-	800m E	Unspecified Old Shaft	1911	1:10560
AJ	800m SE	Unspecified Old Shaft	1930	1:10560
-	802m E	Unspecified Disused Shaft	1989	1:10000
-	802m E	Unspecified Disused Shaft	1976	1:10000
-	802m E	Unspecified Disused Shaft	1968	1:10560
-	808m E	Unspecified Shaft	1892	1:10560
-	808m E	Unspecified Old Shaft	1949	1:10560
-	846m SE	Unspecified Disused Level	1976	1:10000
-	854m SE	Unspecified Old Level	1930	1:10560
-	862m SE	Unspecified Disused Level	1967	1:10560
-	869m SE	Unspecified Old Level	1910	1:10560
-	873m SE	Unspecified Old Level	1954	1:10560
-	874m SE	Unspecified Old Level	1909	1:10560
-	962m S	Unspecified Old Shaft	1891	1:10560
-	962m S	Old Coal Shaft	1908	1:10560
-	965m NE	Air Shaft	1891	1:10560
-	967m S	Unspecified Old Shaft	1910	1:10560
-	973m NE	Air Shaft	1892	1:10560
-	994m S	Unspecified Old Shaft	1891	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from 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 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.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.



18.9 Researched mining

Records within 500m

0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 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.



18.13 Brine areas

Records on site	0
-----------------	---

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.

18.14 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

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



19 Ground cavities and sinkholes

19.1 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.

19.2 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.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

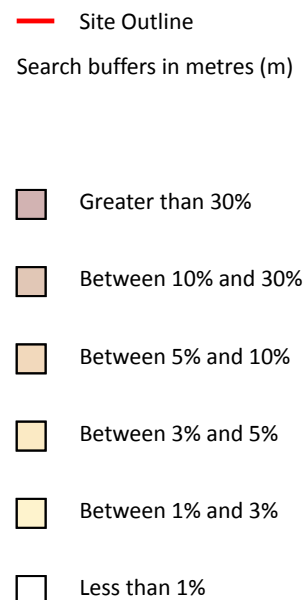
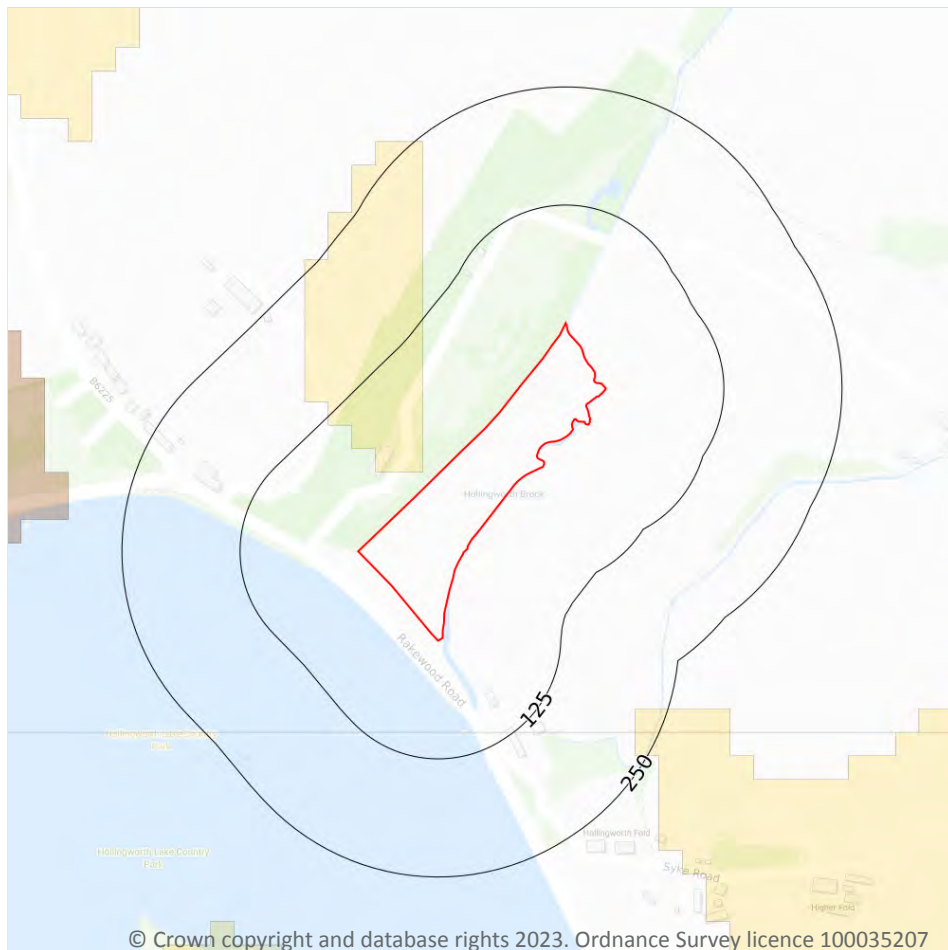
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 137 >](#)

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



This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

7

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	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
0m SW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
14m W	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
18m W	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
29m W	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 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.



21.3 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.



22 Railway infrastructure and projects

22.1 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.

22.2 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.

22.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m**0**

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.

This data is sourced from Ordnance Survey/Groundsure.

22.5 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.

22.6 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.

22.7 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.

22.8 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.

22.9 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.

22.10 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: www.groundsure.com/terms-and-conditions-april-2023/ ↗.



APPENDIX D

- (i) Coal Authority Consultants Report
- (ii) BGS Borehole Logs



The Coal
Authority

Consultants Coal Mining Report

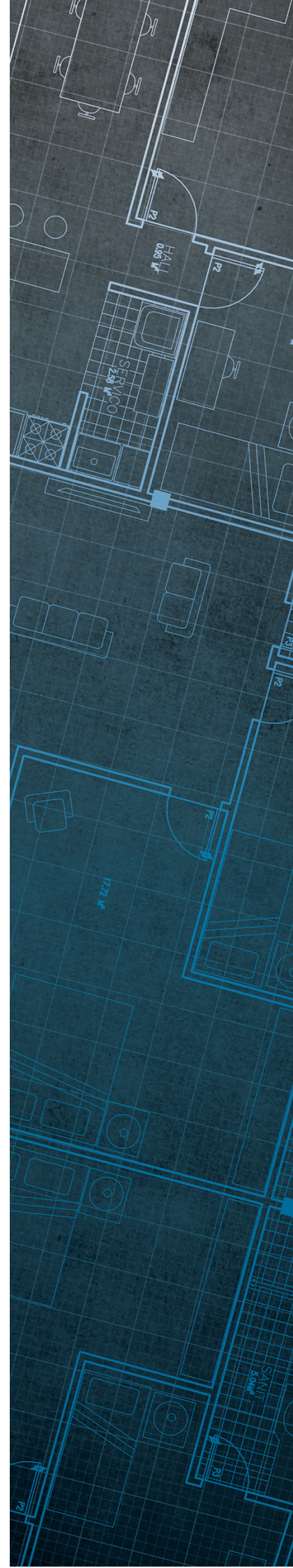
Rakewood Road, Littleborough, OL15
0aq
Greater Manchester

Date of enquiry:
Date enquiry received:
Issue date:

17 November 2023
17 November 2023
17 November 2023

Our reference:
Your reference:

51003390057001
GS-NEN-IHN-NBD-ZBR



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

Rakewood Road, Littleborough, OL15 0aq
Greater Manchester

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

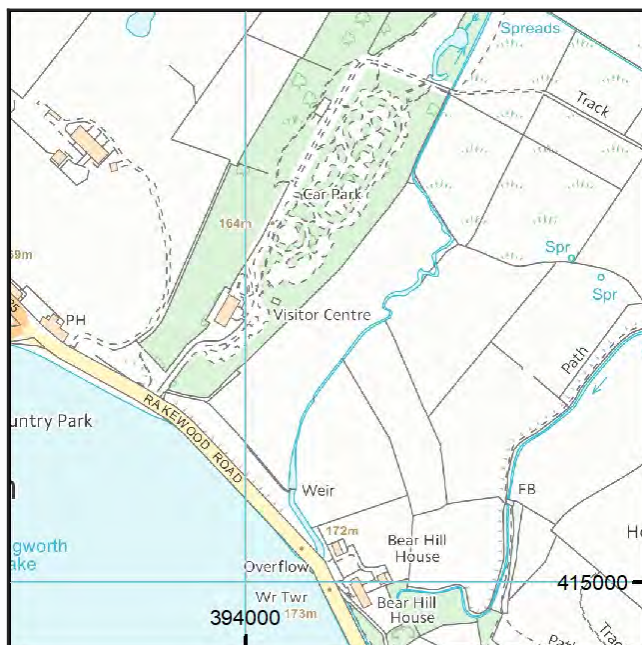
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	LOWER MOUNTAIN	Coal	3XAP	81	Beneath Property	7.1	South-West	60	1900

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	394415-003	394218 415491		Coal	
Shaft	394415-004	394210 415447	This shaft was capped in April 1978 by the Closed Collieries team of the National Coal Board to an unknown specification.	Coal	
Shaft	394415-005	394044 415313		Coal	

Abandoned mine plan catalogue numbers

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

0	2011	16820
NW1225	PO0	

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

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
UPPER FOOT	Coal	Yes	Within	N/A	180
UPPER MOUNTAIN	Coal	Yes	Within	N/A	190

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

None recorded within 50 metres of the enquiry boundary.

