Fortem Consultants

Geo-Environmental Desk Study

&

Coal Mining Risk Assessment

Report

For

Burncross Road

Chapeltown

November 2023

REPORT NO: 23FRT016/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

DOCUMENT ISSUE RECORD

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0	November 2023	Draft for issue and comments	HR
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BETTS GEO
CONSULTING ENGINEERS

CONTENTS

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 on land to the rear of 241 Burncross Road, Sheffield, South Yorkshire, S35 1RZ. The coordinates on National Grid are 434693, 396161. The proposed site is approximately 0.83 hectares (Ha) in total and lies at an elevation of approximately 113m AOD.

Proposed Development

The proposed development is residential related to planning application (23/02892/OUT) to Sheffield City Council for the demolition of a garage and the erection of 14 dwellings

Site Description

The site has a brick bungalow with a frontage onto Burncross Road with a brick garage, driveway and low wall with a hedge. Access to the back of the plot is via a grassed lane way to the East of the house plot. The land rises from 103m in the North to 117m in the South, with a depression to the rear of the house where there is evidence of the course of the stream which is now culverted underground.

The site is mainly overgrown with brambles and immature trees with a couple of larger trees. There is a rough grassed area behind the residences which back on to the North of the site and two sheds (possibly with asbestos roofs)

To the East of the site are well kept allotments separated from the site by a metal fence. Two storey residences boarder the South and West of the site, with boundary wooden garden fences (some with gates to access the site). To the Northwest is a doctor's surgery, car park with a metal paling fence. A concrete base / cover was noted on the West of the site that could have been a shed base or drain cover.

As the site was covered by thick vegetation it was not possible to see fully if there was any evidence of historical coal mining on site.

Site History

The earliest available map is the 1855 1:10,560 which shows the site as fields South of Burncross Road with a stream flowing East. By 1892 there are a number of terraces (Howsley Villas) along Burncross Road and a school and cemetery opposite with a non-conformist mortuary chapel. There is also a hospital at Green Head, 480m to the East. The 1903 1:10,500 OS map shows a shaft is marked107m Nothwest of the site near the cemetery.

The 1938 1:10,560 OS Map shows the site to have a detached residence on the North of it, with an access from Burncross Road. By 1948 the mapping displays an access track from Burncross Road to a small shed on the West of the site behind the residence and allotment gardens to the West of the site. The site remains the same until 1956 when a nursery is labelled on the northern half of the site with a building in the middle of the site and is has been divided into smaller lots. Between 1956 and 1963 Residential areas have been built surrounding the site and another building has been added in the centre of the site and one beside the access track. The 1974 1:2,500 Map shows that there are 5 buildings on site. The main house and smaller constructions towards the middle of the site. By the 1980's the area is primarily residential with the site remaining the same. From the 1980's site has remained the same other than the most southerly building appears to have been dismantled and the southern two thirds of the site is overgrown with trees and shrubs.

Published Geology

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

- Superficial deposits / Made Ground – None mapped.
- Bedrock - Lower Pennine Coal Measures Formation –Siltstone, Sandstone and Coal Seams

Coal Mining

The site is within a Coal Authority Reporting Area and a Development High Risk Area. A Consultants Coal Mining report acquired for the site records that the site is in an area of Probable Unrecorded Shallow Workings. There is an inferred outcrop of the Whinmoor Coal Seam (7-50cm thick) dipping gently Northwest on site, and underground mining and four shafts within 180m Northwest of the site (related to Housley Colliery in the early 1900s) depicted on the Coal Authority Interactive Viewer. The site is therefore considered High Risk until an intrusive ground investigation has been carried out.

Summary of Environmental Data

Possible Contamination Sources.

- Current Site Use –Overgrown plot with brick bungalow, garage and two shed– Significant Risk; High (localised).
- Historical Site Use –Formally a plant nursery – Significant Risk; Possible (localised).
- Electricity Substation -Adjacent to West – Significant Risk; Unlikely.
- Cemetery / Petrol Station /Surgery – within 250m – Significant Risk; Unlikely.
- Coal Mining – Beneath site - Significant Risk; Possible.

Pathways and Receptors

- Aquifers – Below Site – Significant Risk; Unlikely.
- Underground Culvert – Significant Risk; Possible during construction phase.
- Site End Users – Onsite – Significant Risk; Possible.
- Construction Workers – Onsite – Significant Risk; Possible (localised).
- Adjacent Land Uses– 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 therefore no radon measures are required.

Qualitative Risk Assessment:

In this qualitative risk assessment, a generally Low to medium risk for contamination and ground gas on site. 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.

- Specialised site clearance to remove vegetation and fly tipped rubbish.
- Asbestos survey on existing outbuildings buildings prior to demolition.
- 3 Rotary Drill holes to locate the coal seam and prove or disprove the existence of underground workings.
- 6 No. Window sampling holes to refusal for contamination testing in areas identified as possible contamination hotspots after demolition and site clearance.
- 20 No. soil samples taken for chemical assessment 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.
- Samples for Geotechnical testing if clay is encountered.

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 Fortem Consultants. The purpose of the work was to undertake a Geo-environmental Desk Study and Coal Mining Risk Assessment Report 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 to support a planning application (23/02892/OUT) to Sheffield City Council for the demolition of a garage and the erection of 14 dwellings. The site red edge can be seen below.

2.2 Site Location

The site is located on land to the rear of 241 Burncross Road, Sheffield, South Yorkshire, S35 1RZ. The coordinates on National Grid are 434693, 396161. The proposed site is approximately 0.83 hectares (Ha) in total and lies at an elevation of approximately 113m AOD.

2.3 Site Description

2.3.1 On Site

The site has a brick bungalow with a frontage onto Burncross Road (No. 241) with a brick garage, driveway and low wall with a hedge. Access to the back of the plot is via a grassed lane way to the East of the house plot. The land rises from 103m in the North to 117m in the South with a depression to the rear of the house where there is evidence of the course of the stream which is now culverted underground.

The site is mainly overgrown with brambles and immature trees with a couple of larger trees (Sycamore and Oak). There is a rough grassed area behind the residences which back on to the North of the site and two sheds (one wooden and a brick shed, possibly with asbestos roofs).

To the East of the site are well kept allotments separated from the site by a metal fence. Two storey residences boarder the South and West of the site, with boundary wooden garden fences (some with gates to access the site). To the Northwest is a doctor's surgery, car park with a metal paling fence. A concrete base / cover was noted on the West of the site that could have been a shed base or drain cover.

As the site was covered by thick vegetation it was not possible to see fully if there was any evidence of historical coal mining on site. (See photographs in Appendix A)

2.3.2 Surrounding Area

Surrounding land uses for the site are as follows:

- North – Residential (1930s) and cemetery
- West – Residential (post II WW) and doctors' surgery
- South – Residential 1950s-60s
- East – Allotments and residential 1950s-60s

3 SITE HISTORY

3.1 Site History from Ordnance Survey Maps

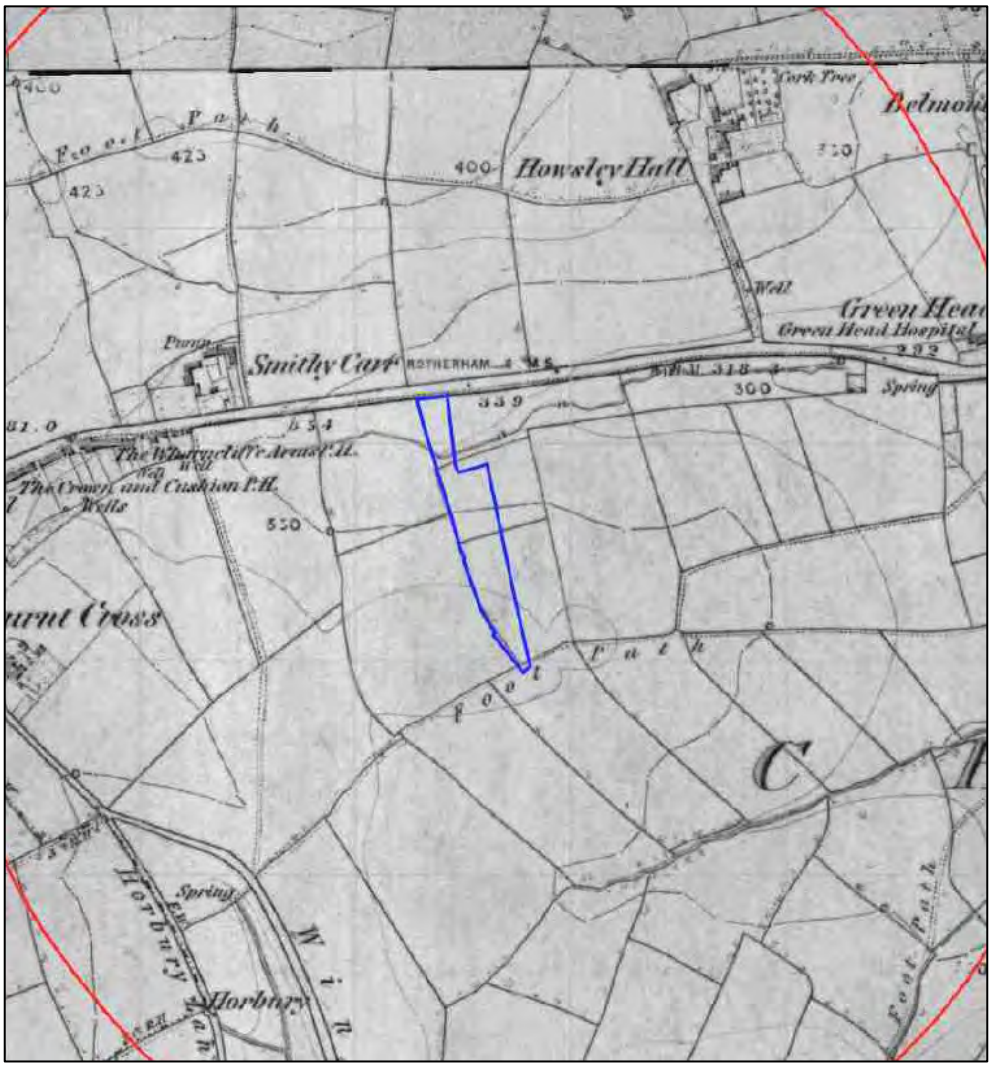
A search of available historic maps was undertaken to establish the land use history of the site. Extracts of the maps are discussed below and can be found in full in Appendix B of this report. All maps are Ordnance Survey unless otherwise stated. All distances quoted on OS maps are taken from the site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

3.2 Summary of Site History

3.2.1 On Site

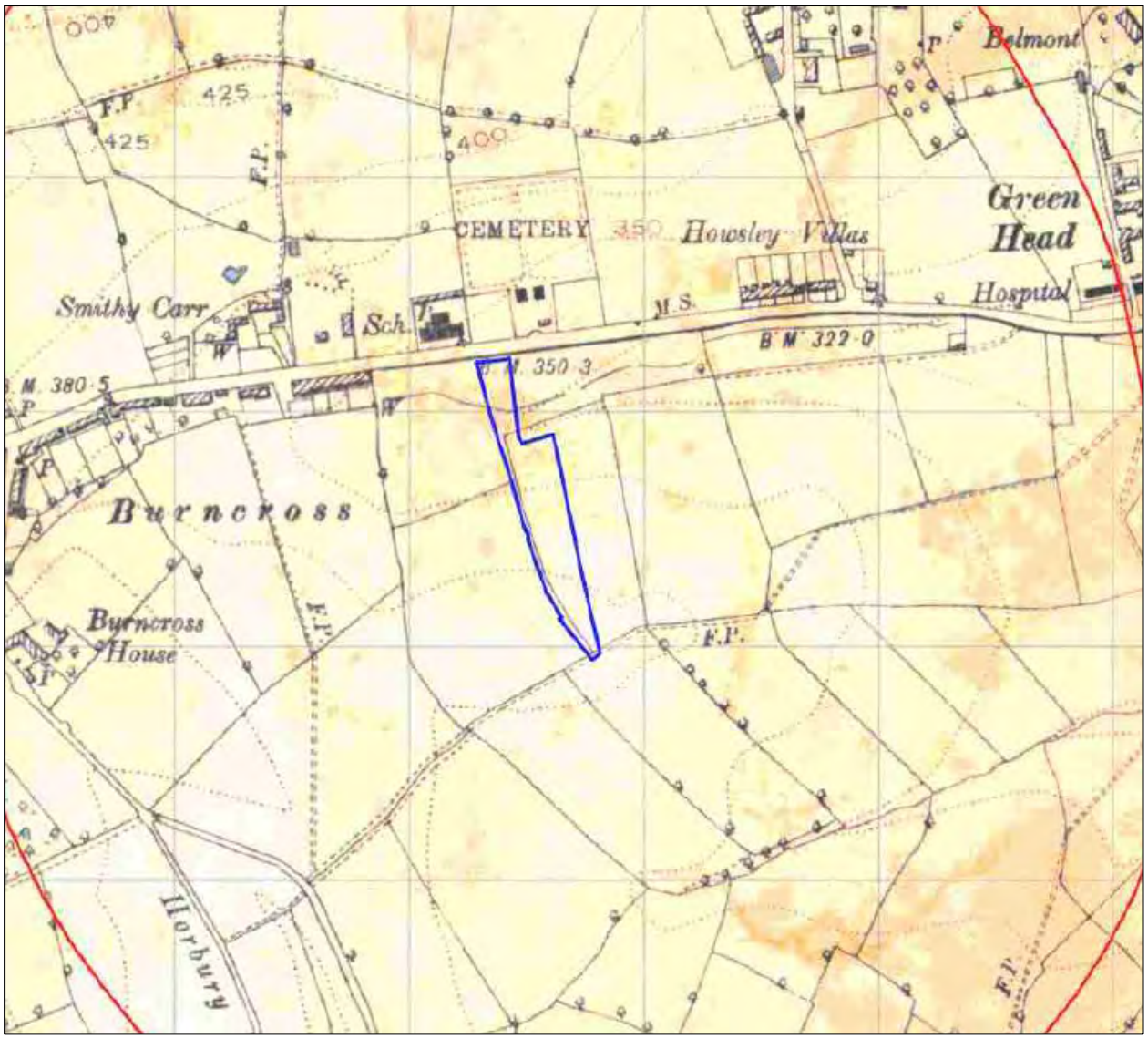
The earliest available map is the 1855 1:10,560 which shows the site as fields South of Burncross Road with a stream flowing East in the most northern field. The closest residence is Smithy Carr to the Northwest and there are two pubs, The Crown and Cushion and The Wharncliffe Arms also on Burncross Road. to the Southwest. There is a footpath crossing the most southern tip of the site. Extract below.