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.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

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. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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.

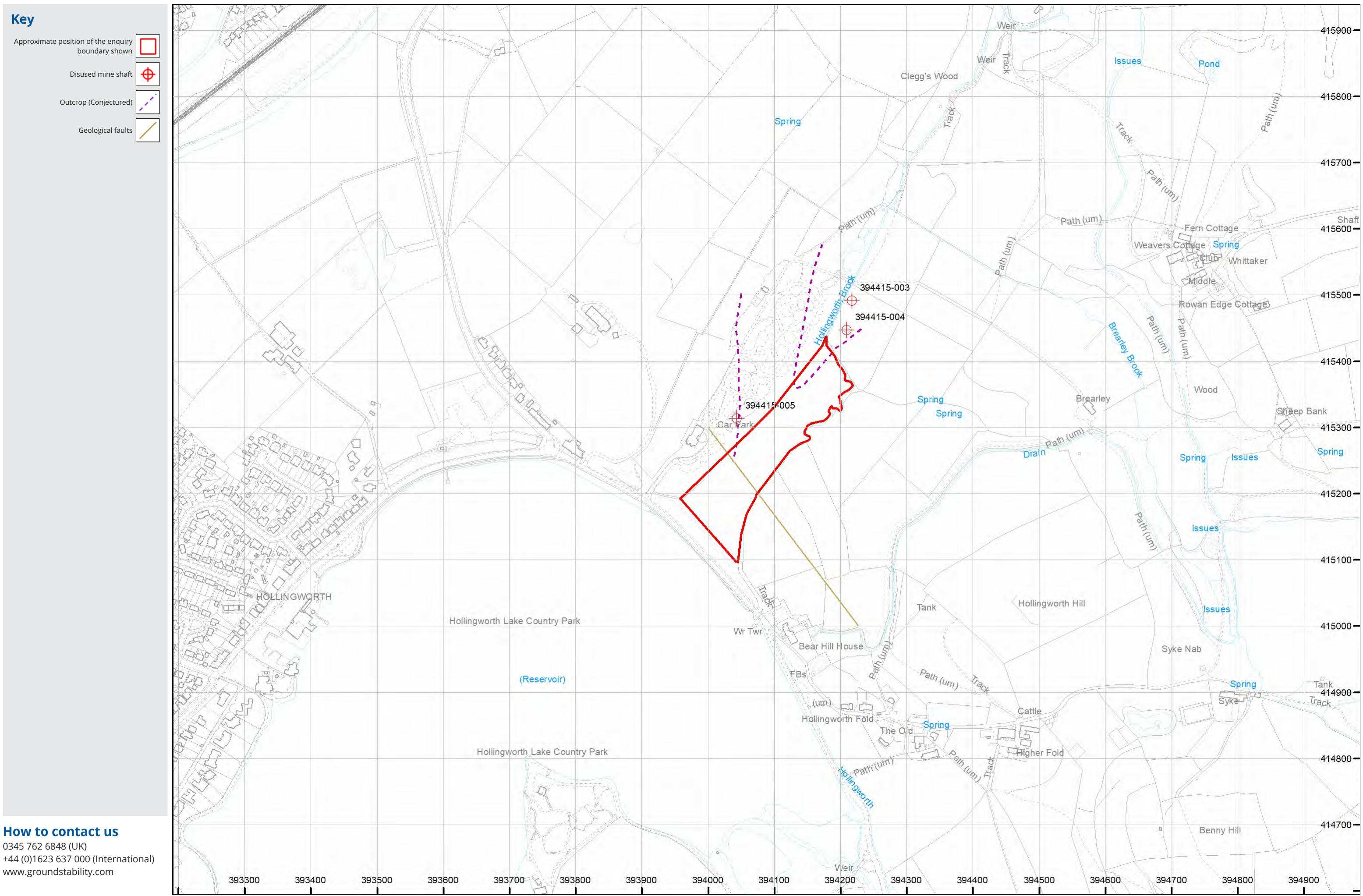
Withdrawal of support notices

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.



47
Brearley Farm Colliery.
Littleborough

Home Office Plan 3725

Worked by Messrs Joseph Brearley. Abandoned 1896. Close to Brearley Farm, Whitaker, Littleborough worked in 1894, 1895 & 1896.

Little Mine or Lower foot Coal. Coal 8" - 10" thick. 36 feet below Mountain Mine Coal. Worked up to edge of main Brearley fault. Throw here about 60 feet west.

Day eye to workings about forty yards north of Brearley Farm. Coal crops out in bank to the immediate north of Brearley Farm. Coal overlain by shale. Over more than nine feet nowhere. Dip of beds 1 in 6 ESE.

3
Listed in the Mining file
SD 91 NW : 12.

Brearley Colliery.

Littleborough. Workings in M. M. or Jamnaster Coal.
Pit section.

{ Rock ——— 15'
 Grey lags — 12'
 Black shale — 12'
 M. M. Coal — 2'



Coal worked by Messrs Stott & Oldroyd at an earlier period & later in 1893 by Mr. Joseph Brearley.

Whole shaded on plan.

A few faults shown. Dip of coal at 7 SW.

Home Office Plan 2011.

Coal worked 1876 - 1886.

Entrance to workings a breast eye 100 yards NW of Brearley Farm. See 25 plan (81.15. NW.).

OVER

SD 9456 1525

SD91/60
3

Brearley Farm Colliery.

Littleborough

Home Office Plan 3725

Worked by Messrs Joseph Brearley. Abandoned 1896. Close to Brearley Farm, Whitaker, Littleborough.

Worked in 1894, 1895 & 1896.

Little Mine or Lower Foot Coal. Coal 8" - 10" thick. 36 feet below Mountain Mine Coal. Worked up to edge of main Brearley fault. Throws here about 60 feet west.

Dry eye to workings about fifty yards north of Brearley Farm. Coal crops out in bank to the immediate north of Brearley Farm. Coal overlain by shale. Cover more than nine feet nowhere. Dip of beds 1 in 6 SSE.

SD91/60

Brearley Colliery.

Littleborough. Workings in M. M. or Laminated Coal.

Bit section.

Rock	15'
Grey lags	12'
Black shale	12'
M. M. Coal	2'

Coal worked by Messrs Stott & Oldwood at an earlier period & later in 1893 by Mr. Joseph Brearley.

Whole shaded on plan.

A few faults shown. Dip of coal at 7 SW.

Home Office Plan 2011.

Coal worked 1876 - 1886.

Entrance to workings a heathery 100-yard NW of Brearley Farm. See 25 plan (84.5. NW.).

OVER



SD91/140



British
Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

INFORMATION MANAGEMENT PROGRAMME

A SITE DETAILS

Borehole drilled for: Mr Wilkes
Location: Brearley Farm Littleborough
NGR (8 figures): SD945153
Ground Level (if known): 174m Please attach site plan
Drilling Company: NATIONAL WATER WELL ENGINEERS
Date of Drilling: Commenced 12/12/12 Completed / /

B CONSTRUCTION DETAILS

Borehole Datum (if not ground level) above
m below GL
(point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)
Borehole drilled diameter 200 mm from 0 to 12 m/depth
150 mm from 0 to 4.8 m/depth
mm from to m/depth
Casing material plastic diameter 150 mm from 0 to 12 m/depth
and type (e.g. if plain steel, plastic/slotted)
Casing material plastic diameter 150 mm from 0 to 12 m/depth
Casing material plastic diameter 100 mm from 0 to 30 m/depth
Casing material diameter 100 mm from 30 to 4.8 m/depth plastic/slotted
Grouting details
Water struck at 12 m (depth below datum - mbd)
m (depth below datum - mbd)
Rest water level on completion 11.5 mbd

C TEST PUMPING SUMMARY (Please supply full details on Forms WR-39)

Test Pumping Datum m above
(if different from borehole datum) below borehole datum (mbd)
Pump Suction depth mbd
Water Level (Start of Test) mbd
Water Level (End of Test) mbd
Pumping rate m³/d:1/s
for days/hours
Recovery to mbd in mins: hrs: days
(from end of pumping)
Date(s) of measurements
Please supply chemical Analysis if available



D STRATA LOG

Geological Classification (BGS only)	Description of strata	Thickness	Depth
		m	m
	hard core	2.300	2.300
	grit stone	1.5	3.800
	mudstone	6.2	10.0
	gritstone	11.300	21.300
	coal	1.7	23.000
	gritstone	25.00	48.000
	(continue on separate page if necessary)		
	Other comments (e.g. gas encountered, saline water intercepted, etc.) domestic		

FOR OFFICIAL USE ONLY

FILE	CONSENT NO	NGS REF NO:
LIC NO:	PURPOSE:	EA REF NO:
DATE REC:	COPY TO:	ENTERED BY:

APPENDIX E

(i) Conceptual Model

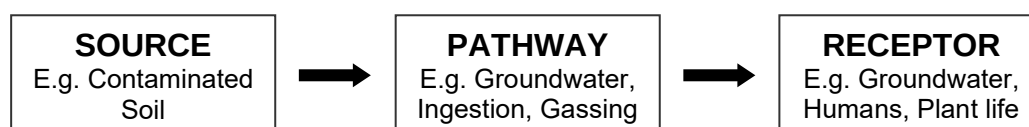
The report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

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 F

(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.

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.

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Appendix F Historic Environment Desk Based Assessment

Hollingworth Lake Visitor Car Park, Littleborough

Historic Environment Desk-Based Assessment

On behalf of **Bloor Homes**

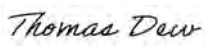
Document Control Sheet

Project Name: Hollingworth Lake Visitor Car Park, Littleborough

Project Ref: 332010570

Report Title: Historic Environment Desk-Based Assessment

Date: 13 December 2023

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For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
1	13/12/2023	First draft for issue to client and stakeholders	TD	DB	IB

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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Executive Summary

Stantec was commissioned by Bloor Homes (the client) to prepare a Historic Environment Desk Based Assessment (HEDBA) to be submitted as part of a planning application for the reconfiguration and extension to an existing car park and associated works located off Rakewood Lane in Smithy Bridge, Littleborough (centred on NGR: SD940152). The Site presently consists of agricultural pastureland.

Whilst there are several listed buildings and conservation areas within 1km of the Site, this assessment has concluded that the Site does not currently contribute towards the significance of any designated heritage asset and the Proposed Development will not alter this.

This assessment has indicated that the Site has an unknown potential to contain prehistoric remains and an unknown potential to contain evidence of Romano-British to medieval activity. Remnants of post-medieval ridge and furrow earthworks may survive within the Site as buried remains, and there is a moderate potential for further medieval to post-medieval agricultural deposits and features to be present. There is some potential that mining infrastructure could be present, although no mine shafts are presently recorded with the Site.

Based upon existing evidence, there is nothing to indicate that there will be any archaeological remains of designated (national) heritage significance present within the Site. However, this potential cannot be entirely dismissed in the absence of further archaeological investigation.

Intrusive groundworks associated with the Proposed Development will adversely impact (damage or remove) any shallow archaeological deposits present within their footprint. The scope and timing (pre- or post-determination) of appropriate evaluative works is to be discussed with the Greater Manchester Archaeological Advisory Service (GMAAS), but may comprise a programme of geophysical survey followed by targeted trial trench evaluation if required. The exact evaluation scope will be subject to agreement with GMAAS (consultation currently being carried out by the Stantec Archaeology and Heritage Team). The results of the evaluation will inform the requirement and scope of archaeological mitigation.

The Proposed Development will result in the loss of a portion of piecemeal enclosure historic landscape which has been altered during the modern period. This Historic Landscape Characterisation type is relatively common within the area, and only a small fraction of this landscape type will be lost as a result of the Scheme.

1 Introduction

1.1 Project Background

- 1.1.1 Stantec was commissioned by Bloor Homes (the client) to prepare a Historic Environment Desk Based Assessment (HEDBA) to be submitted as part of a planning application for the reconfiguration and extension to an existing car park and associated works located off Rakewood Lane in Smithy Bridge, Littleborough (centred on NGR: SD940152).

1.2 Location, Topography and Geology

- 1.2.1 The Site comprises an approximately 2.7 hectare (ha) parcel of land located approximately 1km south of Littleborough, approximately 4km north-east of Rochdale and 18km north-east of Manchester city centre (Figure 1). It is bounded by woodland to the north-west, pasture to the east and south-east, and Hollingworth Lake to the west. The Site presently consists of agricultural pastureland.
- 1.2.2 The topography of the Site is relatively flat, with the Site boundary following Hollingworth Brook along its eastern edge and rising uphill away from the Site to the north-west and south-west. The Site sits between 161m above Ordnance Datum (aOD) and 163m aOD throughout.
- 1.2.3 The bedrock geology of the Site is recorded as a combination of Pennine Lower Coal Measures Formation (BGS 2022), with superficial deposits of Alluvium – Clay throughout the Site (ibid).

1.3 Aims and Objectives

- 1.3.1 The purpose of this historic environment desk-based assessment (HEDBA) is to provide, as far as reasonably possible from existing records and observations, an understanding of the historic environment resource within the Site and the surrounding Study Area in order to formulate:
- an assessment of the potential for heritage assets to survive within the Site;
 - an assessment of the significance of the known or predicted heritage assets considering their archaeological, architectural, artistic and historic interest;
 - an assessment of the impact of the scheme or other land use changes on the significance of heritage assets and their setting; and
 - proposals for any further archaeological investigation and mitigation required.

2 Regulatory and Policy Context

2.1 Introduction

- 2.1.1 There is national legislation, planning policy and guidance relating to the protection of, and development on, or near heritage assets. The Proposed Development will require a planning application and as such will be subject to national and local planning policies. The following section sets out legislation and national and local planning policies in relation to the historic environment which are considered relevant to the Proposed Development.

2.2 Ancient Monuments and Archaeological Areas Act 1979

- 2.2.1 The Ancient Monuments and Archaeological Areas Act (1979), as amended by the National Heritage Act 1983 and National Heritage Act 2002, specifies that an archaeological site or historic building of national importance can be designated as a scheduled monument and registered with the Department of Culture, Media and Sport (DCMS). Under the terms of the

Act any development that could affect a scheduled monument is subject to the granting of Scheduled Monument Consent. Historic England provides advice to DCMS regarding individual applications for Scheduled Monument Consent, and also offers advice on the management of scheduled monuments.

2.3 Planning (Listed Buildings and Conservation Areas) Act 1990

- 2.3.1 Works that affect listed buildings or structures and conservation areas are subject to additional controls administered by the Local Planning Authority (LPA) under the Planning (Listed Buildings and Conservation Areas) Act 1990 (amended by the Enterprise and Regulatory Reform Act 2013). Section 66 states that in considering development which affects a listed building or its setting the LPA shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. In respect to conservation areas Section 72 states that special attention should be paid to the desirability of preserving or enhancing the character or appearance of that area.
- 2.3.2 Under the terms of the Act a listed building may not be demolished, altered or extended in any manner which would affect its character as a building of special architectural or historic interest without Listed Building Consent being granted.
- 2.3.3 There are three grades of listing (in descending order):
- Grade I: Buildings of exceptional interest;
 - Grade II*: Particularly important buildings of more than special interest; and
 - Grade II: Buildings of special interest, warranting every effort to preserve.
- 2.3.4 Historic England is a statutory consultee in relation to works affecting Grade I/II* listed buildings.

2.4 National Planning Policy

- 2.4.1 Section 16 of National Planning Policy Framework (NPPF) as issued in December 2023 sets out the Government's planning policies in relation to the conservation and enhancement of the historic environment.
- 2.4.2 Paragraphs 200 and 201 state:

200. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.

201. Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this into account when considering the impact of a proposal on a heritage asset, to avoid or minimise any conflict between the heritage asset's conservation and any aspect of the proposal.

2.4.3 Paragraphs 205 and 206 state:

205. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.

206. Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of:

a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional;

b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional (non-designated heritage assets of archaeological interest, which are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets).*

2.4.4 Paragraphs 207 and 208 state:

207. Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

a) the nature of the heritage asset prevents all reasonable uses of the site; and

b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and

c) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and

d) the harm or loss is outweighed by the benefit of bringing the site back into use.

208. Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.

2.4.5 Paragraph 209 states:

The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

2.4.6 Paragraph 210 states:

Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.

2.5 Local Planning Policy

- 2.5.1 Policies contained within the Rochdale Core Strategy (adopted October 2016) which are relevant to this assessment are detailed below.

Policy P2: Protecting and enhancing character, landscape and heritage

9.10 Enhancing and protecting the borough's unique character can lead to improvements in quality of life and can also help to boost the visitor economy and inward investment.

1. We will protect and enhance the borough's character, the distinctiveness of its town centres, housing areas and countryside, and the qualities of its landscapes, utilising the considerable potential of these assets in development and regeneration schemes. We will do this by:

a. Requiring new development to integrate successfully with the key natural features of the borough, e.g. river valleys and the Pennine landscape;

b. Requiring new development to take opportunities to protect and open up important views of hills and valleys which are part of the borough's unique character;

c. Restoring the River Roch and other water bodies to their place as key and attractive features of the borough, including opening up waterways where they have been covered, and enhancing their setting, heritage assets and biodiversity potential;

d. Protecting, enhancing and utilising outstanding cultural landscapes, such as the Cheesden Valley area and around Littleborough and Hollingworth Lake; and

e. Conserving and enhancing townscape character.

2. We will protect the borough's heritage by:

a. Conserving, enhancing and promoting key heritage assets, both statutory and non-statutory including consideration of their wider settings. Key heritage assets of the borough include:

i. Four outstanding conservation areas: Central Rochdale, Middleton and Littleborough town centres and Rock Nook / Summit;

ii. Other designated assets such as listed buildings, conservation areas, registered parks and scheduled ancient monuments;

iii. The heritage of the Co-operative movement, the Rochdale Pioneers and the Labour movement;

iv. The Edgar Wood and J. H. Sellers cultural heritage;

v. The heritage of the seventeenth and eighteenth century vernacular tradition; and

vi. The engineering heritage, including mills, canals and railways.

b. Conserving, enhancing and utilising other non-statutory heritage assets of local interest, be they buildings, parks, gardens or archaeological sites, including promoting their sensitive restoration;

c. Using heritage assets positively and intelligently to strengthen identity and image and support the visitor economy, particularly in development and regeneration schemes; and

d. Prioritising the conservation of heritage assets at risk from decay, giving special attention to designated heritage assets in this regard.