1855 1:10,560 Map



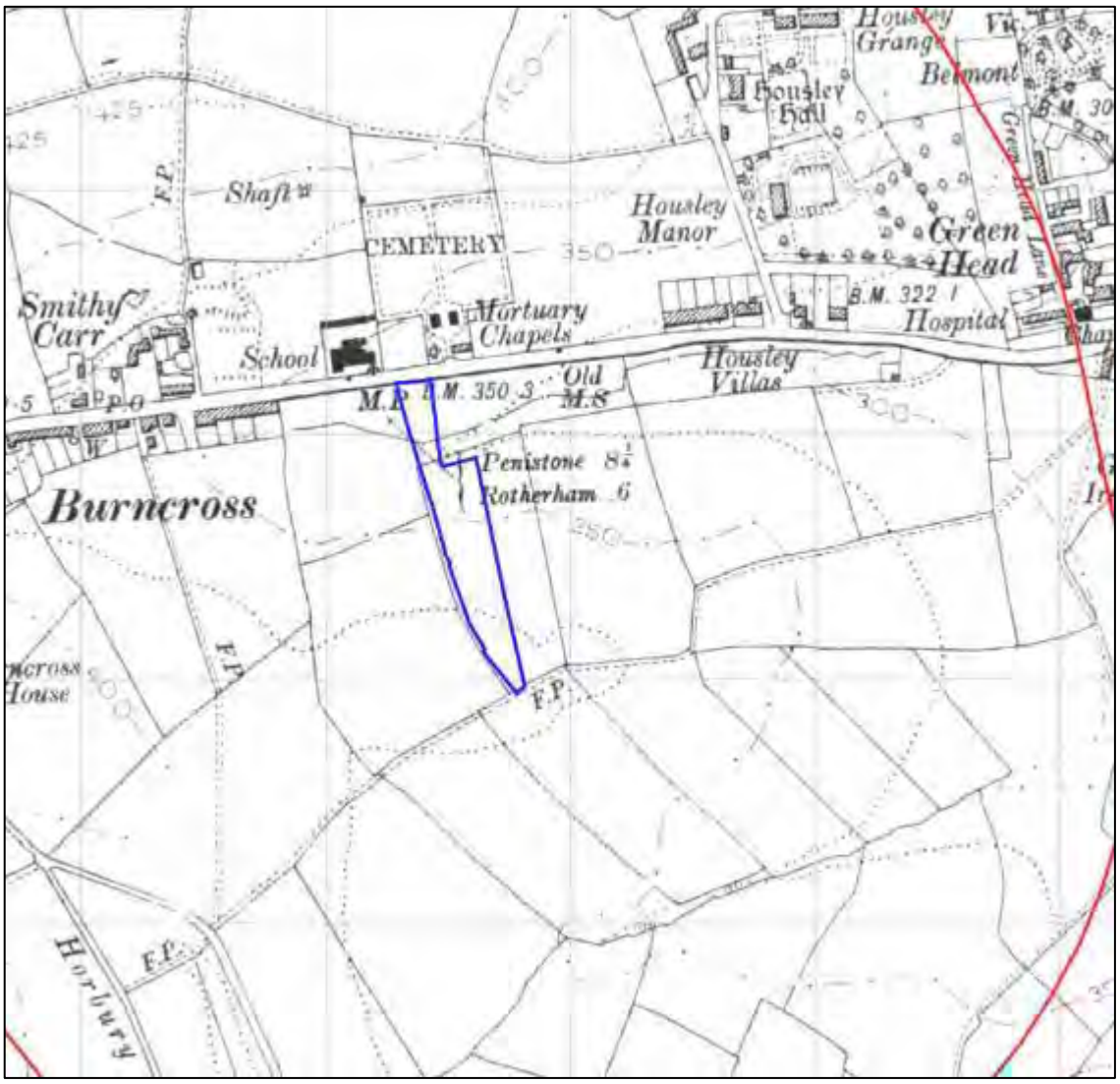
By 1892 (1:2,500 Map) there are a number of terraces (Howsley Villas) along Burncross Road and a school and cemetry opposite with a non-conformist mortuary chapel, There is also a hospital at Green Head, 480m to the East. Extract below.

1894 1:10,560 Map



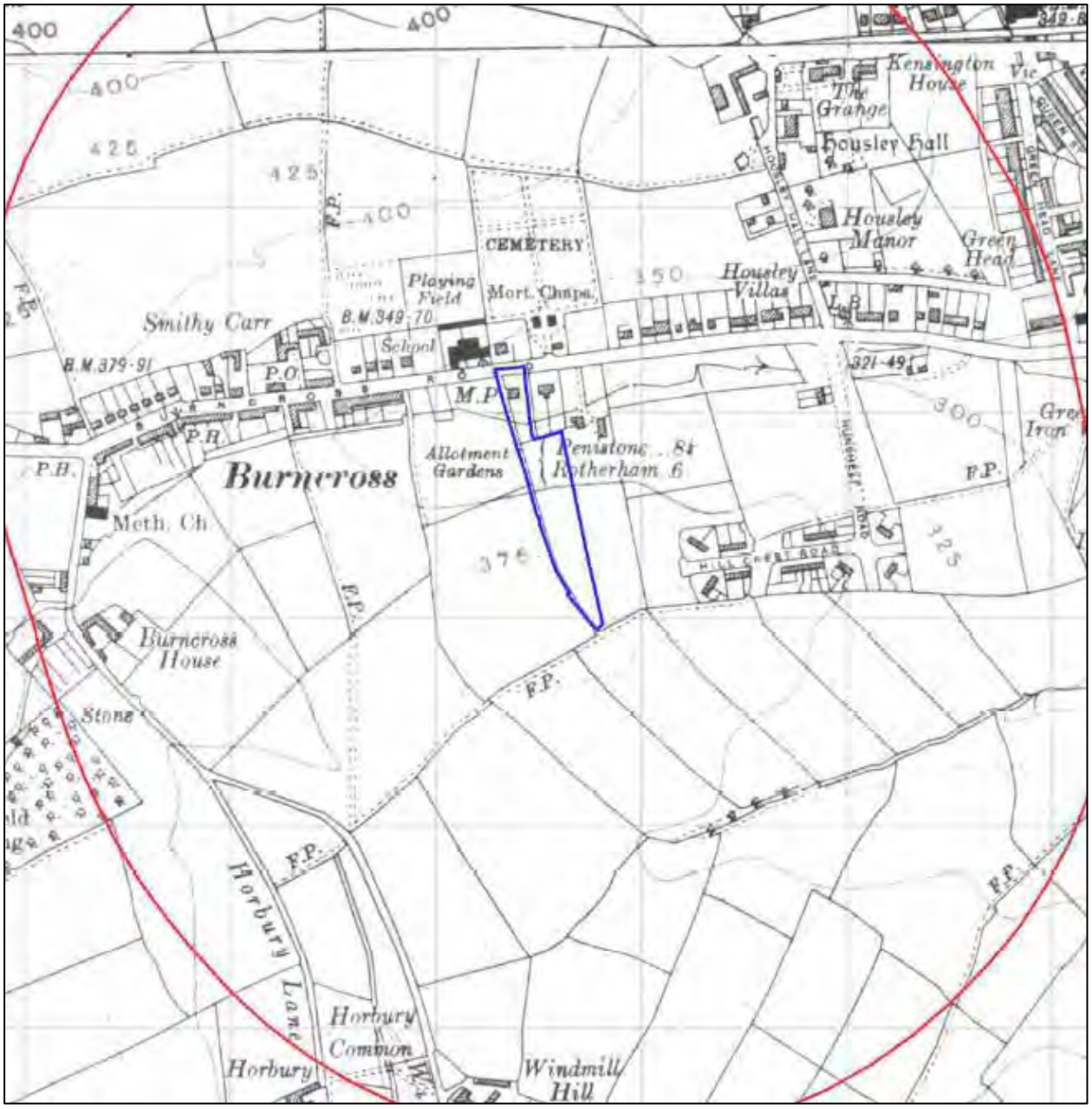
The 1903 1:10,500 OS map shows the site has not changed, however there has been more development in the Chapeltown area and a shaft is marked107m Nothwest of the site near the cemetery. Extract below.

1903 1:10,560 OS Map



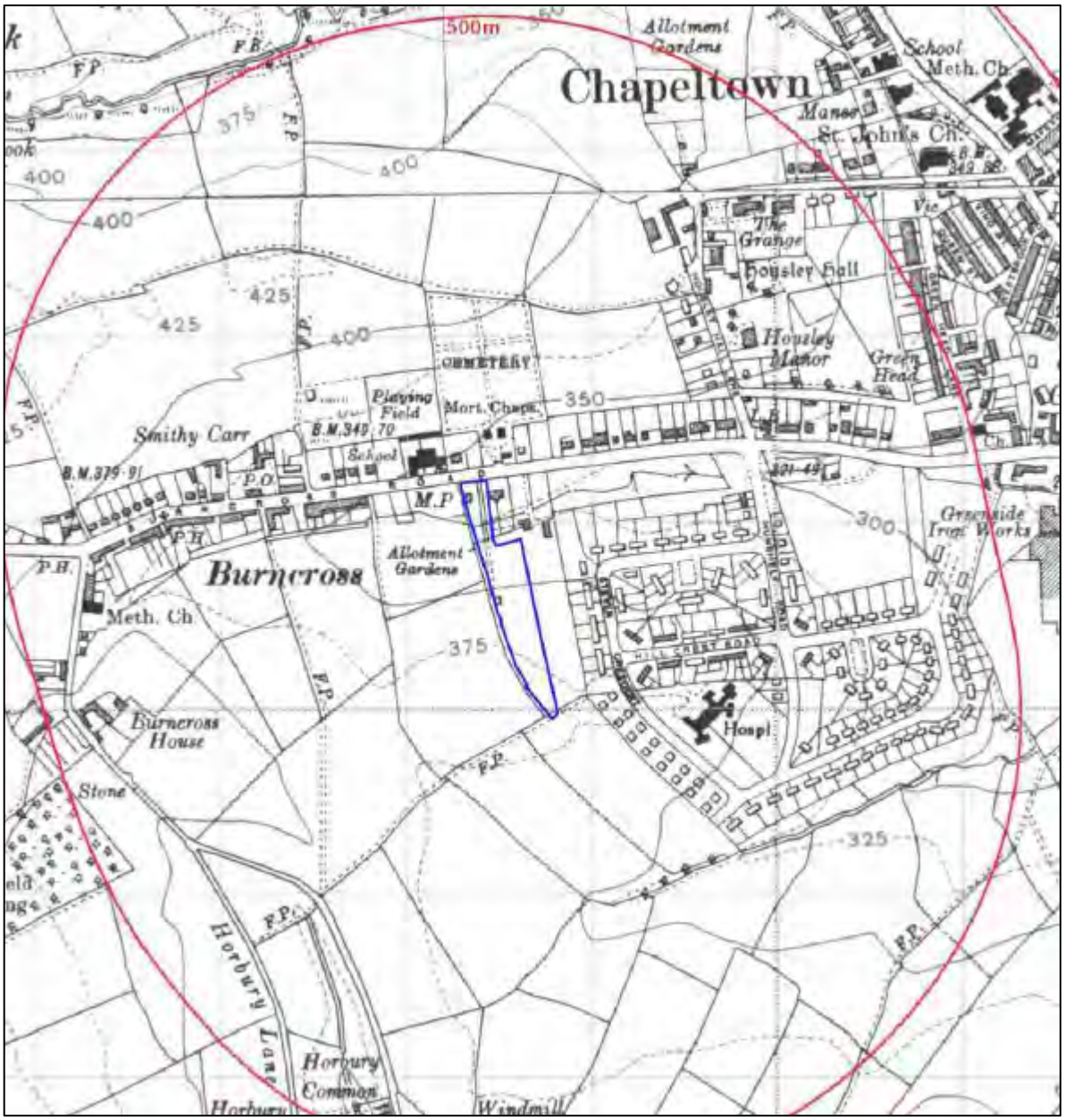
The 1938 1:10,560 OS Map shows the site to have a detached residence on the North of it, with an access from Burncross Road. The cemetery has expanded opposite, with a playing field adjacent to the West and there have been more detached houses built along Burncross Road. There is also a small housing estate to the East (Hill Court Road). Extract below.

1938 1:10,560 Map



The 1948 Map shows and access track from Burncross Road to a small shed on the West of the site behind the residence and allotment gardens to the West of the site. A new residential area has been built to the East with a hospital (Hallamshire Maternity Home). Extract below.

1948 1:10,560 Map



The site remains the same until 1956 when a nursery is labelled on the northern half of the site with a building in the middle of the site and is has been divided into smaller lots. Between 1956 and 1963 Residential areas have been built surrounding the site and another building has been added in the centre of the site and one beside the access track.

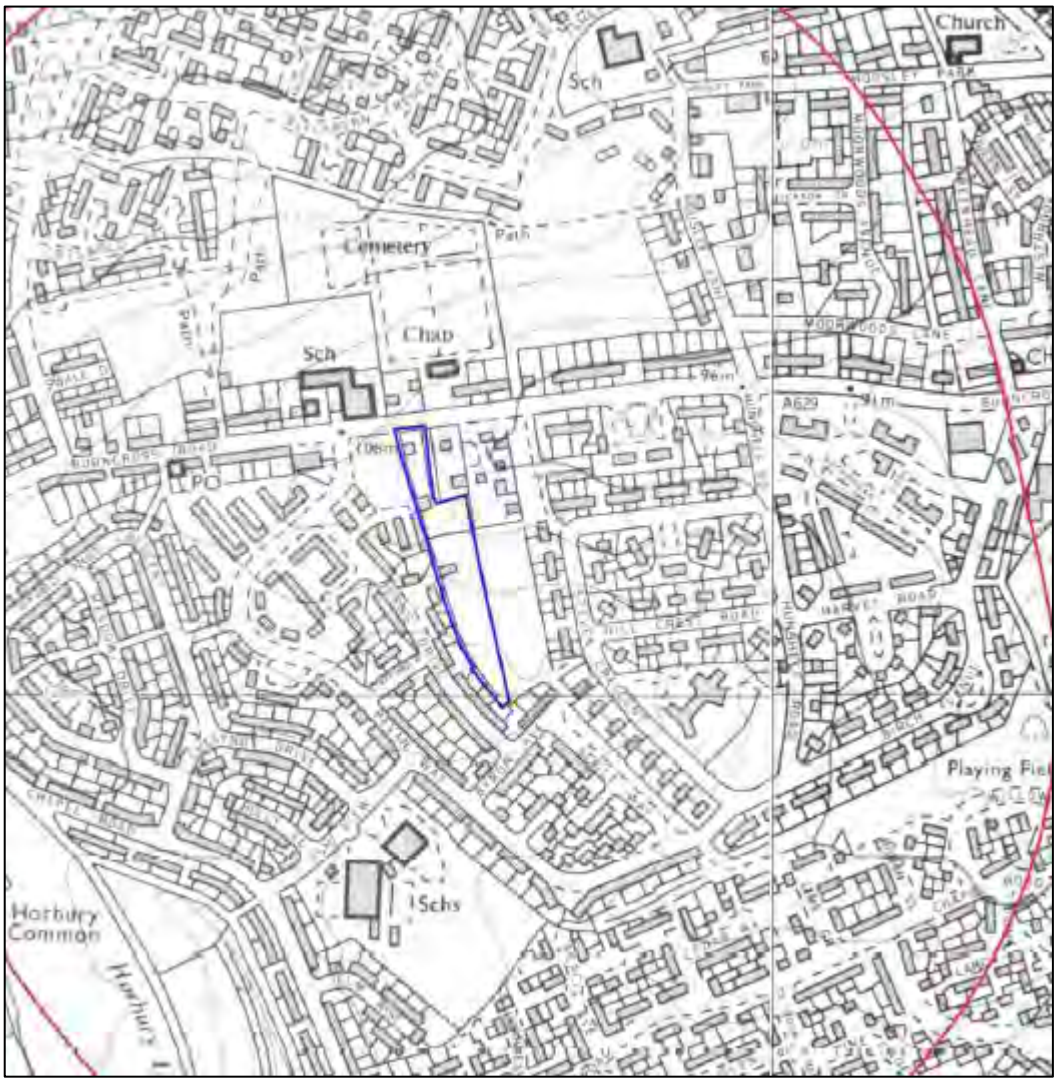
1956 1:2,500 Map

The 1974 1:2,500 Map shows that there are 5 buildings on site. The main house and smaller constructions towards the middle of the site. Extract below:

1974 1:2,500 Map

By the 1980's the area is primarily residential with the site remaining the same. Extract below:

1981 1:10,000 Map



The site has remained the same other than the most southerly building appears to have been dismantled and the southern two thirds of the site is overgrown with trees and shrubs. Extract below:

2023 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
1855	Adjacent to North – Burncross Road Surrounding Site - Fields 200m Northeast – "Smithy Carr"
1894	7- 19m North - Cemetery 127m Northwest – Unspecified Heap 480m East - Hospital
1903	20m North – Mortuary Chapel 20m North – School 170m Northwest – Shaft (not on 1929 map) 600m East – Greenside Iron Works / Caledonian Iron Foundry
1929	Adjacent to West – Allotment Gardens
1938	50m North – Playing Fields 100m East – Residential Area
1948	85m Southeast – Maternity Hospital (not on 2001 map) and extension of residential area
1956	No Significant Change
1967	Adjacent to East and part of Site – Nursery (not on 1981 map) Surrounding Site - Residential
1981	2m Northwest – Gas governor 3m Northwest – Electricity Substation 200m Southwest – School and extension of residential
1995	No Significant Change
2001	Southeast of site –Re-development of residential housing
2023	No Significant Change

4 GEOLOGY

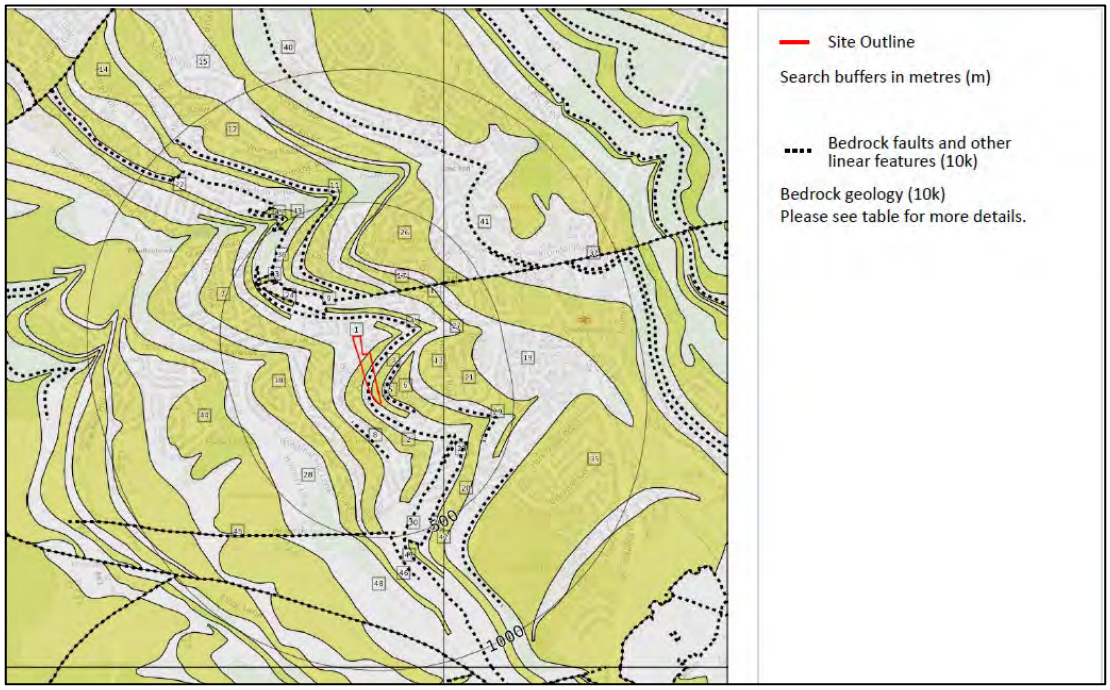
The following section details the published and available geological data available for the site and the surrounding area. All data is taken from the Groundsure Data and geological maps located in Appendix C unless otherwise stated. This report should be referred to for full details.

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 8)

Geology	Artificial Ground & Land Slip	Drift	Solid
1:10,000	None on site	No Superficial Cover Mapped	Pennine Lower Coal Measures Formation Mudstone, Siltstone, Sandstone and Coal Seams Separately Mapped Sandstone Unit – Penistone Flags

Bedrock



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

4.1.1 Faults and other linear features

There is an inferred coal seam on site and four others within 250m of the site. There is also an inferred normal fault 144m North of the site. Further details on coal seams in Section 8. Extract below:

ID	Location	Category	Description
4	**On site**	**ROCK**	**Coal seam, inferred**
5	27m SE	ROCK	Coal seam, inferred
8	117m S	ROCK	Coal seam, inferred
9	129m NW	ROCK	Coal seam, observed
10	144m N	FAULT	Normal fault, inferred
11	148m N	ROCK	Coal seam, inferred

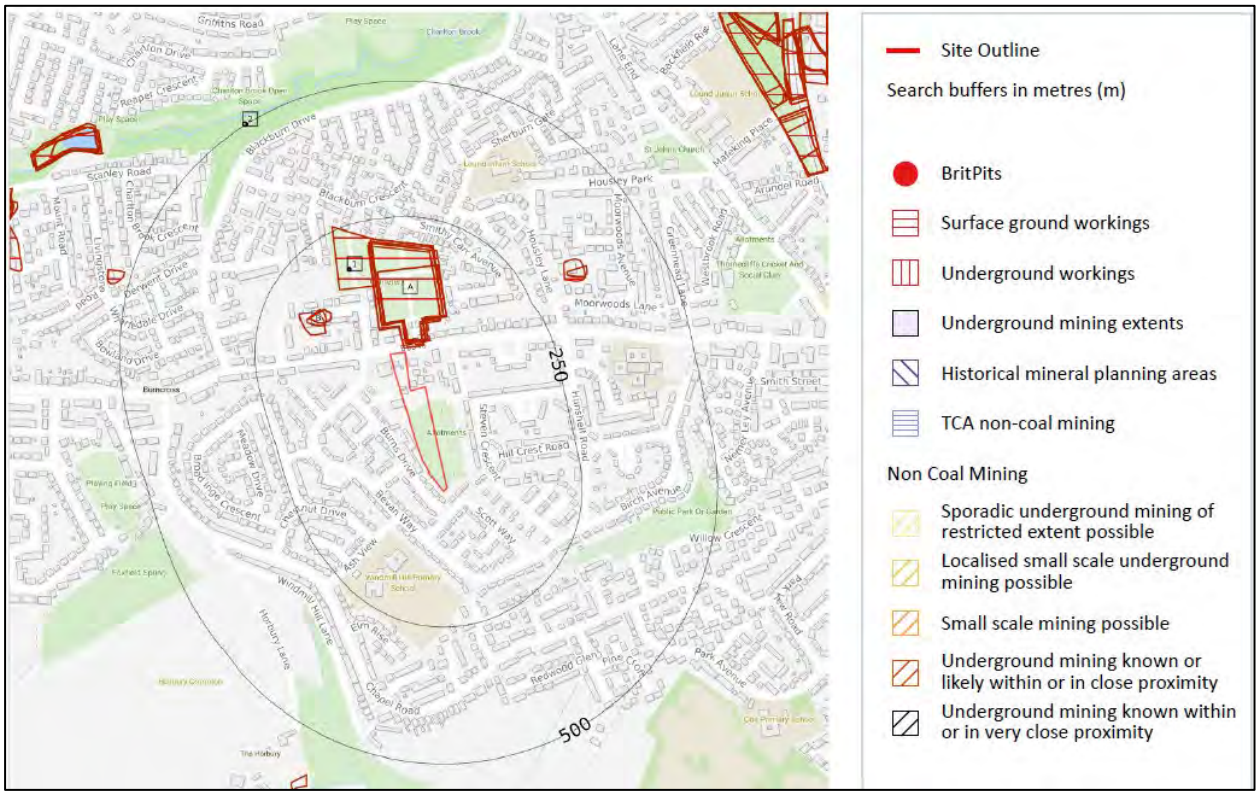
4.1.2 Historic Borehole Records

There are eight (8 No.) BGS borehole records within 250m.The cable percussion boreholes all relate to a ground investigation for Windmill School, Ecclesfield, drilled in 1973, the closest being 130m. The boreholes were between 2-4m with bedrock (mudstone and sandstone) encountered at approximately 2m. Extract below:

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	130m S	434679 395882	WINDMILL SCH ECCLESFIELD 2	3.0	N	215619 ↗
A	132m S	434655 395902	WINDMILL SCH ECCLESFIELD 1	3.0	N	215618 ↗
A	137m S	434702 395861	WINDMILL SCH ECCLESFIELD 3	4.0	N	215620 ↗

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 Surface Workings

There are thirteen (13 No.) records of surface ground workings recorded within 250m of the site. These all relate to two features, the Cemetery 7m North of the site and Unspecified Groundworkings / Heap 125m Northwest. Extract below:

ID	Location	Land Use	Year of mapping	Mapping scale
A	7m N	Cemetery	1924	1:10560
A	13m N	Cemetery	1948	1:10560
A	16m N	Cemetery	1992	1:10000
A	16m N	Cemetery		1:10000
A	18m N	Cemetery	1891	1:10560
A	18m N	Cemetery	1901	1:10560
A	19m N	Cemetery	1966	1:10560
A	19m N	Cemetery	1951	1:10560
A	19m N	Cemetery	1980	1:10000
B	125m NW	Unspecified Ground Workings	1924	1:10560
B	127m NW	Unspecified Heap	1891	1:10560

4.2.2 Underground Workings

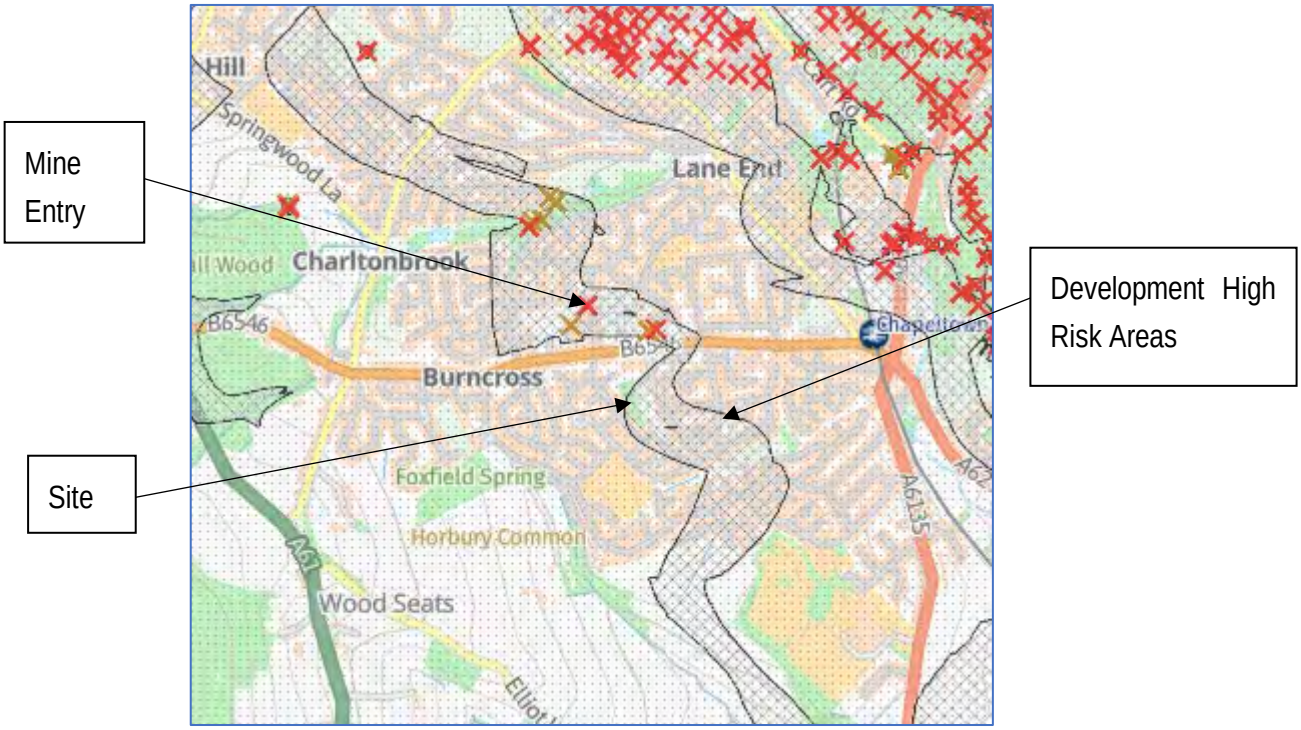
There is one (1No.) record of an underground working within 250m of the site which is an unspecified shaft 170m NW mapped in 1901 Extract below.

ID	Location	Land Use	Year of mapping	Mapping scale
1	170m NW	Unspecified Shaft	1901	1:10560
2	498m NW	Unspecified Old Shaft	1903	1:10560

4.2.3 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 within **Development High Risk** and an **Area of Probable Shallow Workings**. The viewer shows underground workings North of the site with the closest mine entries approximately 120m Northeast and 165m Northwest. A Coal Risk Assessment examines these in more detail in section 8.

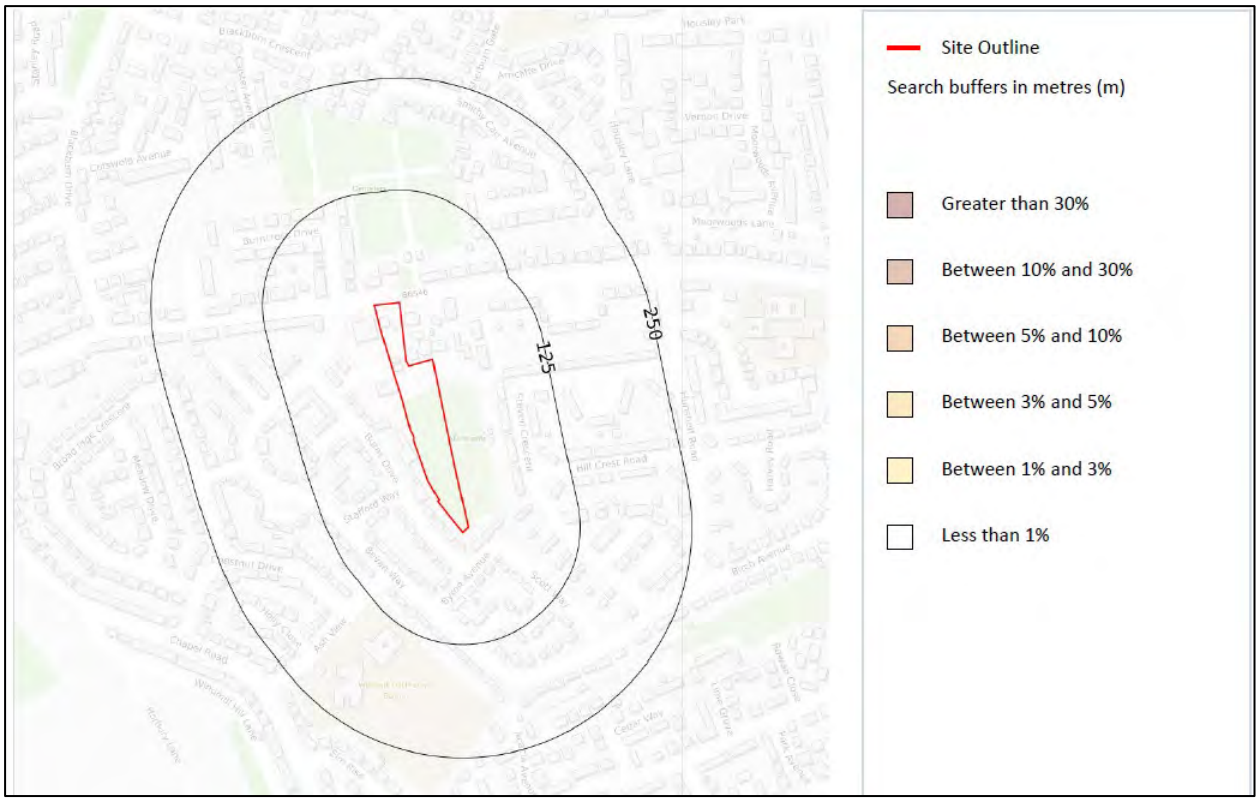
Coal Authority Interactive Viewer



4.2.4 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	-	-	-
Pollutant Release to Surface Waters (Red List Discharge Consents)	-	-	-
Pollution Incidents	-	-	-
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	Not Searched

4.4.1 Surface Water Features

There is one surface water feature recorded within 250m, which relates to a stream 216m Southeast of the site. Note that there was a stream on site which appears on maps until the 1970's when it appears to have been diverted into an underground culvert. Extract Below:

ID	Location	Type of water feature	Ground level	Permanence	Name
B	216m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

4.4.2 Hydrogeology

- There is no Superficial Aquifer as no drift cover is recorded.
- The bedrock deposits are Pennine Lower Coal Measures which consist of Sandstones, siltstones, mudstones and numerous coal seams. These are classified as a Secondary A Aquifer. (Don and Rother Millstone Grit and Coal Aquifers) with a fracture flow and low to high permeability.
- There are no surface water features within 250m of the site.
- Groundwater vulnerability is classified as medium to high for the bedrock. The leaching class is low to high.
- The site is not within a Source Protection Zone
- The site is not within a flood zone and there is little risk of flooding from surface or groundwater although the culvert on the north of the site has been assigned a slight flood risk.

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 use 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	-	2	6	-
Current or Recent Petrol Stations	-	1	-	-
Electricity Cables	-	-	-	-
Gas Pipelines	-	-	-	-
Sites Determined as Contaminated Land	-	-	-	-
Control of Major Accident Hazards	-	-	-	-
Regulated Explosive Sites	-	-	-	-
Hazardous Substance/Storage	-	-	-	-
Historical Licensed Industrial Activities (IPC)	-	-	-	-
License Pollutant Release	-	-	2	1
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)	-	-	-	-
Historic Landfill (LA)	-	-	-	1
Historic Landfill (EA/ NRW)	-	-	-	-
Historical Waste Sites	-	-	-	-
Licenced Waste Sites (EA / NRW)	-	-	-	-
Waste Exemptions	-	-	-	2
Past Land Use				
Historical Industrial Land Uses	1	9	8	13

Historical Tanks	-	-	-	1
Historical Energy Features	-	3	12	14
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 eight (8 No.) entries for recent industrial land uses within 250m of site. The closest is a gas governor 4m Northwest. Others refer to a Burncross Garage 40m Northeast, a filling station, vehicle cleaning service and electricity sub-stations. Extract below.

ID	Location	Company	Address	Activity	Category
1	4m NW	Gas Governor Station	South Yorkshire, S35	Gas Features	Infrastructure and Facilities
A	40m NE	Burncross Garage	235, Burncross Road, Sheffield, South Yorkshire, S35 1RZ	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	54m N	Texaco Filling Station	235, Burncross Road, Chapeltown, Sheffield, South Yorkshire, S35 1RZ	Petrol and Fuel Stations	Road and Rail
A	58m N	Mfg Morestyle	235, Burncross Road, Chapeltown, Sheffield, South Yorkshire, S35 1RZ	Vehicle Cleaning Services	Personal, Consumer and Other Services
2	96m W	Electricity Sub Station	South Yorkshire, S35	Electrical Features	Infrastructure and Facilities
3	106m SE	Electricity Sub Station	South Yorkshire, S35	Electrical Features	Infrastructure and Facilities

5.1.2 Recent Petrol Stations

There is one (1No.) current petrol station, Jet, 32m North of the site (previously Burncross / Jet Garage). Extract below.

ID	Location	Company	Address	LPG	Status
A	32m N	JET	235, Burncross Road, Chapeltown, Sheffield, South Yorkshire, S35 1RZ	No	Open

This data is sourced from Experian

5.1.3 Licenced Pollutant Release

There is one (1 No.) current record of a licenced pollutant release which is a permit for unloading fuel at Morestyle Filling Station 57m North of the site (Jet Garage). There is also a historical permit for the same site under the name of Burncross Service Station. Extract below:

ID	Location	Address	Details	
A	54m N	Burncross Serv Stn, Burncross Rd, Sheffield, S35 1RX	Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
A	57m N	Morestyle Filling Station, 235 Burncross Road, Sheffield, S35 1RZ	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

5.2 Waste and Landfill

There are no waste / landfill sites, current or historical or waste exemptions within 250m of the site.

5.3 Past Land Use

5.3.1 Historical Industrial Land Uses

There are eighteen (18 No.) entries for Historical Industrial Land Uses within 250m of site. There is an onsite record for a nursery in the 1960's. Nine (9 No.) relate to the cemetery to the north of the site and others, the hospital, an unspecified heap / ground workings and a shaft. Extract below.

ID	Location	Land Use	Date	Group ID
1	**On site**	**Nursery**	**1966**	**1599827**
B	7m N	Cemetery	1924	1636920
B	13m N	Cemetery	1948	1743038
B	16m N	Cemetery	1992	1680886
B	16m N	Cemetery	1924	1636920
B	18m N	Cemetery	1901	1645950
B	18m N	Cemetery	1891	1645950
B	19m N	Cemetery	1966	1714321
B	19m N	Cemetery	1951	1714321
B	19m N	Cemetery	1980	1714321
C	85m SE	Hospital	1948	1740702
C	94m SE	Hospital	1951	1645973
F	125m NW	Unspecified Ground Workings	1924	1565909
F	127m NW	Unspecified Heap	1901	1649846
F	127m NW	Unspecified Heap	1891	1649846
F	132m NW	Unspecified Heap	1924	1649850
2	170m NW	Unspecified Shaft	1901	1579083
3	199m NW	Smithy	1951	1612701

5.3.2 Historical Energy Features

There are forty (40 No.) records of six (6 No.) energy features within 250m of the site. The closest is a gas governor 2m Northwest of the site (possibly mis-labelled as an electricity sub-station in the 1970's). The others relate to electricity sub-stations. Extract below.

ID	Location	Land Use	Date	Group ID
A	2m NW	Gas Governor	1996	165703
A	2m NW	Gas Governor	1999	165703
A	2m NW	Gas Governor	1996	165703
A	2m NW	Gas Governor	1999	165703
A	2m NW	Gas Governor	1980	151001
A	3m NW	Electricity Substation	1973	148582
A	3m NW	Gas Governor	1988	165703
A	3m NW	Gas Governor	1990	165703
D	87m W	Electricity Substation	1973	166527
D	88m W	Electricity Substation	1996	161168
D	88m W	Electricity Substation	1999	161168
D	88m W	Electricity Substation	1996	161168
D	88m W	Electricity Substation	1999	161168

6 SUMMARY OF ENVIRONMENTAL SENSITIVITY

The following section is a review of the environmentally 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 overgrown plot to the rear of a brick bungalow with two sheds on. The interior sheds were not examined, therefore the contents and previous use was not known. Asbestos was identified on the shed roof. Some fly tipped rubbish and garden waste from surrounding residences.	High Risk Localised
Former Site Use Plant Nursery	Onsite	The majority of the site was undeveloped, however there are two sheds on site as well as the house and garage and historical mapping points to the site being used as a plant nursery. There is the possibility that fertilizers, weed killers, pesticides and creosote could have been used be on site as well as asbestos in former buildings on site. The site of the outbuildings moved over the years and a possible concrete shed base was identified during the walkover. The site was overgrown therefore all areas were not accessible.	Possible - Localised
Coal Mining	North of site	The historical maps show that shallow underground coal mining took place to the North of the site (shafts and underground workings on the Coal Authority Viewer and historical mapping) and there is an inferred outcrop on site.	Possible
Electrical Substation / Gas Governor	Adjacent to West of site	These are current maintained assets and although paints and capacitors can contain contaminants, they are likely to be well maintained and unlikely to be a source of contamination.	Unlikely
Cemetery	50m North of the site	There is a road separating the cemetery and the site and the area is built up with residential properties. The site rises to the south. The Cemetery is unlikely to influence the site.	Unlikely
Current Surrounding Land Uses	Within 250m	The area is mainly residential with a surgery next door and a Co-op close by. There is a Jet petrol station on Burncross road 30m to the West. These are maintained assets with regulations and permits that are likely to be adhered to.	Unlikely

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 on site are designated as a Secondary A Aquifer and there are no superficial deposits. Site does not lie within Source Protection Zone. There is an underground culvert on site.	Unlikely
Underground Culvert (Grey water)	Below Site	There was a stream on site until the 1970's which is now culverted underground. This could act as both a pathway and receptor of potential contamination during the construction phase.	Possible during construction phase
Adjacent sites	Surrounding site,	The surrounding land use is mainly allotments and residential. Burncross Surgery is adjacent to the East. The site slopes to the North. The control of run off, dust and noise will be required to be addressed in Construction Management Plan due to proximity of adjacent residences.	Unlikely
Construction / Ground workers	On site	Construction workers may be exposed to contaminating substances. Throughout the construction phase 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 residential which is a highly sensitive receptor, there is a low potential for localised contamination onsite as a result of fertilizers, insecticides and creosote etc being used in the nursery however this is considered unlikely given the time passed since they were used. A ground investigation for shallow coal mine workings and ground gas related to coal seams is required.	Possible

7 INITIAL CONTAMINATION CONCEPTUAL MODEL

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

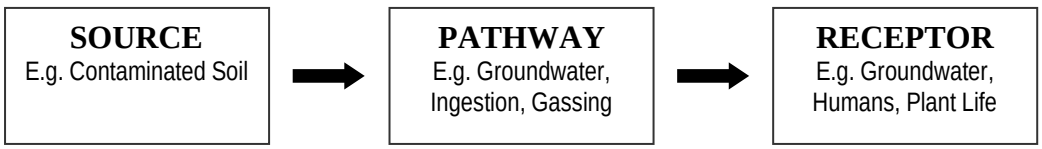
This section of the report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

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 Residential end use.



Type of Contamination	Potential Sources	Potential Pathway	Potential Receptors	Pollution Linkage	Comment	Estimated Level of Risk
Ground Gas	Possible Made Ground and coal seams onsite.	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. A site investigation including gas monitoring will be required. PPE to protect construction workers.	Low
		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. Future end use to be residential therefore high sensitivity. A site investigation including gas monitoring will be required.	Low - Medium
Surface and Near Surface Contaminants Within Soils	Former historical coal mining Former Plant Nursery Fly tipped rubbish and	Ingestion, Inhalation, Dermal Contact	Current Site Users	Potentially Active	Much of the site is vacant and overgrown, never been developed and historically used as a plant nursery. Localised contamination from historical chemical use or asbestos from sheds could be on site. Fly tipped rubbish was noted during the walk over. The sheds possibly have asbestos roofs. The site is surrounded by fencing but there is access at the southern end from the residences. It is advised that a specialised site clean up is carried out to remove the risk to current users.	High
			Construction Workers	Potentially Active	Much of the site is vacant and overgrown and historically used as a plant nursery. Localised contamination from historical chemical use or ACH from sheds could be on site. Fly tipped rubbish was noted during the walk over site clean-up is required. The sheds possibly have ACM roofs which will require disposing of according to protocol during demolition phase. Potential for localised contamination onsite from contaminants in the outbuildings, current and historic. Suitable PPE to protect workers.	Medium
			Future Site Users	Potentially Active	Potential for localised contamination onsite. However, if the site clean up is carried out and a ground investigation conducted including contamination and gas testing the risk to future site users is likely to be Low.	Low
			Adjacent Land Users	Potentially Active	Adjacent site use is mainly residential and a doctor's surgery. The site is slopes down to the North. The site is not thought to have significant widespread contamination. SI to determine risk.	Low
		Direct Contact	Structures	Potentially Active	Elevated pH's and Sulphates are not anticipated however coal mining activity may cause higher sulphate values and lower pHs. Ground investigation to confirm.	Low
		Absorption in Root Zone	Plants	Potentially Active	Low potential for localised contamination onsite. Future site use is residential therefore is a high sensitivity proposed site end use. Ground investigation to confirm.	Low
Mobile Contaminants, Leachables e.g. from Pollution Sources Adjacent to Site/On Site	Allotments Residential and Surgery Cemetery / Garage	Leaching into Groundwater	Groundwater	Potentially Active	Bedrock classed as Secondary A Aquifer and there are no superficial deposits mapped. Low potential for localised contamination onsite. Site sloes to North with depression where a watercourse has now been culverted underground. GI to confirm.	Low
		Off-site Migration in Groundwater	Abstractions	Potentially Active	No current water abstractions identified within 250m of site. Site does not lie within Groundwater Source Protection Zone.	Low
			Controlled Waters	Potentially Active	Low potential for localised contamination onsite. Underground stream to the rear of the dwelling on site. Construction Management Plan will need to take this into consideration preventing site run off into this area.	Medium during Construction Phase

Type of Contamination	Potential Sources	Potential Pathway	Potential Receptors	Pollution Linkage	Comment	Estimated Level of Risk
Organic and Inorganic Contaminants Within Soils / Groundwater	Allotments Residential and Surgery Cemetery / Garage	Potable Water Supply Pipes	Utilities Workers	Potentially Active	UU Assessment can be carried out as part of the ground investigation however widespread contamination not anticipated.	Low

7.2 Contamination Summary

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

7.3 Geotechnical Constraints

- Sloping site approximately 1:8 m rising to the South.
- Underground stream to the rear of the bungalow on site
- Demolition of buildings with possible ACM will be required.
- Trees / stumps on site require removal and geotechnical testing for tree heave protection recommended. Note: Deep superficial cover not anticipated.
- Potential foundations on site from former garden nursery structures
- Potential for historical mineworking at shallow depth
- There is a small retaining wall to the East of the site access. It is likely it will not withstand heavy plant and the access is narrow for large machinery. An assessment will be required.

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).