3 Methodology

3.1 Standards and Guidance

3.1.1 This assessment has been carried out in accordance with National Planning Policy Framework (NPPF, 2023) and the following good practice and guidance documents:

- Chartered Institute for Archaeologists (CIfA) 'Standards and Guidance for Historic Environment Desk-Based Assessments (as revised 2020);
- Historic England's 'The Setting of Heritage Assets (Historic Environment Good Practice Advice in Planning Note 3 (Second Edition) (2017);
- Historic England's 'Statements of Heritage Significance: Analysing Significance in Heritage Assets (2019); and
- Planning Practice Guidance (PPG) 'Historic Environment', published by the Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2019).

3.2 Assessment of Significance

3.2.1 The National Planning Policy Framework, recommends that in determining planning applications local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The NPPF specifies that the level of detail required should be proportionate to the assets' importance, and no more than is sufficient to understand the potential impacts of the proposal on their significance (NPPF 2023).

3.2.2 The significance of heritage assets is defined in terms of their value to this and future generations because of their heritage interest and derives not only from the physical presence of the heritage asset but also from their setting. Heritage interests are defined in Planning Policy Guidance (2019) as:

- **Archaeological interest:** There will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.
- **Architectural and artistic interest:** These are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically architectural interest is an interest in the art or science of design, construction and craftsmanship and decoration of building and structures of all types. Artistic interest is an interest in other human creative skills for instance sculpture.
- **Historic interest:** An interest in past lives and events (including prehistoric). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation's history but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity.

3.2.3 Historic England's The Setting of Heritage Assets, Good Practice Guidance Advice in Planning Note 3 (2017) provides guidance for managing change within the settings of heritage assets, including archaeological remains and historic buildings, sites, areas and landscapes. It provides a staged approach to taking decisions on setting as well as providing advice on how to assess the contribution of views to the significance of heritage. Elements of a heritage asset's setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

3.3 Data Sources

- 3.3.1 A 1km Study Area around the Site has been used to identify designated and non-designated heritage assets which might be affected by the Proposed Development and to inform the historic and archaeological background of this assessment. The assessment was informed by desk-based research and a site visit carried out in November 2022.
- 3.3.2 The following sources were consulted to inform the presence of known heritage assets within the Study Area:
- National Heritage List for England (NHLE) for designated heritage assets;
 - Greater Manchester Historic Environment Record (GMHER) for archaeological sites, events, findspots, historic buildings and Historic Landscape Character (HLC) data;
 - Groundsure for Ordnance Survey (OS) maps;
 - Lancashire Archives and The Genealogist website for historic mapping;
 - Historic England Archives for aerial photographs;
 - Relevant primary and secondary sources including published and unpublished reports relating to previous archaeological investigations and ground investigation works considered relevant.
- 3.3.3 A search of aerial photographs covering the area by the Historic England Archive in Swindon identified 124 aerial photographs dating between 1925 and 1995. A review of those aerial photographs held at the archive was undertaken as a component of this assessment.

3.4 Assumptions and Limitations

- 3.4.1 Data used to compile this report consists of secondary information derived from a variety of sources. The assumption is made that this data, as well as that derived from other secondary sources, is reasonably accurate.
- 3.4.2 The records held by the GMHER are not a record of all surviving heritage assets, but a record of the discovery of a wide range of archaeological and historical components of the historic environment, usually driven by development in a particular area. The information held within them is not complete and does not preclude the subsequent discovery of further heritage assets that are, at present, unknown, notably buried assets.

4 Historical and Archaeological Baseline

4.1 Introduction

- 4.1.1 The following section identifies the known heritage assets within the Study Area. These were identified from sources listed in section 3. In accordance with Step 1 of Historic England's Historic Environment Good Practice Advice Note 3 (December 2017) this section also identifies heritage assets that have the potential to receive effects to their setting and heritage significance from the Proposed Development within the Site.

4.2 Designated Heritage Assets

- 4.2.1 There are no designated heritage assets located within the Site. Within the 1km Study Area there are 20 designated heritage assets including 16 Grade II listed buildings and four conservation areas.

- 4.2.2 The closest designated heritage asset is the Hollingworth Fold conservation area, located approximately 115m to the south of the Site, which contains the two grade II listed buildings; 3, Bear Hill (NHLE: 1068530) and Hollingworth Fold (NHLE: 1162368). No conservation area appraisal is available for Hollingworth Fold, however it contains nine buildings with a narrow partially cobbled trackway running up the hill away from the lake. An 'Old Quarry' is marked on historic mapping dated to 1892, which may have been a local source of stone for the settlement. The buildings within the conservation area date to the post-medieval period onwards, and the character of the conservation area appears to be that of a small post-medieval to industrial period rural settlement. The Site is visible from parts of the conservation area, however this is not the case for the majority of the asset, as it is well screened by topography and established wooded areas.
- 4.2.3 3, Bear Hill (NHLE: 1068530) is an early 19th century two-storey house constructed in roughly dressed watershot stone with a slate roof. It has a later 19th century brick wing to the rear, but for the most part it retains its historic character. The principal elevation of the building faces south-east, away from the Site, and the north-western facing elevations are well screened from the Site.
- 4.2.4 The Hollingworth Fold (NHLE: 1162368) listed building is dated to 1727 by a datestone on the building, and it is constructed in hammer-dressed watershot stone with a slate roof. It has two storeys, and an additional 20th century outshot has been constructed on the rear of the building. The primary elevation of the building faces south-west, towards Hollingworth Lake, and the asset is well screened to the north-west, towards the Site.
- 4.2.5 The Rakewood Conservation Area is located approximately 680m to the south of the Site. It covers the historic core of the village of Rakewood and extends beyond the Study Area. No conservation area appraisal is available for Rakewood, however it contains 18 buildings in total which date from the post-medieval to modern periods, including some industrial buildings which are currently in a poor state of repair. There are two listed buildings in Rakewood which fall within the Study Area; Freshwater Cottage (NHLE: 1162303) and Brook Cottage End View Cottage (NHLE: 1356263). The closest of these assets (Freshwater Cottage) is located approximately 780m to the south of the Site, and there is no clear intervisibility between the Site and this asset due to the surrounding topography of the area and no known historic association.
- 4.2.6 The Whittaker conservation area is located approximately 515m to the north-east of the Site and contains three listed buildings; 1 and 3, Whittaker Fold (NHLE 1366282); the barn immediately north of No's 1 and 3 (NHLE: 1068528); and the farmhouse west of Whittaker Farmhouse (NHLE: 1309627). No conservation area appraisal is available for Whittaker, however it contains nine buildings with the oldest dating to the post-medieval period. The settlement contains numerous freshwater springs and is home to the Whittaker Golf Club and course, which extends north of the settlement. The conservation area and its contents are well screened to the south by Whittaker Wood, there is no intervisibility between these assets and the Site.
- 4.2.7 The Littleborough Town Centre Conservation Area is located approximately 920m to the north of the Site and extends along Hare Hill Road and beyond the 1km Study Area. The conservation area covers the historic core of Littleborough and contains four Grade II listed buildings within the Study Area; Littleborough War Memorial (NHLE: 1436965); a Railway Viaduct (NHLE: 1068509); 6, Church Street (NHLE: 1162186); and the Roundhouse, Wheatsheaf Buildings (NHLE: 1068526). These assets date from the early 19th century onwards, and share no intervisibility with the Site due to local topography and no known historic association.
- 4.2.8 Other designated assets within the Study Area include four grade II listed buildings on the southern outskirts of Littleborough: The Old Duke (NHLE: 1068508); Hillview (NHLE: 1068542); 1, Ealees (NHLE: 1162194); and Ealees Bridge (NHLE: 1309668). These assets are located approximately 870m to the north of the Site, and share no intervisibility with the Site due to local topography and not share any historic association. In addition to these, a

barn, shippon and workshop adjoining Skye House (NHLE: 1366280) is located approximately 750m to the south-east of the Site, again there is no intervisibility or known historic association between the Site and this asset.

- 4.2.9 The Site is located in a low point within the surrounding area and due to this it shares limited intervisibility with assets throughout the Study Area. There are also no apparent historic associations between the Site and any of the nearby designated assets. The Proposed Development will therefore cause no impacts to the setting of any designated heritage assets and they have been scoped out of further assessment.

4.3 Previous Archaeological Investigations

- 4.3.1 No previous intrusive archaeological investigations are recorded to have been conducted within the Site or Study Area. The Site fell partially within a large-scale heritage appraisal of land between Littleborough and Rochdale (HER: EGM4845) which was undertaken in advance of a proposed flood management scheme. This assessment comprised documentary research, a walkover survey and a visual inspection, but the Site was not specifically mentioned within this appraisal.