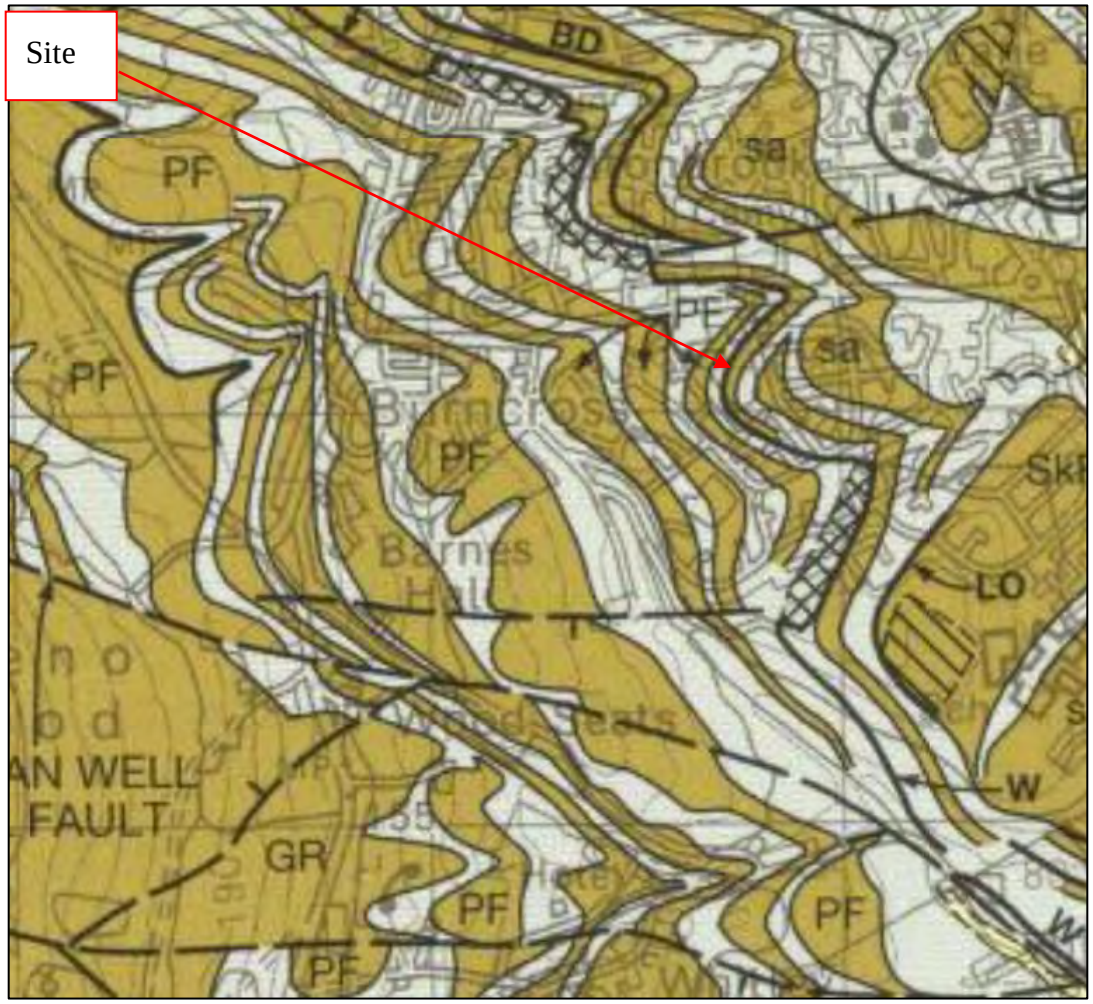
8.1 Geology

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

8.1.1 Superficial Geology

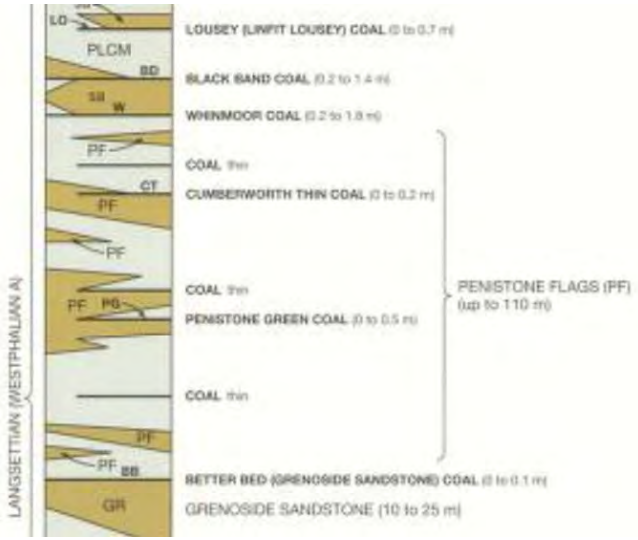
The site is not shown to be underlain by any superficial deposits or made ground. The nearest boreholes drilled in the 1970s for Windmill School show approximately 2m of silty clay with sandstone fragments over the bedrock (fine grained sandstone and mudstone).

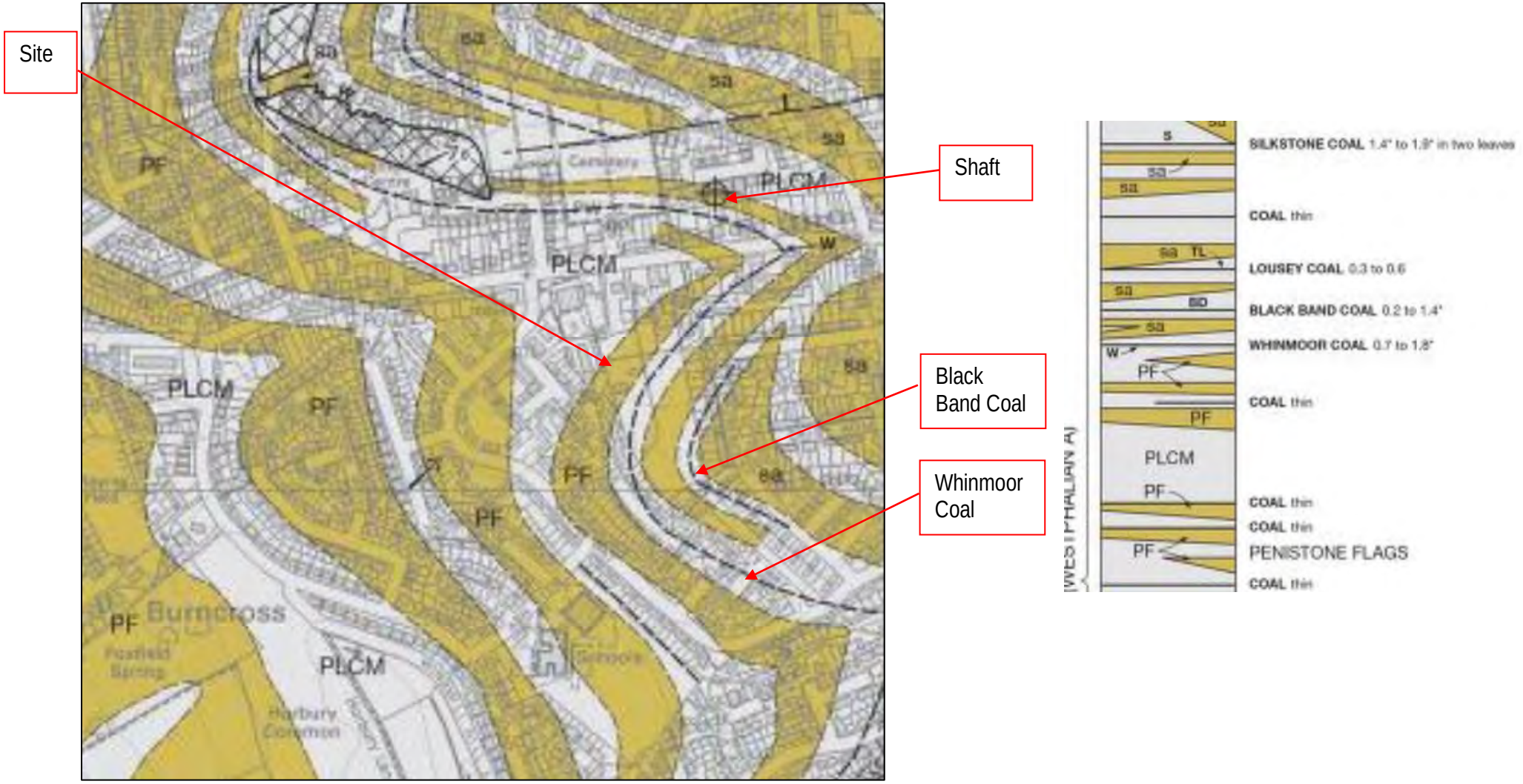
8.1.2 British Geological Survey Published Bedrock Data



British Geological Survey 1:50,000 map 87 Barnsley published 2001

Pennine Lower Coal Measures





British Geological Survey 1:10,000 map SK39NW published 2005.

8.1.3 Bedrock Geology

The bedrock geology is mapped as the Carboniferous Pennine Lower Coal Measures with the separately mapped sandstone units of the intercalated Penistone Flags mapped across the middle and in the SE of the site. Here the Coal Measures consist of interbedded grey mudstone, siltstone and pale grey sandstone with coal seams. The Pennistone Flags are described as thin flaggy sandstones separated by beds of shale containing thin coal seams and fireclay. Beds dip gently to the Northwest, coal seams and sandstone units following and outlining the topography.

The Whinmoor coal seam is inferred to outcrop on site which is recorded to be 3"-1'8" (7-50 cm) thick. The Whinmoor coal is underlain by a series of thin coals associated with the top of the Penistone Flags, sandstone beds.

Inferred regional faults are mapped trending E-W, however not in the vicinity of the site.

There is a shaft marked on the 1:10,000 Geology Map approximately 150m Northeast of the site.

The topography rises from Burncross Road up to the South.

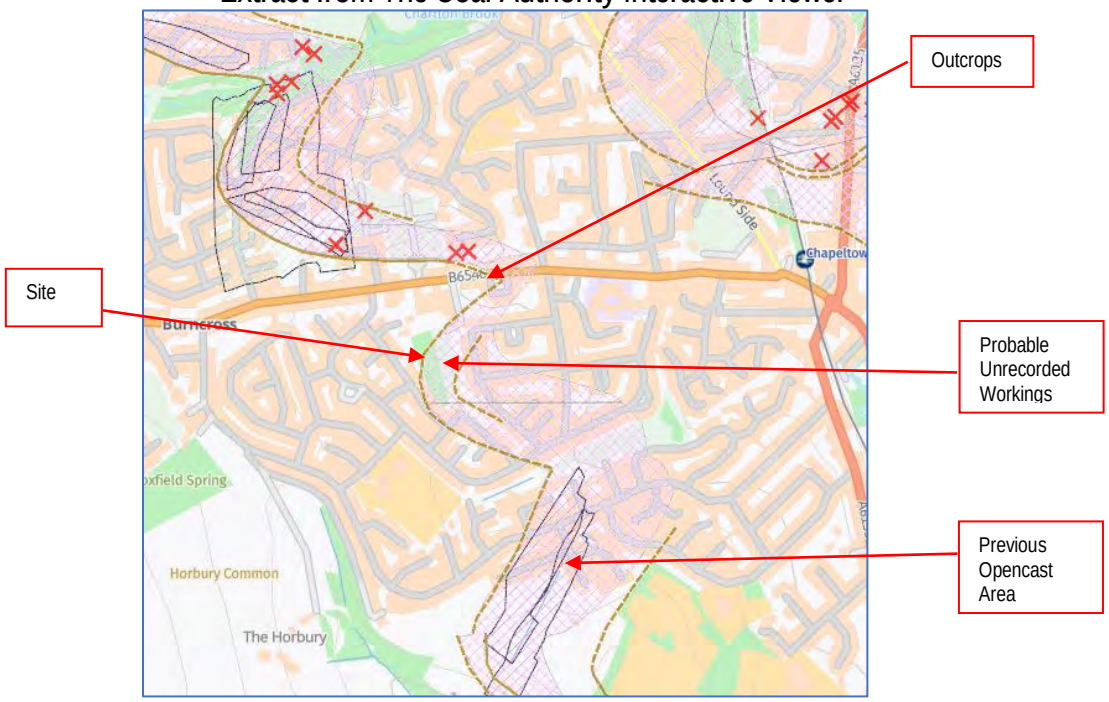
8.1.4 Borehole Records

There are a number of borehole records available on the geo index website some of which are shown below and summarised in sections 4.1.2. Namely showing bedrock at < 2m depth.

8.2 Coal Authority Records

Reference to the Coal Authority Viewer shows the site to be **within an Area of Probable Un-recorded Shallow Workings.** There are four shafts depicted within 180m North of the site, North of Burncross Road.

Extract from The Coal Authority Interactive Viewer



Screeen shot of Coal Authourity Interactive Viewer https://mapapps2.bgs.ac.uk/coalauthority/home.html

A Coal Authority Consultants Report obtained for the site (see plot on following page) displays the workable outcrops of the Whinmoor Coal within the site boundary and 21.6m to the Southwest.

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
WHINMOOR	Coal	Yes	Within	N/A	38
WHINMOOR	Coal	Yes	21.6	South-West	338

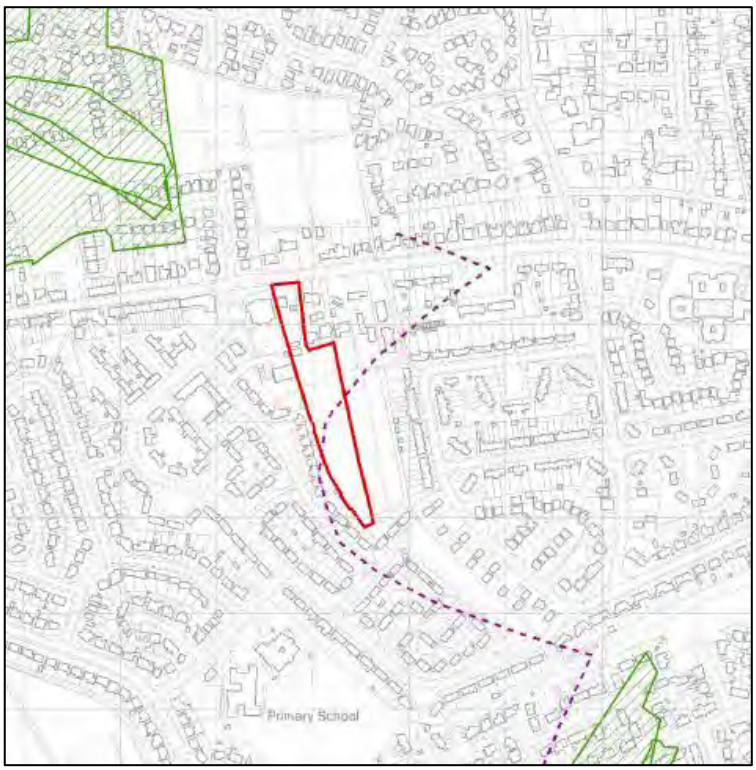
8.3 Underground Mining

The Consultant's Report does not record any underground mining beneath the site but indicates there are probable unrecorded shallow workings. The Coal Authority Viewer shows an area of underground workings 180m to the Northwest of the site which may have later been opencast.

The Consultants Mining Report records that there are **no mine entries within 100m**. In addition, it does not record any remediated sites or site investigations within 50m of the boundary and there is no record of mine gas, Coal Authority managed tips or mine water treatment schemes within 500m.

There are unlicenced opencast sites 100m to the Northwest and 400m Southeast of the site.

Coal Authority Plot



8.4 Mining History

Burncross is on the northern edge of the Sheffield Coalfield. The closest major colliery was Thorncliffe Colliery situated in Tankersley, a mile to the Northeast, which operated from the mid 1800's through to the 1950's when it merged with Smithy Wood to the Southeast of the site. Thorncliffe exploited numerous seams including Fenton, Parkgate, Silkstone and the Whinmoor seam (which outcrops on the site). The coal in the area led to the rise of coking plants, iron foundries and other heavy industries.

Prior to the deep underground mining in the area, coal had been extracted from near surface outcrops which due to the lack of drift cover, were easily accessible from the valley sides via adits. Where coal seams were thick enough, seams were exploited via shallow shafts. The Housley Colliery North of the site is recorded by the Northern Mines Research Society as being open 1907-1910 and on the Interactive Mapper as 11 meters deep. The Geological Memoir for Barnsley documents the Housley Colliery as adits and shafts connecting with adits along the outcrop North of Burncross and the coal being 2'9" – 3' 1" (80-90cm) thick. The Coal Measures in this area including the Penistone Flags, separated by shale and the coal seams being thin and only worked casually in outcrop although a valuable bed of fireclay overlay the flags which was often worked in conjunction with the Whinmoor Coal. The Whinmoor Coal was considered poor quality. The Cumberworth Thin Coal (seldom exceeding 30cm) underlies the Whinmoor Coal and the Black Band coal 10-50ft (3-15m) above the Whinmoor locally reaches 2ft (0.6m) but is not worked. No further information was available on the other shafts in the area or opencast mines which operated prior to the 1980's when the area was redeveloped for housing.

Thorncliffe Iron Works and Colliery, Chapeltown. From Britain from Above website.

Conclusion

The Coal Authority Report and Interactive Viewer record the site to be in an area of probable unrecorded shallow workings. Shallow workings from the early 1900's exist to the North of the site associated with the Housley Colliery and outcrops of the workable Whinmoor Coal (and possibly fireclay) are inferred to outcrop onsite, dipping gently Northwest, The Whinmoor Coal is known to be underlain by thin coals intercalated with

the Penistone Flags. From the information available it is not possible to rule out the possibility that coal has been worked beneath the site. Therefore the site should be considered high risk until an intrusive ground investigation involving rotary drill holes to 30m has been carried out to prove or disprove the presence of shallow workings.

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 shallow coal workings.
- 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.

- Site clearance to remove vegetation and fly tipped rubbish.
- Asbestos survey on existing outbuildings buildings prior to demolition.
- 3 Rotary Drill holes to locate the coal seam and prove or disprove the existence of underground workings.
- 6 No. Window sampling holes to refusal for contamination testing in areas identified as possible contamination hotspots after demolition and site clearance.
- 20 No. soil samples taken for chemical assessment 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.
- Samples for Geotechnical testing if clay is encountered.

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

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 SK39NW, published 2005.
- BGS 1:50,000 geology map 87 Barnsley, published 2001.
- 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.
- R & D Publication CLR 10 (March 2002) The Contaminated Land Exposure Assessment Model (CLEA): Technical basis and algorithms. Environment Agency.
- 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).
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- 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.nmrs.org.uk/assets/mines/coal/yorkshire/1854/H.html
- http://www.dmm.org.uk/colliery/t207.htm
- Geological Survey of Great Britain, Geology of the country around Barnsley: Explanation of sheet 87. 1947

APPENDIX A

(i) Site Location

(ii) Site Photographs

Site Location Plan
The site is located on land to the rear of 241 Burncross Road, Sheffield, South Yorkshire, S35 1RZ. The coordinates on National Grid are 434693, 396161. The proposed site is approximately 0.83 hectares (Ha) in total and lies at an elevation of approximately 113m AOD.

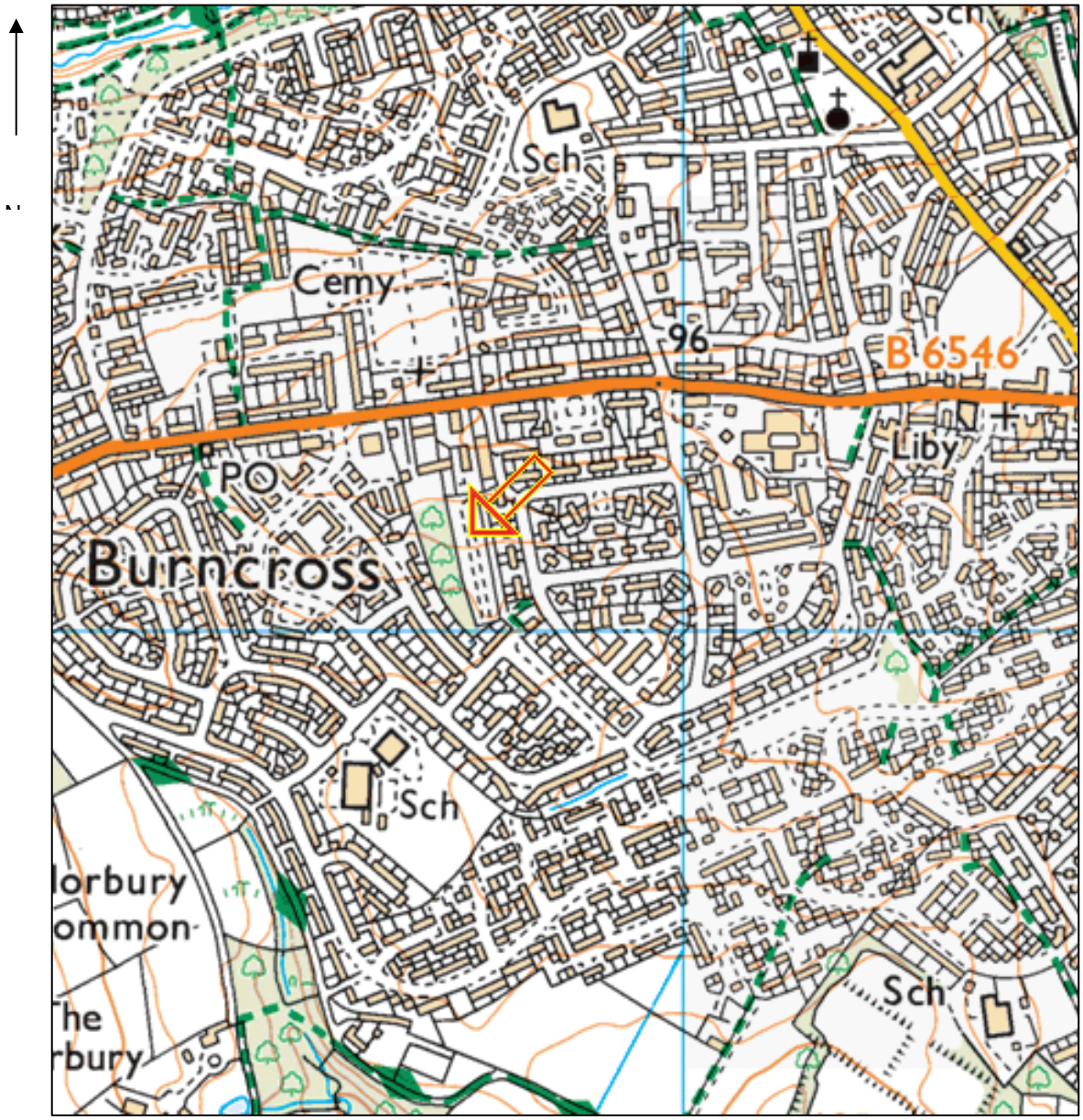


Photo 1) Entrance to Site from Burncross Road looking Southeast

Photo 2) Looking Nort at the rear of the bungalow on site, Note brick garage to the right and depression in foreground where underground stream runs.

Photo 3) Looking North from the middle of the site towards houses set back from Burncross Road

Photo 4) Looking South from rear of bungalow on site towards wooden shed (brick shed behind) with asbestos roof.

Photo 5) Looking Northwest towards surgery and substation. Oak tree in foreground.

Photo 7) Looking North with allotments on East side from the South end of the site

Photo 8) Looking South at southern boundary of the site

Photo 9) Looking South from mid-site showing typical vegetation. Access via paths only.

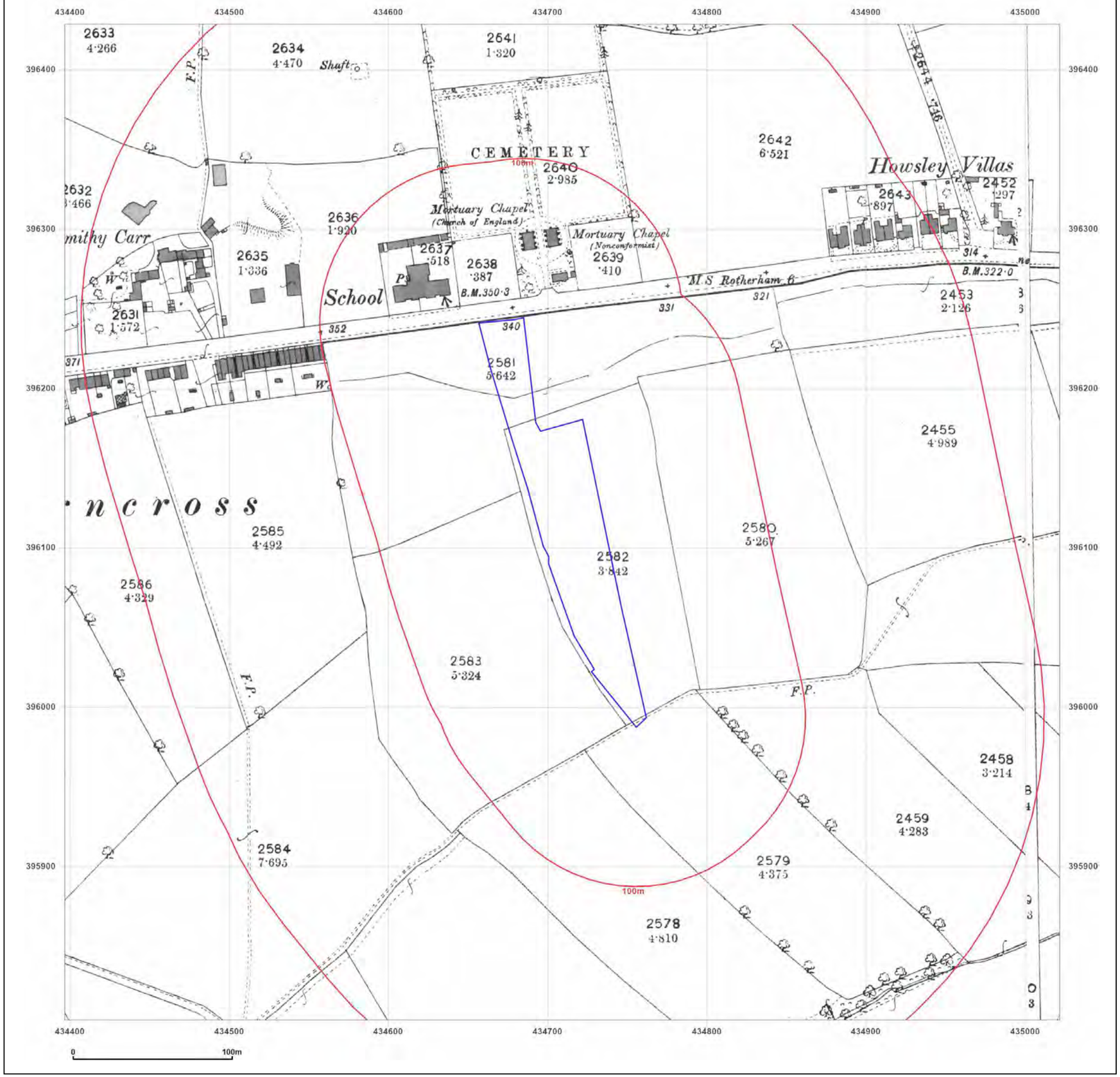
Photo 10) Narrow grassed laneway from Burncross Road Looking North. Retaining wall to driveway on Eastern side.

Photo 11) Looking West at residences beyond Western boundary.

Photo 12) Brick garage to the rear of the bungalow

APPENDIX B

(i) Historical Mapping



Groundsure INSIGHTS

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SHEFFIELD, S35 1RZ

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Grid Ref: 434709, 396116

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Printed at: 1:2,500

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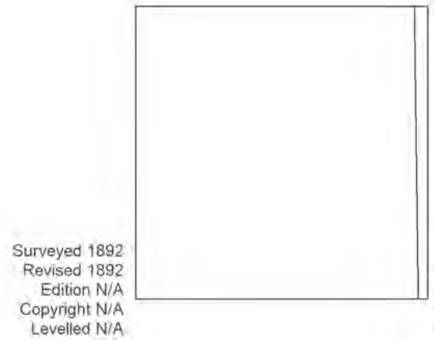

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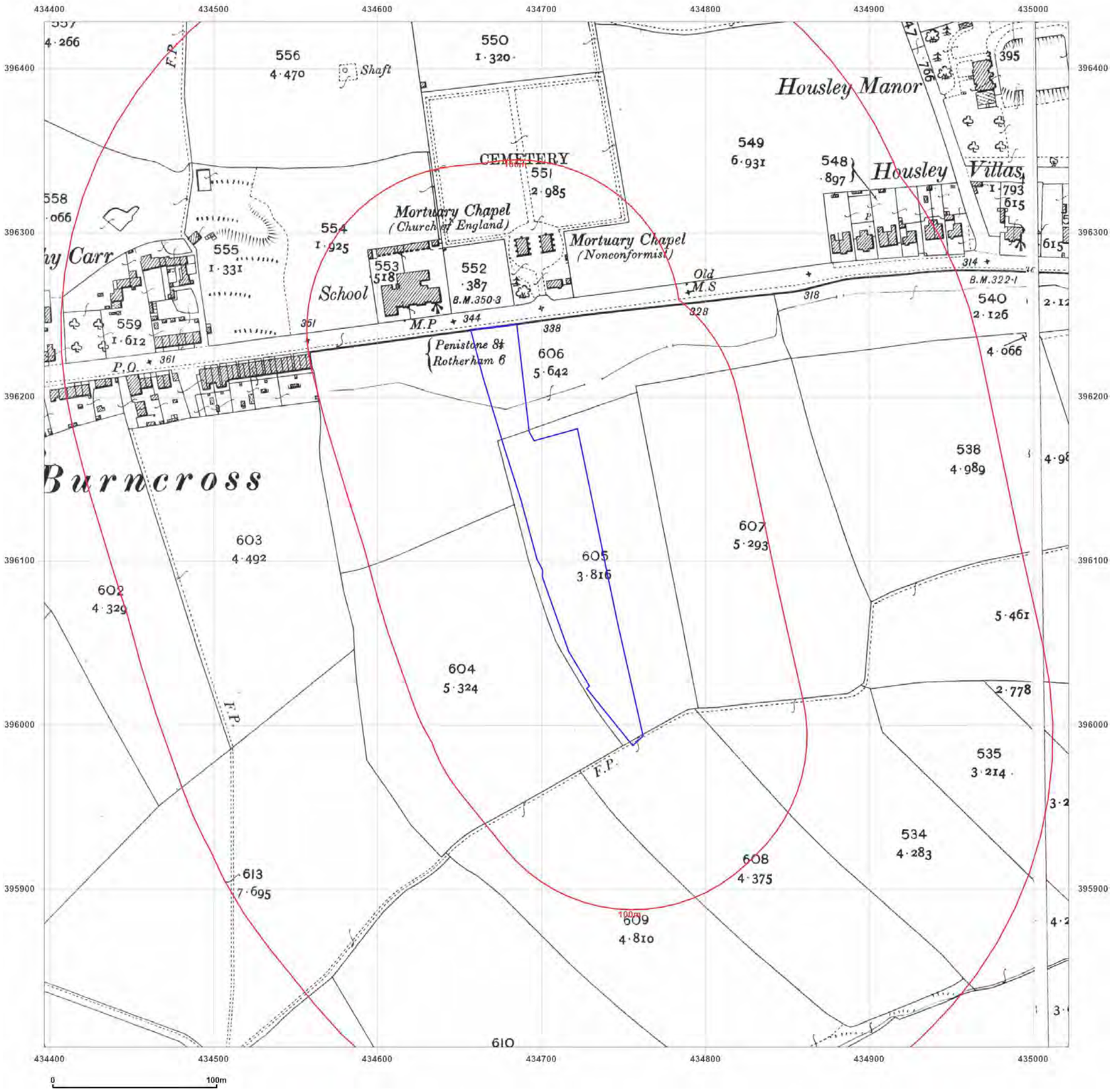
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