4.4 Prehistoric Period (500,000 BC – AD 43)

Early Prehistoric Period (500,000 – 4,000 BC)

- 4.4.1 No Palaeolithic remains are recorded within the Study Area. The earliest evidence within the Study Area comprises Mesolithic flints (HER: 290.1.0) recovered from the area of Hollingworth Lake (a 19th-century reservoir) approximately 100m south-west of the Site. Significant environmental change took place during the Mesolithic period (10,000 BC - 4,000 BC) with open tundra-like habitats replaced by forested regions. During the later phases of the Mesolithic period much of Rochdale district would have been covered by deciduous forest, although from around 5,000 BC this began to decline and blanket peat started to develop (GMULC 2010). As a hunter-gather society resources would have been exploited seasonally during this period, with areas of occupation likely varying between lower altitudes in the winter to give maximum protection from weather conditions, with warmer weather and more abundant supplies permitting the occupation of higher altitudes and exposed hillsides (*ibid*).

Late Prehistoric Period (4,000 BC – AD 43)

- 4.4.2 Evidence of Neolithic activity recorded within the Study Area is also confined to residual finds, comprising flint implements (HER: 719.1.0) recovered from the area of Hollingworth Lake, approximately 450m south-west of the Site, and a late Neolithic polished stone axe-head (HER: 718.1.0) found in Hollingworth Fold, approximately 330m to the south-east of the Site. In general, the Neolithic period marks the development of more permanent settlements following the introduction of agriculture however, there is an absence of monuments and evidence of settlement activity within Rochdale district (GMULC 2010). There are no Bronze Age remains recorded within the Study Area, with evidence within the wider Rochdale district comprising a single occupation site and a number of barrows, as well as residual artefacts (*ibid*).
- 4.4.3 There are no Iron Age remains recorded within the Study Area, and this period within Rochdale district is represented by only a single find. It is suggested that much of the lowland evidence dating to this period has been destroyed by post-medieval and modern urban development, although upland area and less developed valleys could still reveal evidence of settlement (*ibid*). During the Iron Age Rochdale was controlled by the Brigantes, a large tribal group which controlled a large part of northern England up until AD 70, by which time it was under direct Roman control.

4.5 Romano-British Period (AD 43 – 410)

- 4.5.1 Evidence of Romano-British activity within the Study Area is represented by finds rather than identified archaeological features. A hoard of 65 silver coins (HER: 8679.1.0) and a Bronze

bracelet (HER: 8863.1.0) were identified by metal detecting around Hollingworth Brook, approximately 290m and 390m north-east of the Site respectively. It is theorised that the possible route of a Roman road, as indicated by the distribution of coin hoards throughout the area, follows the high ground to the north of the River Roch to the west of Littleborough (GMULC 2010).

4.6 Medieval Period (AD 410 – 1540)

Early Medieval (AD 410 – 1065)

- 4.6.1 The Site is located within the ancient township of Butterworth within Rochdale parish. The etymology of Butterworth is indicative of Saxon origin, derived from the Old English *butere* meaning butter and *worð* meaning an enclosure. The place name of Littleborough, is also derived from the Old English *lytel* and *burh* meaning 'little fort or stronghold' (Mills 2011, 300).
- 4.6.2 Despite the likely early medieval origins of these areas of settlement, there is an absence of archaeological remains dating to this period recorded within the Study Area.

Later Medieval (AD 1066 – 1540)

- 4.6.3 The Hollingworth Village Core (HER: 5243.1.0) is located approximately 365m south-east of the Site, and falls within the Hollingworth Fold Conservation Area. While most of the surviving structures in the village date to the post-medieval period onwards, the origins of the village are thought to date to the medieval period. Hollingworth translates to 'the holy enclosure' in old English (Mills 1976), implying that the origins of the settlement name at least date back to this period.
- 4.6.4 Cleggswood (HER: 2398.1.0) became the seat of the Belfield family around 1500AD, with the site of their original farmhouse thought to be located approximately 275m to the north-west of the Site and survived at least into the post-medieval period, with three buildings marked on the 1770s Yates map (Yates 1786). This house has since given way to modern buildings, so is of no remaining heritage concern.
- 4.6.5 During the later medieval period Littleborough, which was located within the neighbouring township of Hundersfield, comprised a hamlet focused upon the junction of two ancient routes over the Pennines that converged to cross the River Roch. The Grade II* listed Stubley Hall (NHLE: 1162360), located approximately 1.4km to the north-west of the Site, is also of 15th-century origin.

4.7 Post-Medieval Period (AD 1540 – 1901)

- 4.7.1 Little change is noticeable in the surrounding landscape between the late medieval and the post-medieval periods. Historic maps dated to 1770s (Yates 1786, 96) show the settlement of Littleborough as well established during this time, and later historic maps show the surroundings in greater detail. Throughout the post-medieval period the Site comprised agricultural fields, with Hollingworth Brook flowing in a similar location to the present day.
- 4.7.2 Butterworth tithe map dated to 1846 show a strip of woodland separating the Site from Hollingworth Lake (HER: 730.1.0). This is named as Hollingworth Bank on later historic OS mapping dated to 1888 and it survived into the present day, sloping down from Rakewood Road and ending at the south-western boundary of the Site, although the bank is now devoid of trees.
- 4.7.3 The 1846 tithe map also names Lower Hollingworth on the western edge of Hollingworth, and shows a single building located roughly in the location of the Grade II listed 3, Bear Hill. This building is named as Bear Hill House on historic OS mapping dated to 1888 and is likely the previously discussed designated asset.

- 4.7.4 In 1794 an Act of Parliament sanctioned the construction of the Rochdale Canal, which passes the Site approximately 850m to the north-west. The canal extends for 51km across the Pennine between Manchester and Sowerbridge, passing directly north of the Site. The canal was opened in sections however, it formally opened in 1804. Hollingworth Lake (HER: 730.1.0), directly south-west of the Site, was created as feeder source for the canal and was completed in 1800. The water from the reservoir was supplied via steam power from a steam engine (HER: 290.2.0) and fed into a channel which ran for four miles to supply water to at higher levels. The site of this pumping engine is located on the southern side of Hollingworth and the extant remains are now in use as a private garden feature.
- 4.7.5 The reservoir became a popular recreational landmark in the Victorian period, and was often used for rowing and boating. The only recreational ground marked on historic mapping is a cricket ground with pavilion located approximately 100m to the north-east of the Site shown on 1888 OS mapping. This site is no longer in use for recreational purposes, and no extant remains of the pavilion are visible.
- 4.7.6 A secondary smaller waterway was located to the north of Hollingworth, flowing towards the approximate location of Bear Hill House from the north-east, around Hollingworth Hill. This is marked as a canal drain on 1888 OS mapping and would have been used to remove overflow from Rochdale canal to the north.
- 4.7.7 A colliery (HER: 8848.1.0) was located approximately 100m to the north-west of the Site from 1818 until 1940. This is not marked on any historic mapping, although a number of 'old shafts' are marked in the area around the Site. The closest of these was located approximately 40m to the north-east of the Site, and is now capped off. The depth of these shafts is recorded to have reached up to approximately 115m. No mine entry points are recorded within the Site, however the Site does fall partially within a development high-risk area on its northern end, while also being a location where probable shallow coal mining occurred (Coal Authority 2021).
- 4.7.8 The site of a hydraulic ram (HER: 8851.1.0) is located approximately 390m to the north-east of the Site on Hollingworth Brook. This was used to supply water to fields up the hill from the waterway, but it is undetermined at what point this fell out of use. All that survives of built structures is roughly three courses of stone, with pipes running from the structure and two small metal tanks located in the south-west section of the remains.
- 4.7.9 LiDAR data available through the Environment Agency shows a small area of possible quarrying in its northern field, and a faint indication of parallel lines running lengthways along the fields, from north-east to south-west, may indicate previous historical farming practices. These can also be seen to the south-east of the Site, towards Hollingworth Village, and reinforce the image presented by historic mapping of a rural, agricultural setting.
- 4.7.10 Littleborough witnessed significant linear growth, primarily to the north of the River Roch, during the 19th century, influenced initially by the construction of the Rochdale Canal and later by the Manchester and Leeds railway line, which opened in 1841 and passes the Site approximately 950m to the north-west. With development focused to the north of the River, the area around the Site saw little urbanisation and the only significant industrial changes were the creation of the Hollingworth Reservoir and the influx of coal mining into the surrounding area.

4.8 Modern (1901 – Present)

- 4.8.1 There are no assets dating to the modern period located within the Study Area recorded within HER data.
- 4.8.2 20th-century OS maps show that the land directly west of the Site was used for shallow coal mining. This began between 1928 and 1938, and implies that the mining may not have extended into the Site before the closure of the colliery in 1940. LiDAR data shows the extent of historic quarrying immediately west of the Site.

- 4.8.3 The only additional notable change is the construction of a weir at the point at which Hollingworth Brook flows from the reservoir, however this may have existed prior to the 20th century and was simply not marked on historic mapping.
- 4.8.4 During 1914, the Ealles Valley at Hollingworth Lake was used as a temporary training camp for the Manchester Territorial Regiments. Limited information is available regarding this, but contemporary photos show a large camp including paddocks for horses located directly adjacent to Hollingworth Lake. One photo in particular shows a large group of civilians stood atop what appears to be Hollingworth Bank, with Hollingworth in the background. This photo shows tents placed at the foot of the bank, from where they will have extended to the north-east. This demonstrates that the camp was located within and extended beyond the Site.
- 4.8.5 As a side note, some of the lamp posts shown in this image and outside of the Site appear to survive today.
- 4.8.6 The Rochdale Canal was in decline by the 1920s and in 1923 Hollingworth Lake was sold to local authorities for use as a public water supply. Most of the length of the canal was closed in 1952; however, a programme of restoration throughout the later 20th-century resulted in the canal being reopened for navigation along its entire length in 2002.