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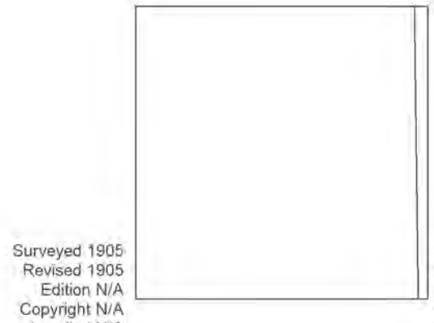

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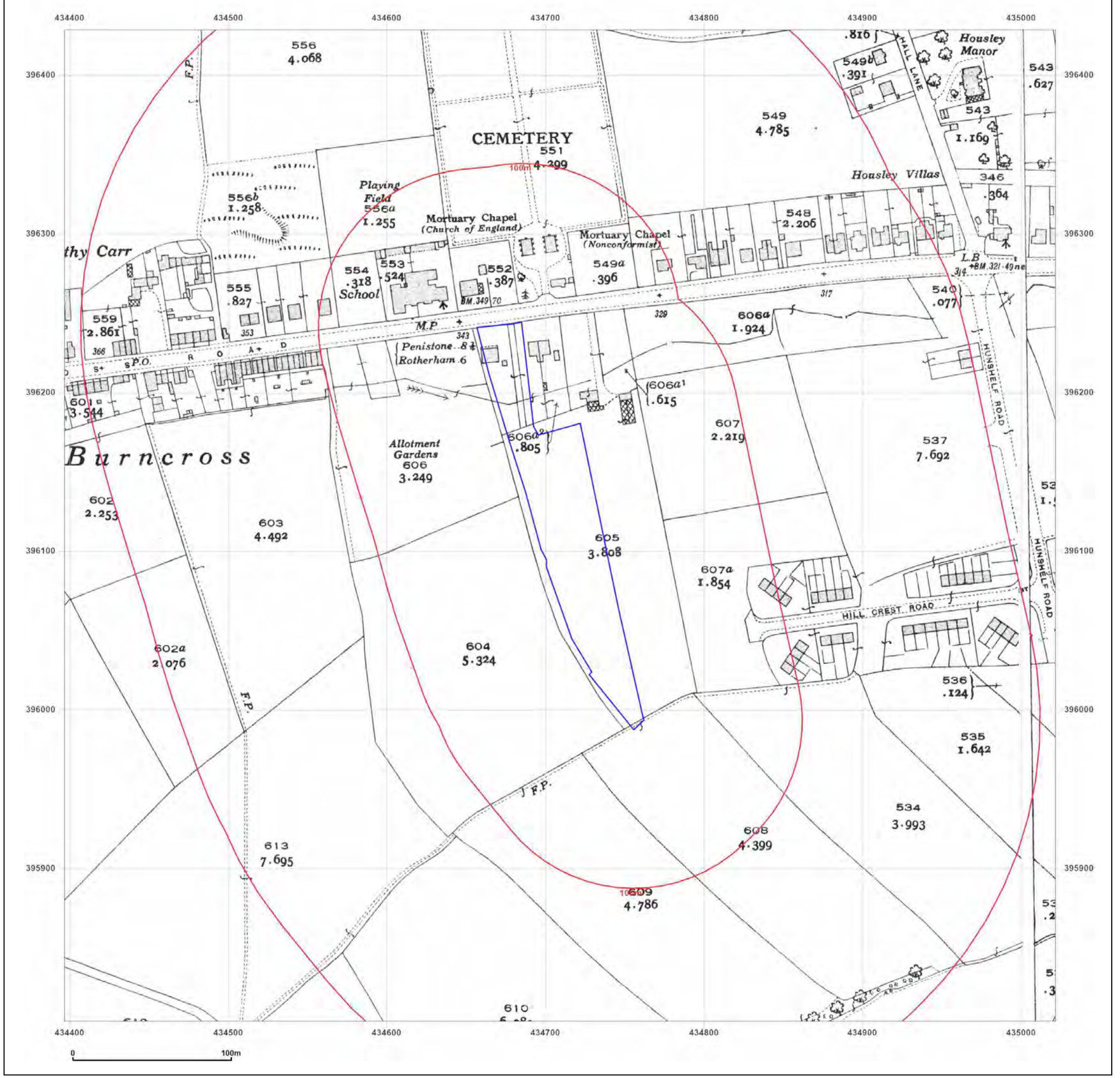

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

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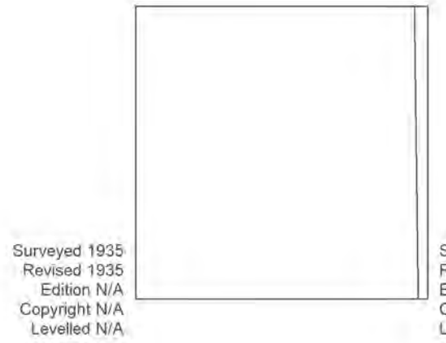

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Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid
Map date: **1956**
Scale: 1:2,500
Printed at: 1:2,500

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Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1963**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1963
Revised 1963
Edition N/A
Copyright 1964
Levelled 1959

Surveyed 1963
Revised 1963
Edition N/A
Copyright 1964
Levelled 1959

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Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1970-1974**

Scale: 1:2,500

Printed at: 1:2,500

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

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

Surveyed 1956
Revised 1970
Edition N/A
Copyright 1971
Levelled 1963

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Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1971-1974**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1973
Revised 1973
Edition N/A
Copyright 1974
Levelled 1963

Surveyed N/A
Revised N/A
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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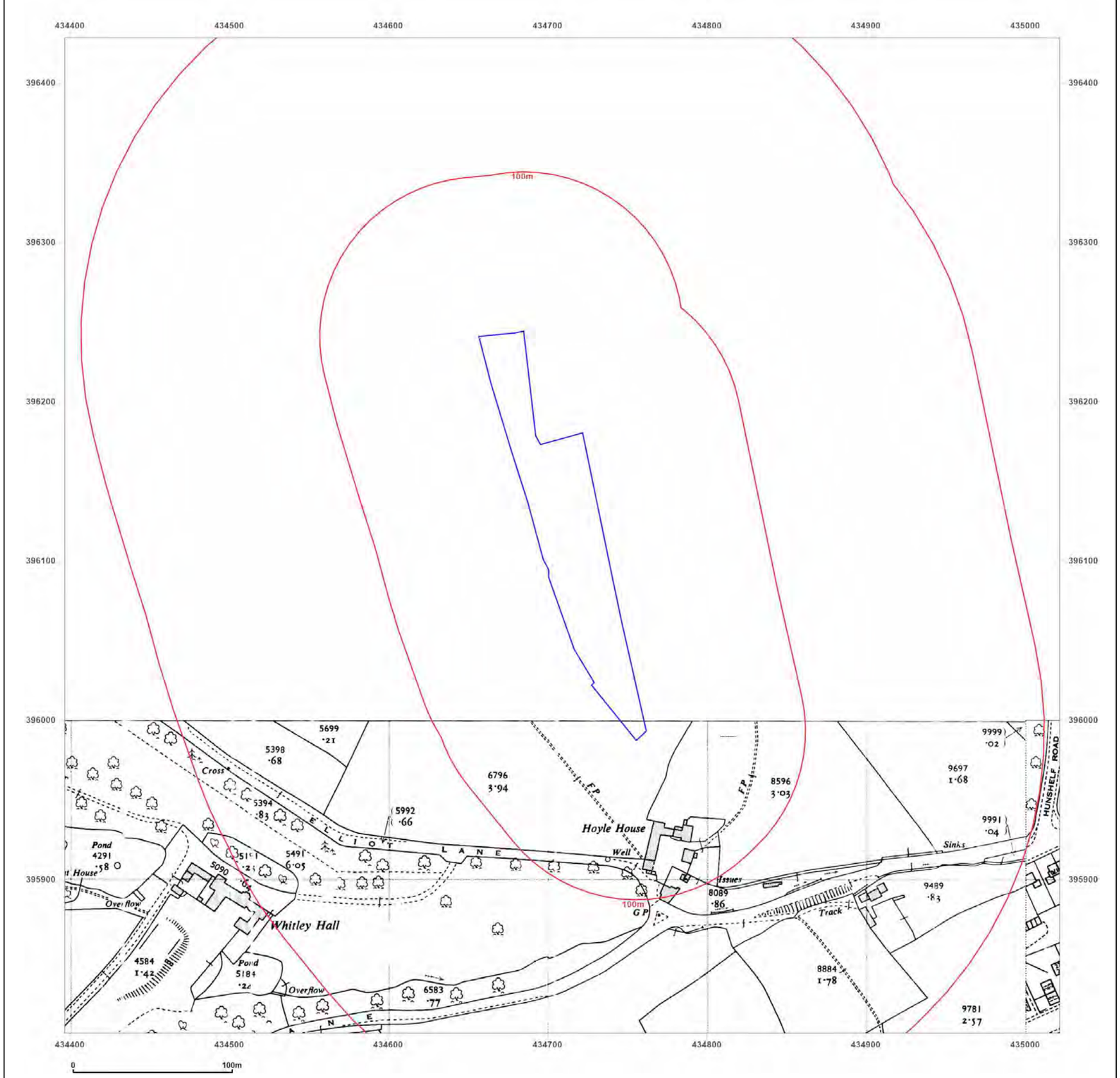

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1977**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed N/A
Revised N/A
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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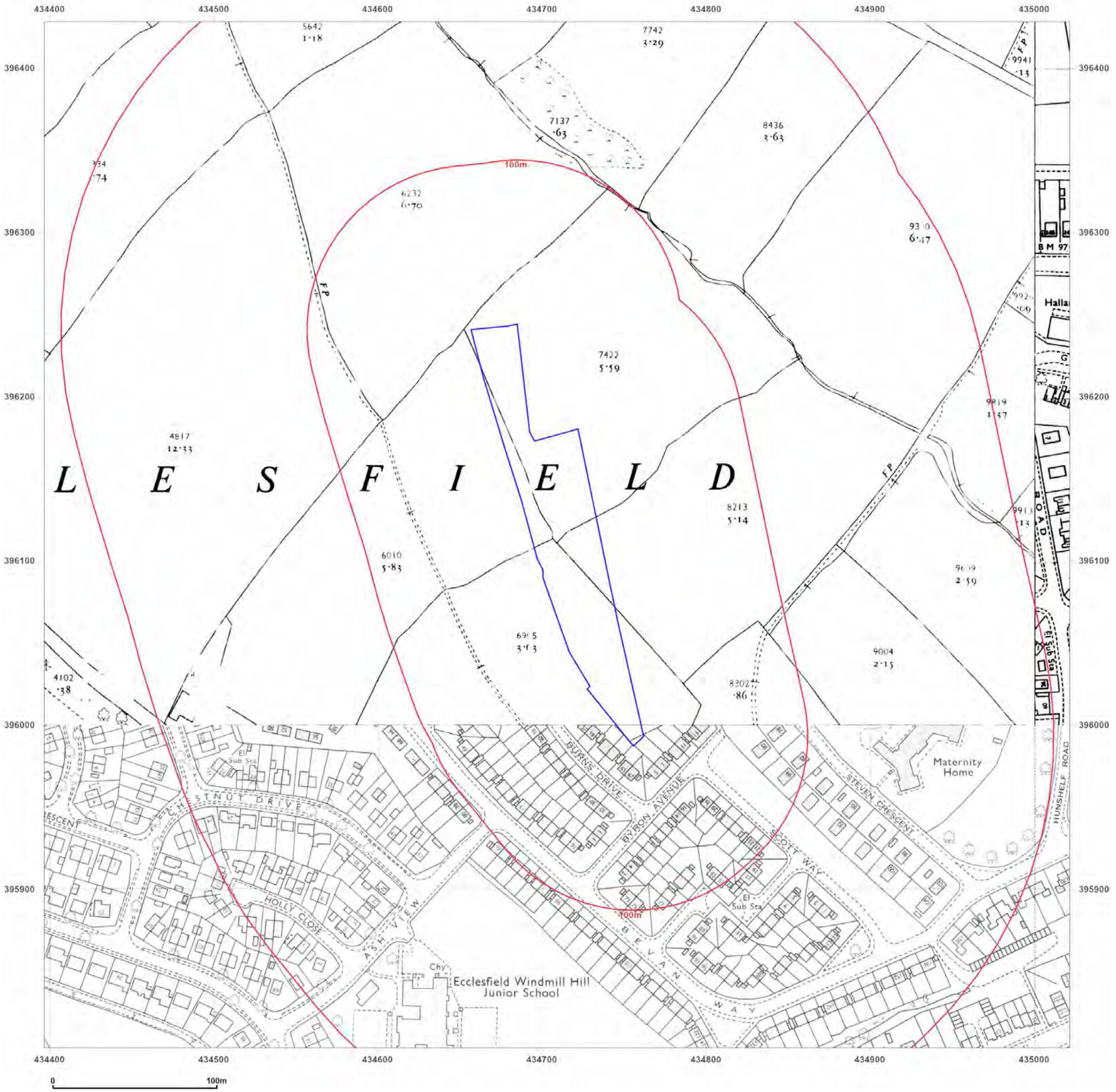

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1974-1978**

Scale: 1:2,500

Printed at: 1:2,500

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

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

Surveyed N/A
Revised N/A
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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Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid
Map date: **1980**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1979 Revised 1979 Edition N/A Copyright 1980 Levelled 1963	~~Surveyed 1979~~ Revised 1979 Edition N/A Copyright 1980 Levelled 1963
Surveyed 1979 Revised 1979 Edition N/A Copyright 1980 Levelled 1963	Surveyed 1979 Revised 1979 Edition N/A Copyright 1980 Levelled 1963

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Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1985-1990**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1963
Revised 1985
Edition N/A
Copyright 1985
Levelled 1963

Surveyed 1963
Revised 1988
Edition N/A
Copyright 1988
Levelled 1963

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

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Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid
Map date: **1990-1993**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1963 Revised 1990 Edition N/A Copyright 1990 Levelled 1963	~~Surveyed 1963~~ Revised 1990 Edition N/A Copyright 1990 Levelled 1963
Surveyed 1993 Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A

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Groundsure INSIGHTS

Site Details:

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Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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

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

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Groundsure INSIGHTS

Site Details:

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SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