4.9 Previous Disturbance and Survival

- 4.9.1 The northern part of the Site is an area of potential shallow coal mining. This will likely have removed any archaeological deposits within its footprint due to its shallow nature, but if any deeper mining occurred accessed from shafts beyond the Site then it will not have impacted the earlier archaeological resource (having taken place below the archaeological horizon), and it should also be noted that any infrastructure relating to the mining industry would themselves be of archaeological interest.
- 4.9.2 It does not appear from a review of photographs and other available sources that any practice trenches were excavated as part of the activities undertaken by the armed forces in 1914, and there is no evidence to suggest that this occurred within the Site. It is also unlikely that any latrines were excavated within the Site as part of the camp, as these will not have been installed within close proximity to camp structures for sanitary reasons. The footprint of disturbance caused by the WWI camp will therefore have been relatively minor, with the majority of intrusive works comprising the hammering of tent pegs into the topsoil, which is highly unlikely to have damaged any previously undisturbed features.
- 4.9.3 The remainder of the Site comprises historically undeveloped pastureland. There may be some localised disturbances from agricultural activities (field drains, furrows etc.) and the surrounding industrial activities (trackways etc.) however, the archaeological resource is anticipated to remain largely intact across these areas of the Site.

5 Statement of Significance

5.1 Introduction

- 5.1.1 In accordance with Step 2 of Historic England's The Setting of Heritage Assets (2017) the following section assesses the heritage significance of the known heritage assets as identified in the historic baseline that have the potential to receive effects from development within the Site. The section assesses whether, and to what degree, the Site contributes towards the setting and heritage significance of these heritage assets. The archaeological potential of the Site is then summarised based on the historic environment baseline and known previous impacts. As the designated assets within the Study Area have been previously scoped out, they will not be discussed further here.

5.2 Archaeological Remains

- 5.2.1 Prehistoric remains recorded within the Study Area are confined to residual finds of Mesolithic and Neolithic date, indicative of limited background activity during these periods. This said, the site sits on alluvium, which may contain well preserved organic remains and geoenvironmental or palaeoenvironmental remains which can provide us with information about the landscape and environmental conditions of the past. The absence of further prehistoric remains recorded within the Study Area may reflect the limited archaeological investigation rather than be an accurate representation of archaeological potential during these periods. As such, there is an unknown potential for remains of this period to be present within the Site.
- 5.2.2 Evidence of Romano-British activity also comprises solely of finds, but this may also be due to a lack of archaeological investigation rather than an accurate representation of the archaeology within the area. Therefore, it is considered that there is an unknown potential for Romano-British remains. Any previously undiscovered remains will likely comprise residual finds and possible evidence of agricultural activity.
- 5.2.3 During the medieval period the Site is likely to have comprised agricultural land. Therefore, it is considered that there is a low potential for significant medieval remains (which if present are most likely to comprise agricultural remains and residual finds).
- 5.2.4 The Site appears to have remained largely in agricultural use during the post-medieval period, although mining may have potentially taken place within the Site during the 19th-century, or potentially earlier. Whilst there are no mine shafts recorded with the Site, there is some potential for associated infrastructure to be present. There is a moderate potential for archaeological remains to be present within the Site dating to this period, and it is likely that they would take the form of residual agricultural activity such as ridge and furrow, or shallow coal mining practices particularly in the north of the Site.
- 5.2.5 The main notable use of the Site during the modern period is its use as a temporary training camp during 1914. This likely did not leave a significant archaeological footprint within the Site, as the area was filled with tents which leave behind a minimal intrusive footprint in the archaeological record, however the Site does hold the potential to contain stray finds associated with the armed forces and its members that used the camp. There is significant communal interest in the First World War and the stories that can be told, and while ephemeral, any potential remains may be of local interest. There is therefore a moderate potential for finds dating to the modern period, particularly First World War, within the Site.
- 5.2.6 Based upon existing evidence, there is nothing to indicate that there will be any remains of designable (national) heritage significance present within the Site. However, this potential cannot be entirely dismissed in the absence of further archaeological investigation.

5.3 Historic Landscape

- 5.3.1 The HLC type of the Site is recorded as piecemeal enclosure, characterised by medium sized semi-regular fields with straight boundaries. This field system was present from the post-medieval period, although it is noted that slight boundary reorganisation has occurred prior to 1999. This HLC type is of limited significance and is common throughout the region.

6 Statement of Effect

6.1 Introduction

- 6.1.1 In accordance with Step 3 of Historic England's The Setting of Heritage Assets (2017) this section assesses the effects of the Proposed Development upon designated and non-designated heritage assets and their settings. It also assesses the potential impact that the Proposed Development may have upon archaeological remains where present and sets out an approach to mitigate these impacts.

6.2 Proposed Development

- 6.2.1 The Proposed Development is for the reconfiguration and extension of an existing car park and associated works. It will cater for increased visitors resulting from a new residential developments in the surrounding area including at Land North of Smithy Bridge. The proposal aims to integrate the new car park without compromising the sensitivity of the surrounding landscapes and habitats within the area.
- 6.2.2 The construction of the Proposed Development will involve intrusive groundworks including (but not confined to):
- Grading of the Site;
 - Excavation of service trenches for utilities such as electrical supplies for lighting and EV charging spaces;
 - Excavation for the proposed access road to the car park and any other associated infrastructure;
 - Installation of a car park surface;
 - Other planting and landscaping;
- 6.2.3 The proposals for the Scheme use natural and sustainable materials in their design in order to mitigate the landscape impacts potentially caused by the Scheme. This includes an extensive suite of planting in order to screen the car park from the surroundings and create a gentle blending of the landscape rather than the stark contrast which could potentially be caused.
- 6.2.4 No new above-ground structures are to be constructed as a part of the Scheme.

6.3 Scale and Significance of Impact

Built Heritage

- 6.3.1 There will be no direct impacts or impacts to the setting of built heritage assets as a result of the Scheme.

Archaeological Remains and Historic Landscape

- 6.3.2 Intrusive groundworks will adversely impact (damage or remove) any shallow archaeological deposits present within their footprint. Due to the shallow nature of most of the intrusive works, impacts to buried remains will be confined to those located at a shallow depth in the majority of the Site, while remains buried at greater depths may be preserved in-situ.
- 6.3.3 The Proposed Development will result in the loss of a portion of piecemeal enclosure historic landscape which has been altered during the modern period. This HLC type is relatively common within the area, and only a small fraction of this landscape type will be lost as a result of the Scheme.

7 Consultation and Outline Evaluation and Mitigation Strategy

- 7.1.1 Consultation with GMAAS and the Rochdale Conservation Officer is currently being undertaken by the Stantec Archaeology and Heritage Team to establish the requirement for and scope of further works.

- 7.1.2 Appropriate evaluative works are to be determined by GMAAS and the local Conservation Officer.
- 7.1.3 The results of any further required evaluative works will establish the archaeological potential of the Site and the significance of any archaeological remains present and inform the requirement and scope of archaeological mitigation.
- 7.1.4 A scheme of fieldwalking maybe warranted due to the First World War camp located on the Site; however, this may be an opportunity to engage local community groups or interested parties as an engagement exercise.

8 Conclusion

- 8.1.1 This assessment has identified that the Site does not contain any known significant archaeological remains, but that it does hold potential to contain further, as yet unknown, archaeological remains. Based upon existing evidence, there is nothing to indicate that there will be any archaeological remains of designatable (national) heritage significance present within the Site. However, this potential cannot be entirely dismissed in the absence of further archaeological investigation.
- 8.1.2 Intrusive groundworks associated with the Proposed Development will adversely impact (damage or remove) any shallow archaeological deposits present within their footprint.
- 8.1.3 Appropriate evaluative works are to be determined by GMAAS. The exact scope and timing of any potential evaluation will be subject to agreement with GMAAS (consultation currently being carried out by the Stantec Archaeology and Heritage Team). The results of any potential evaluation will inform the requirements and scope of archaeological mitigation.

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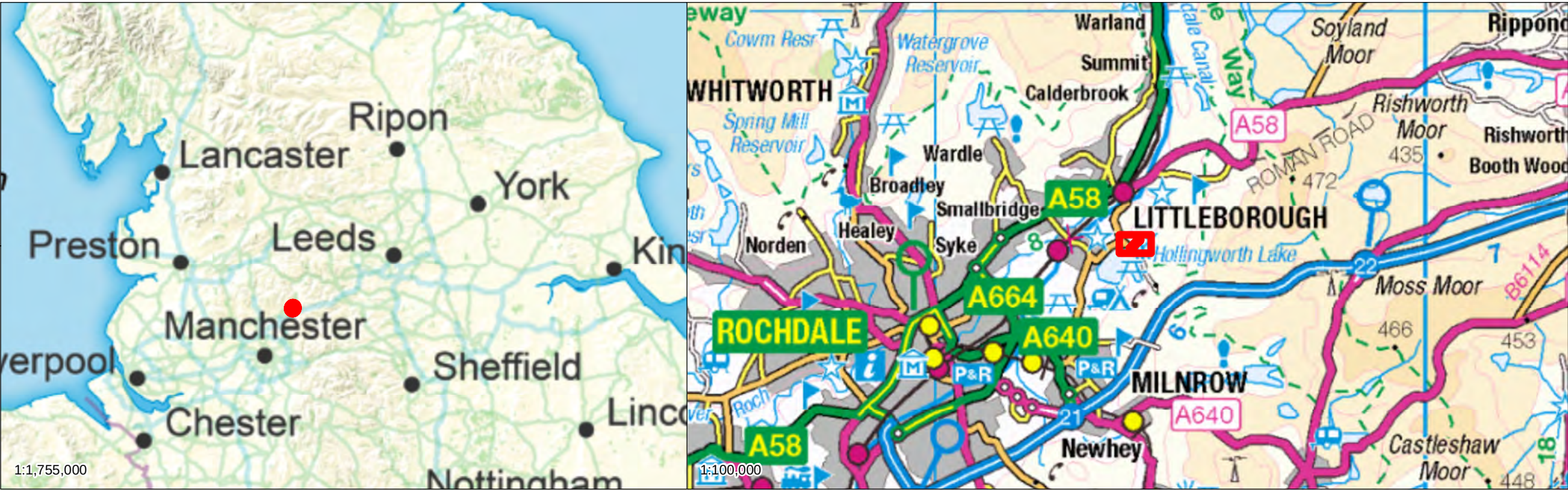
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10 Appendix

A – Figures

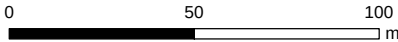


Legend
Site



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Hollingworth Lake Visitor Car Park,
Littleborough
Site Location



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Figure: 01	Rev A

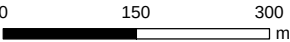


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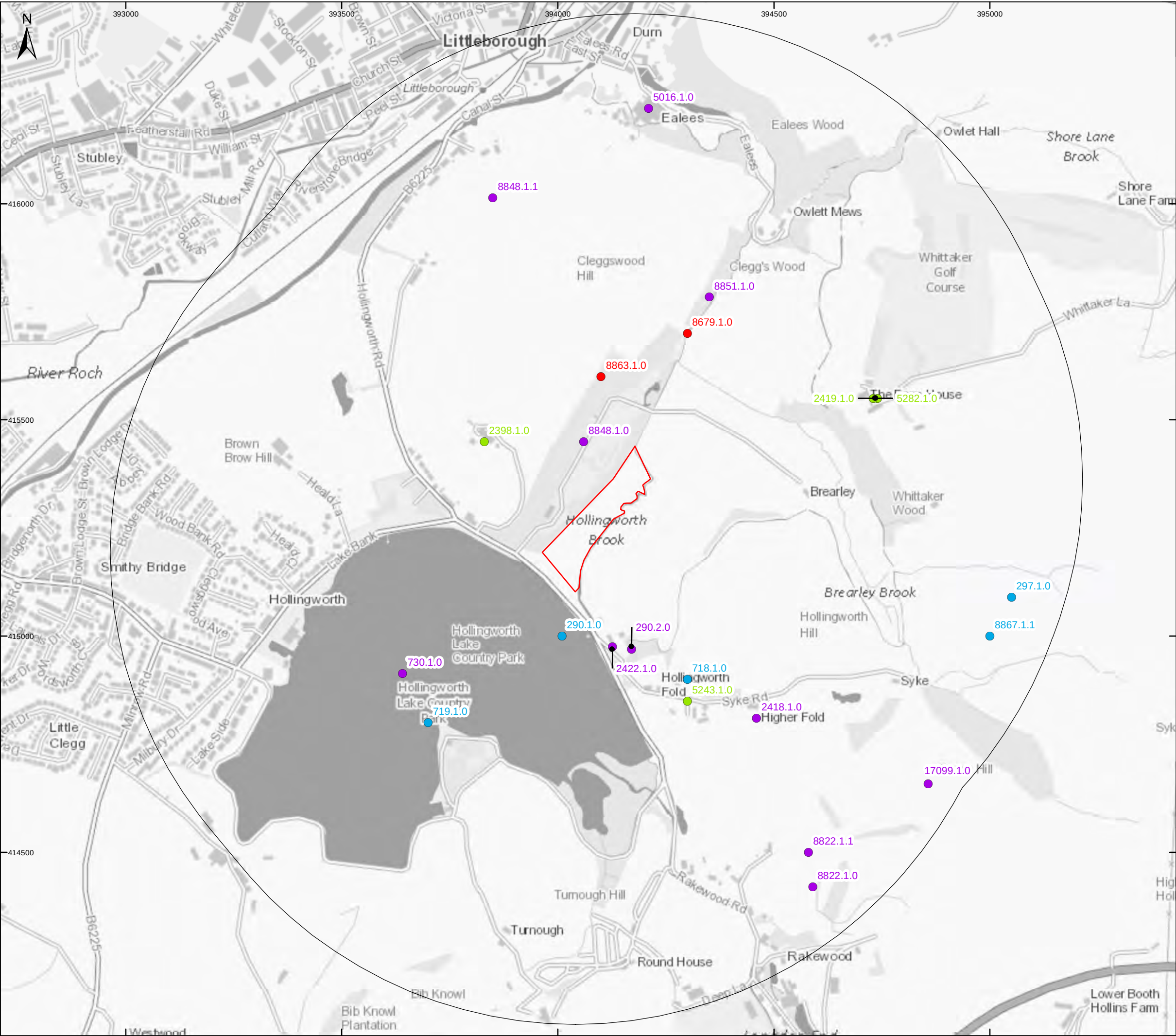
- Site
- 1km Study Area
- Designated Heritage Assets
 - Grade II Listed Building
 - Conservation Area

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Hollingworth Lake Visitor Car Park,
Littleborough
Designated Heritage Assets



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Figure: 02	Rev A



Legend

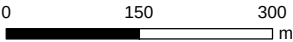
- Site
- 1km Study Area

Non-Designated Heritage Assets

- Prehistoric
- Roman
- Medieval
- Post-Medieval

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Hollingworth Lake Visitor Car Park,
Littleborough
Designated Heritage Assets



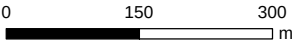
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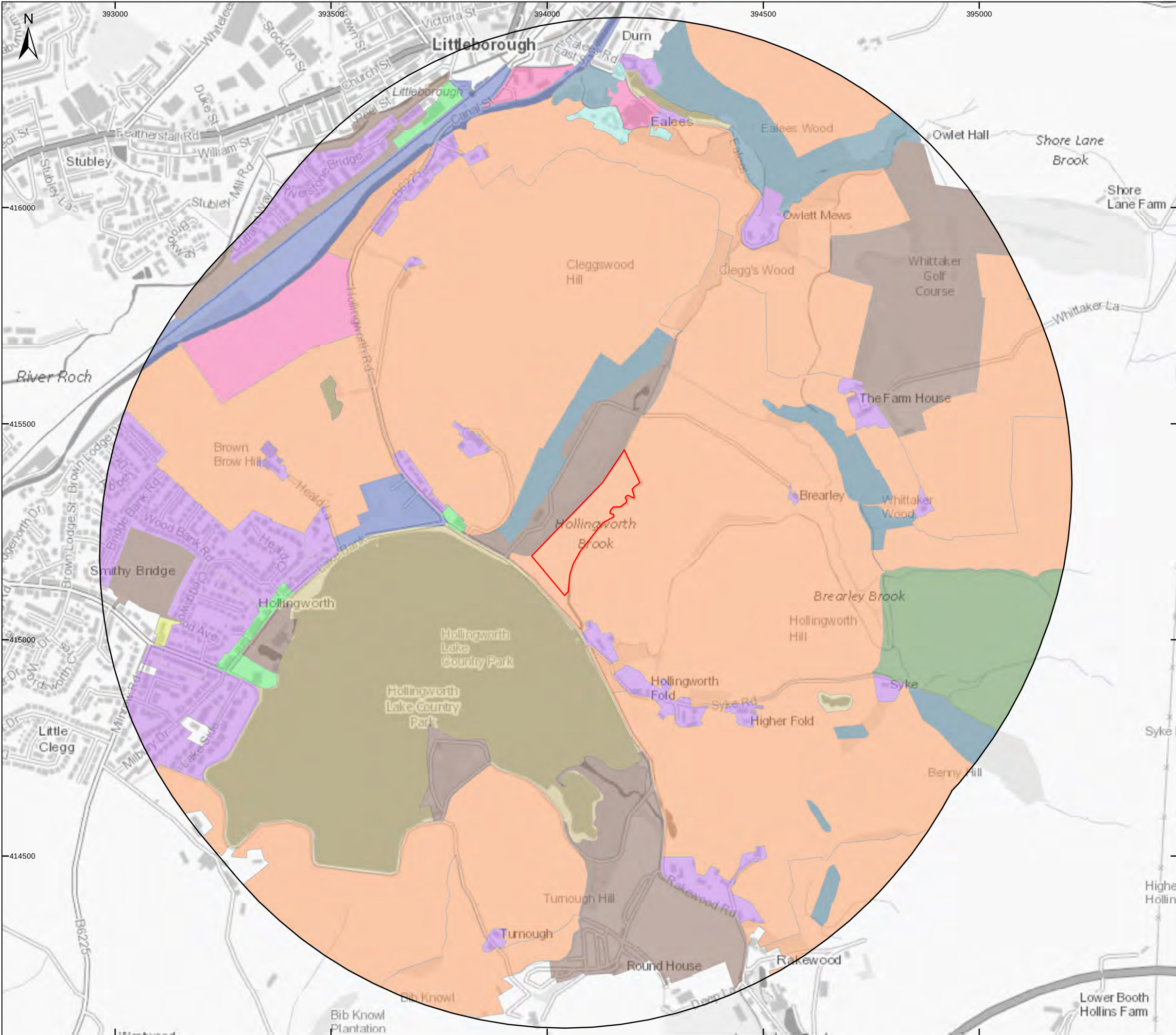
- Legend**
- Site
 - 1km Study Area
 - Previous Archaeological Investigations**
 - Heritage Statement
 - Survey

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**Hollingworth Lake Visitor Car Park,
Littleborough**
Previous Archaeological Investigations



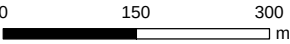
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Figure: 04	Rev A



- Legend**
- Site
 - 1km Study Area
 - Historic Landscape Characterisation**
 - Communications
 - Commercial
 - Enclosed Land
 - Horticulture
 - Industrial
 - Institutional
 - Unenclosed Land
 - Ornamental, Parkland and Recreational
 - Residential
 - Water Bodies
 - Woodland

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**Hollingworth Lake Visitor Car Park,
Littleborough**
Historic Landscape Characterisation



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Drawn: EC	Checked: TD
Figure: 05	Rev A

B – Gazetteer

GMHER Ref.	NHLE No.	Name	Type	Period	Easting	Northing
<i>Designated Heritage Assets</i>						
–	1068508	The Old Duke	Grade II listed building	Post-Medieval	394236	416290
–	1068509	Railway Viaduct	Grade II listed building	Post-Medieval	393938	416356
–	1068518	Church of the Holy Trinity	Grade II listed building	Post-Medieval	393888	416416
–	1068520	18, 20 and 22, New Road (See details for further address information)	Grade II listed building	Post-Medieval	392640	416040
–	1068522	Rochdale Canal Lodge Bridge	Grade II listed building	Post-Medieval	392886	415433
–	1068526	The Roundhouse, Wheatsheaf Buildings	Grade II listed building	Post-Medieval	393760	416348
–	1068530	3, Bear Hill	Grade II listed building	Post-Medieval	394124	414985
–	1068542	Hillview	Grade II listed building	Post-Medieval	394222	416317
–	1162186	6, Church Street (See details for further address information)	Grade II listed building	Post-Medieval	393926	416395
–	1162194	1, Eeles	Grade II listed building	Post-Medieval	394177	416344
–	1162288	Littleborough Coach House Heritage Centre	Grade II listed building	Post-Medieval	393799	416415
–	1162360	Stubley Old Hall	Grade II* listed building	Medieval	392783	416057
–	1162368	Hollingworth Fold	Grade II listed building	Post-Medieval	394279	414887
–	1309668	Ealees Bridge	Grade II listed building	Post-Medieval	394108	416366
–	1309675	2 and 3, Wrigley Place (See details for further address information)	Grade II listed building	Post-Medieval	392838	415136
–	1309691	Dearnely Old Hall	Grade II* listed building	Post-Medieval	392212	415819
–	1366279	Bents Farmhouse and Adjoining Barn	Grade II listed building	Post-Medieval	392703	416218
–	1436965	Littleborough War Memorial	Grade II listed building	Modern	393810	416334
<i>Non-Designated Heritage Assets</i>						
11042.1.0	–	Works (site of)	Monument	Modern	393397	416073
11063.1.0	–	Littleborough Bridge	Monument	Post-Medieval	393931	416373
11064.1.0	–	House (site of)	Monument	Post-Medieval	392453	415614

11065.1.0	—	Yea Bridge	Monument	Post-Medieval	392477	415377
16861.1.0	—	Field Boundary (line of), east of New Street	Monument	Post-Medieval	392745	415912
16862.1.0	—	Field Boundary (line of), west of Stubley Lane	Monument	Post-Medieval	392864	415801
16863.1.0	—	Dearnley Mill (later Dearnley Bleach and Dye Works) (site of)	Monument	Post-Medieval	392591	415938
16863.1.1	—	Pump House associated with Dearnley Bleach and Dye Works (site of)	Monument	Post-Medieval	392682	415987
17199.1.0	—	Dearnley Brickworks (unconfirmed site of)	Monument	Post-Medieval	392465	416142
17200.1.0	—	Stubley Brickworks (site of)	Monument	Post-Medieval	392619	416221
17327.1.0	—	Industrial Building at Brown Street	Building	Post-Medieval	393523	416421
2324.1.0	—	Turnough (site of house)	Monument	Medieval to Post-Medieval	393880	414310
2326.1.0	—	Littleborough School (site of)	Monument	Post-Medieval	394065	416386
2364.2.0	—	Old Chapel, Littleborough (site of)	Monument	Medieval	393863	416358
2367.1.0	—	Smithy Field	Building	Post-Medieval	393311	416535
2398.1.0	—	Cleggswood	Monument	Medieval	393830	415450
2399.1.0	—	Stubley Mill (Woollen) (site of)	Monument	Post-Medieval	393026	415808
2418.1.0	—	Higher Fold	Building	Post-Medieval	394460	414810
2422.1.0	—	Lower Hollingworth (Farm)	Building	Post-Medieval	394126	414975
2424.1.0	—	Brown Lodge Farm	Building	Post-Medieval	392855	415359
2470.1.0	—	Stubley Water Corn Mill (site of)	Monument	Medieval to Post-Medieval	393000	415800
2484.1.0	—	Round House (site of)	Monument	Post-Medieval	393500	414500
290.1.0	—	Hollingworth Lake Flint Finds	Findspot	Mesolithic	394010	415000
290.2.0	—	Hollingworth Reservoir Pumping Engine (site of)	Monument	Post-Medieval	394171	414970
5016.1.0	—	Ealees Mill	Building	Post-Medieval	394210	416220
5020.1.0	—	Hare Hill Mill (Proofings Mill)	Building	Post-Medieval	393620	416610
5022.1.0	—	Lyon's Mills	Building	Post-Medieval	393890	416530
5024.1.0	—	Whitelees Mills (site of)	Monument	Post-Medieval	393246	416480

5025.1.0	—	Python Mill (Tyne Mill) (site of)	Monument	Modern	393369	416340
5026.1.0	—	Albion Mill (site of)	Monument	Post-Medieval	393129	416093
5027.1.0	—	Featherstall Mill (and Sun Mill)	Building	Post-Medieval	392945	416227
5028.1.0	—	Drydock Mill (Community Workshop) (site of)	Monument	Post-Medieval	392668	416067
5244.1.0	—	Calliards Mill (Lower Mill)	Building	Post-Medieval	392476	415556
5245.1.0	—	Trafalgar Mill (site of)	Monument	Post-Medieval	392358	415294
718.1.0	—	Axe (findspot)	Findspot	Neolithic	394300	414900
719.1.0	—	Flint Implements (findspot)	Findspot	Neolithic	393700	414800
724.1.0	—	Littleborough Railway Station	Building	Post-Medieval	393841	416284
727.1.0	—	Little Clegg Hall (site of)	Monument	Post-Medieval	392663	414947
730.1.0	—	Hollingworth Lake	Monument	Post-Medieval	393641	414913
733.1.0	—	Urn with Roman Coins and Cup (findspot)	Findspot	Romano-British	392820	416000
8679.1.0	—	Littleborough Roman Coin Hoard (findspot)	Findspot	Romano-British	394300	415700
8823.1.0	—	House, now shop (former Co-op premises)	Building	Post-Medieval	393621	416344
8825.1.0	—	Littleborough Central School (site of)	Monument	Modern	393728	416606
8832.1.0	—	Colliery, Dearnley (site of)	Monument	Post-Medieval	392300	415700
8837.1.0	—	Sanitary Works, Smithy Bridge (site of)	Monument	Post-Medieval	392694	415116
8841.1.0	—	Colliery, Smallbridge (site of)	Monument	Post-Medieval	392700	415530
8848.1.0	—	Colliery at Cleggswood (site of)	Monument	Post-Medieval	394060	415450
8848.1.1	—	Cleggswood Colliery (site of)	Monument	Post-Medieval	393850	416014
8851.1.0	—	Hydraulic Ram, Cleggs Wood	Monument	Post-Medieval	394350	415784
8863.1.0	—	Bracelet (bronze), Cleggswood (findspot)	Findspot	Romano-British	394100	415600
<i>Archaeological Investigations</i>						
EGM5187	—	Hare Hill Mill	Excavation	N/A	393596	416610
EGM5259	—	Dearnley Old Hall	Evaluation	N/A	392204	415805
EGM4954	—	Hare Hill Mill	Watching brief	N/A	393598	416597



Design with
community
in mind