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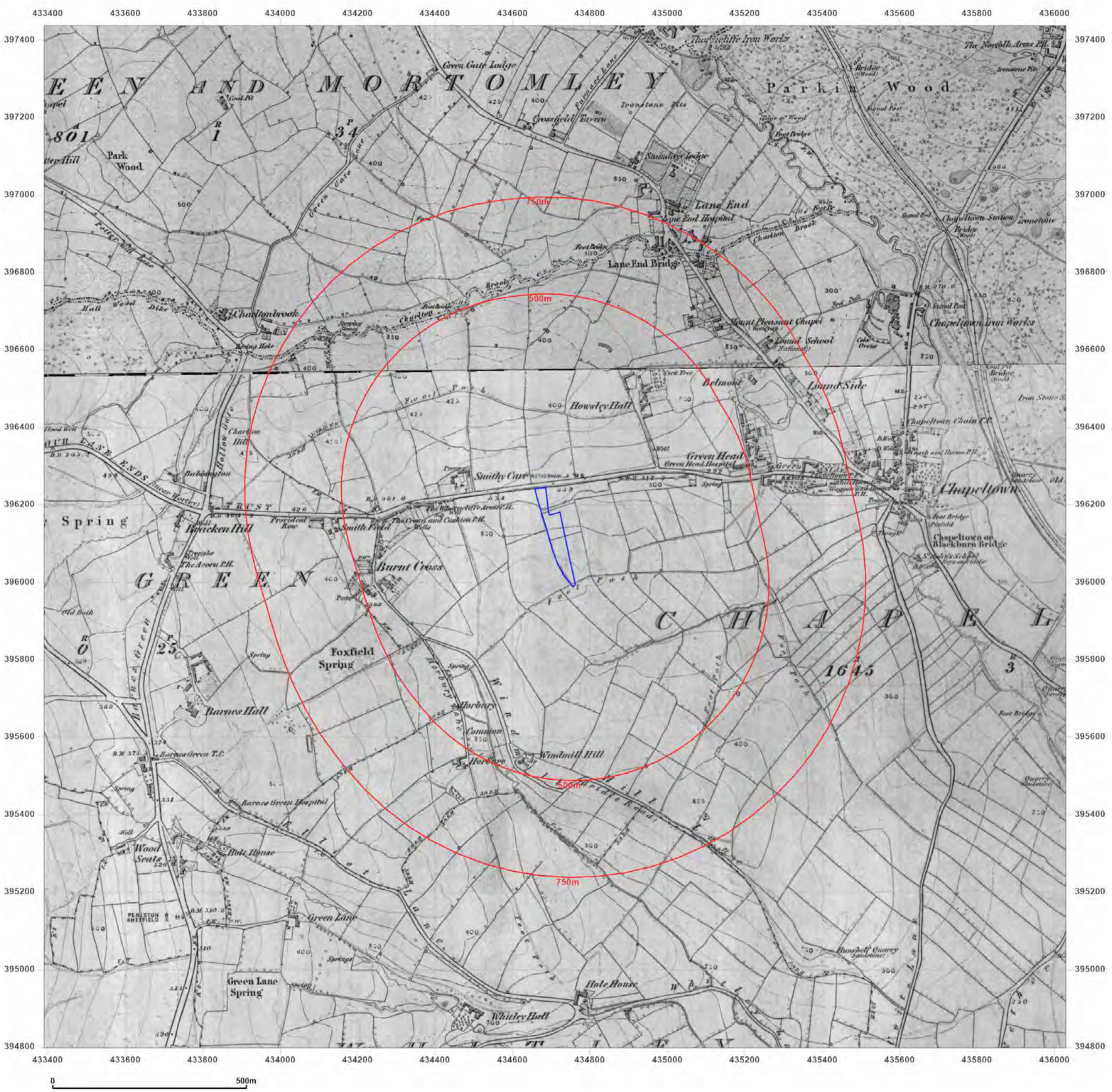

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: County Series

Map date: **1850-1855**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1851
Revised N/A
Edition 1855
Copyright N/A
Levelled N/A

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

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Production date: 20 November 2023

Map legend available at:
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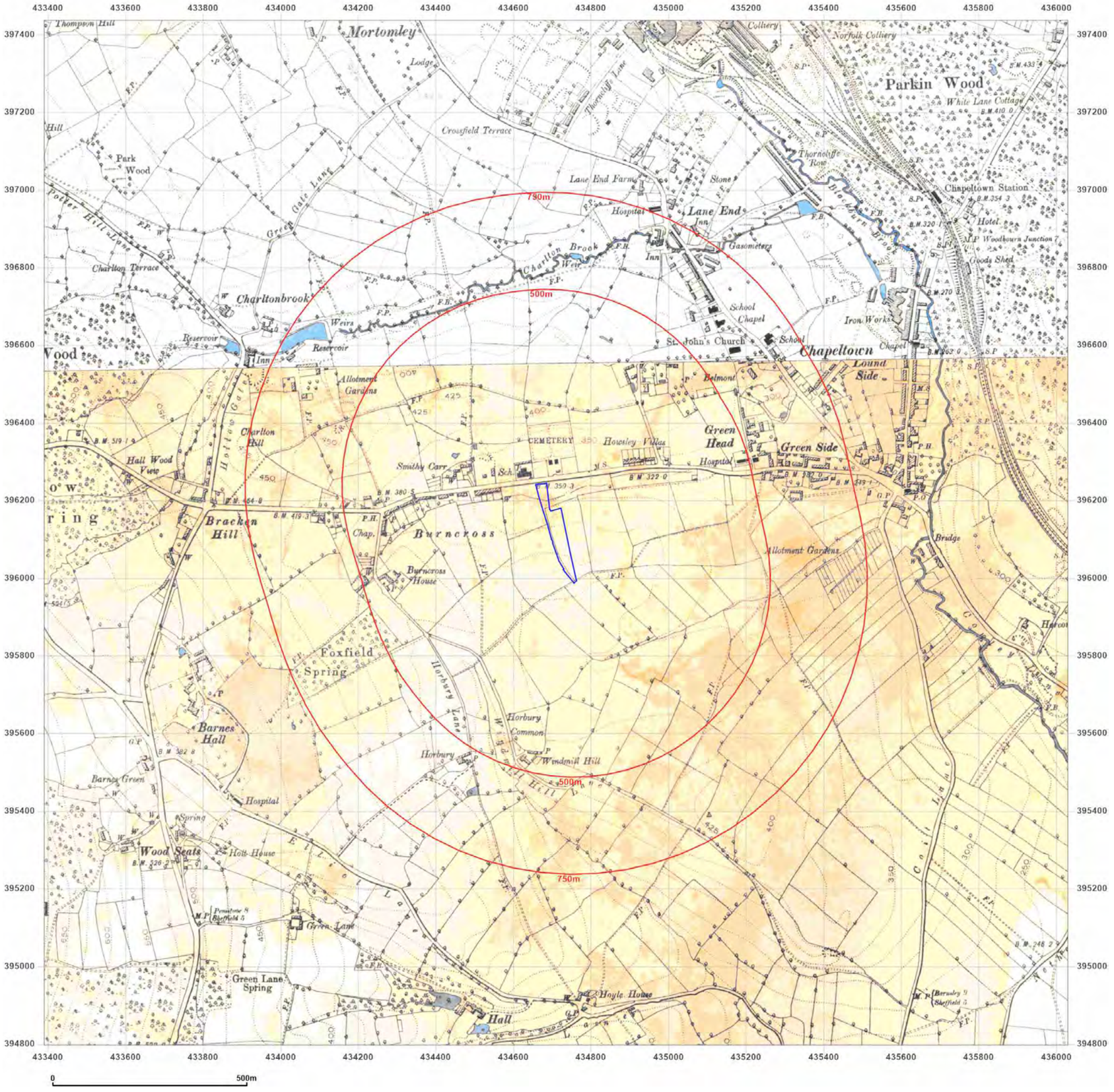

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: County Series

Map date: **1891-1894**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1891
Revised N/A
Edition 1894
Copyright N/A
Levelled N/A

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

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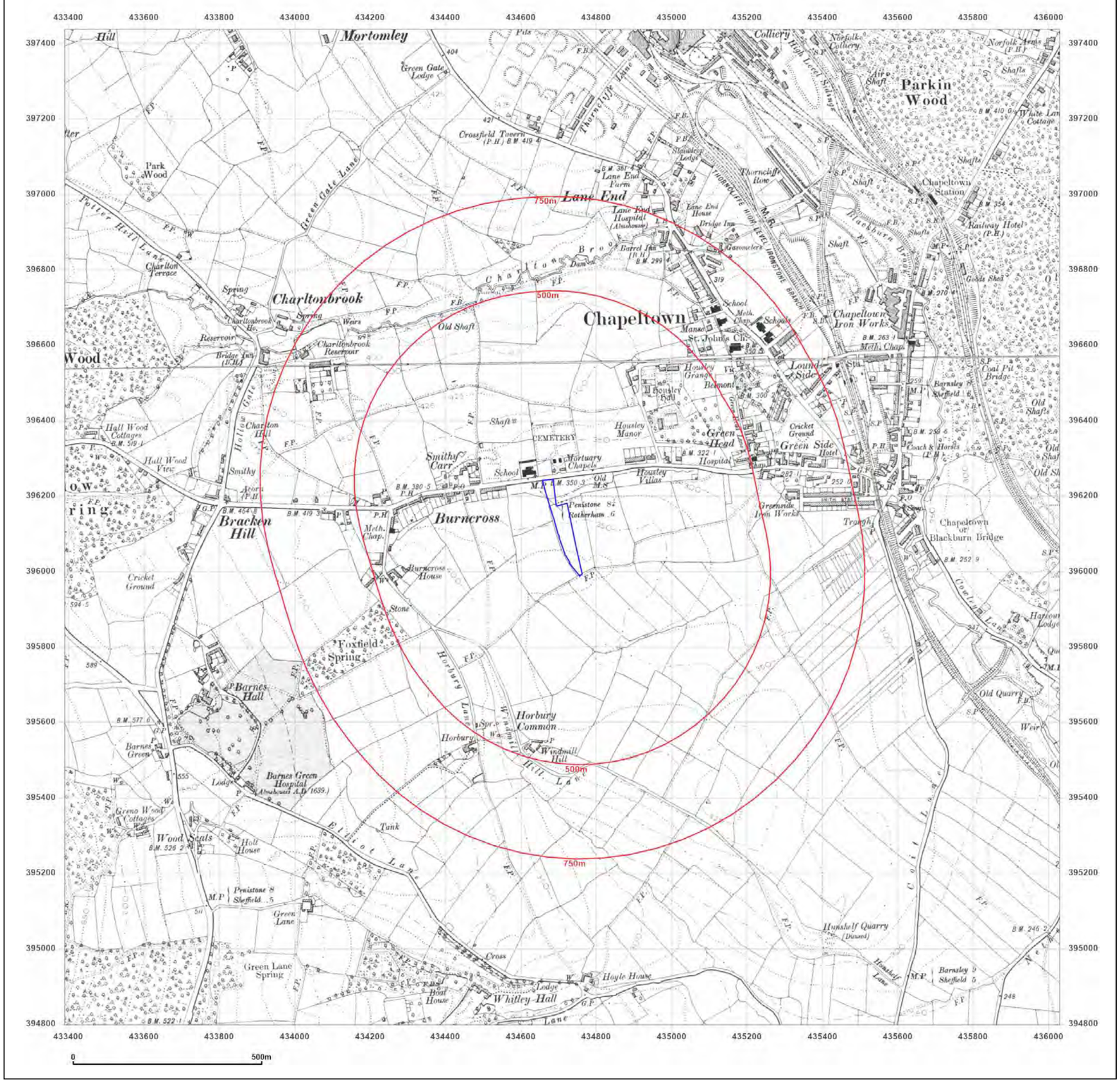

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: County Series

Map date: **1901-1903**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1891
Revised 1903
Edition 1903
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1901
Edition 1901
Copyright N/A
Levelled N/A

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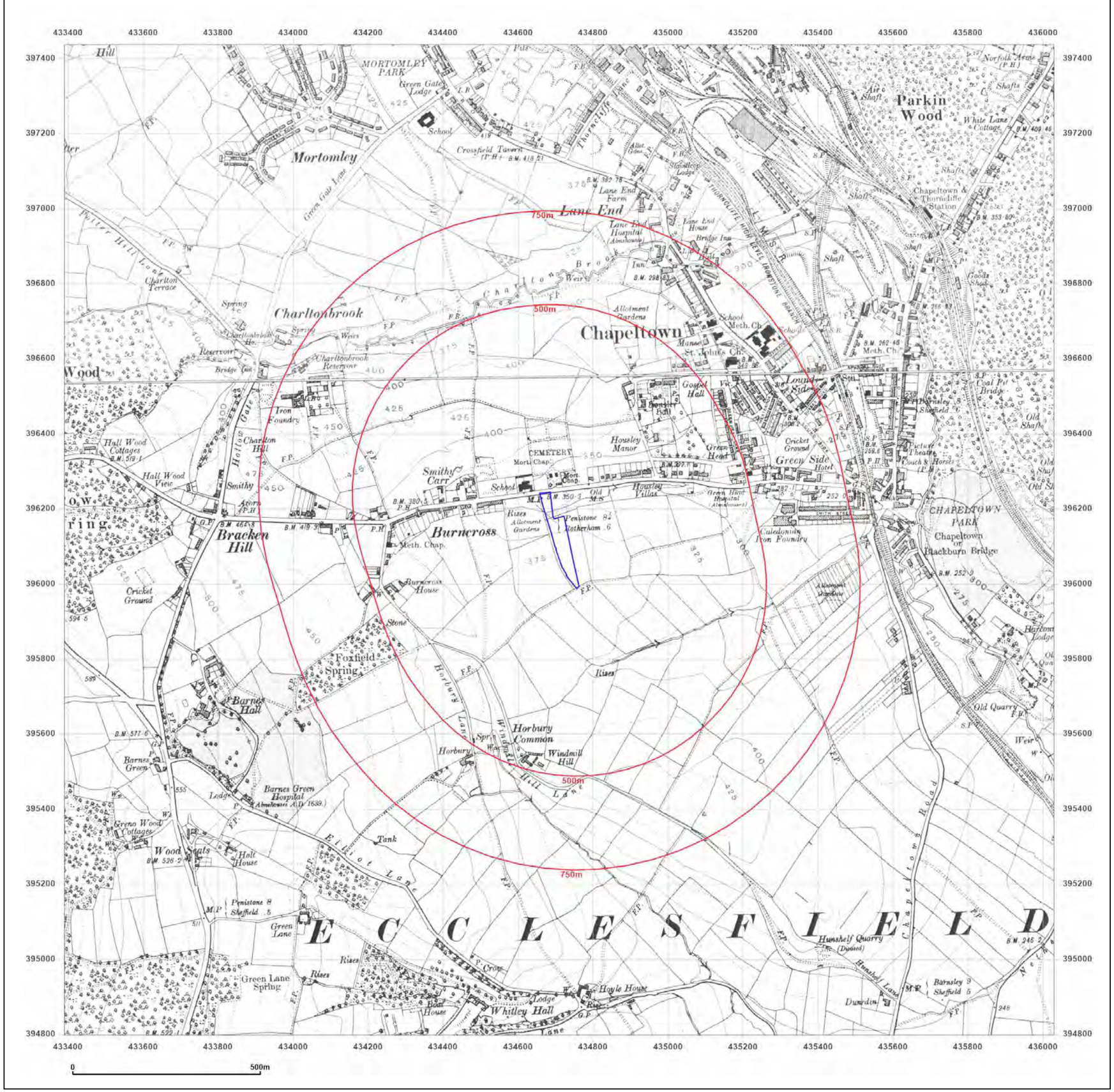

Groundsure INSIGHTS

Site Details:

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SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: County Series

Map date: **1924-1929**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1851
Revised 1929
Edition 1929
Copyright N/A
Levelled 1915

Surveyed 1851
Revised 1924
Edition 1924
Copyright N/A
Levelled 1915

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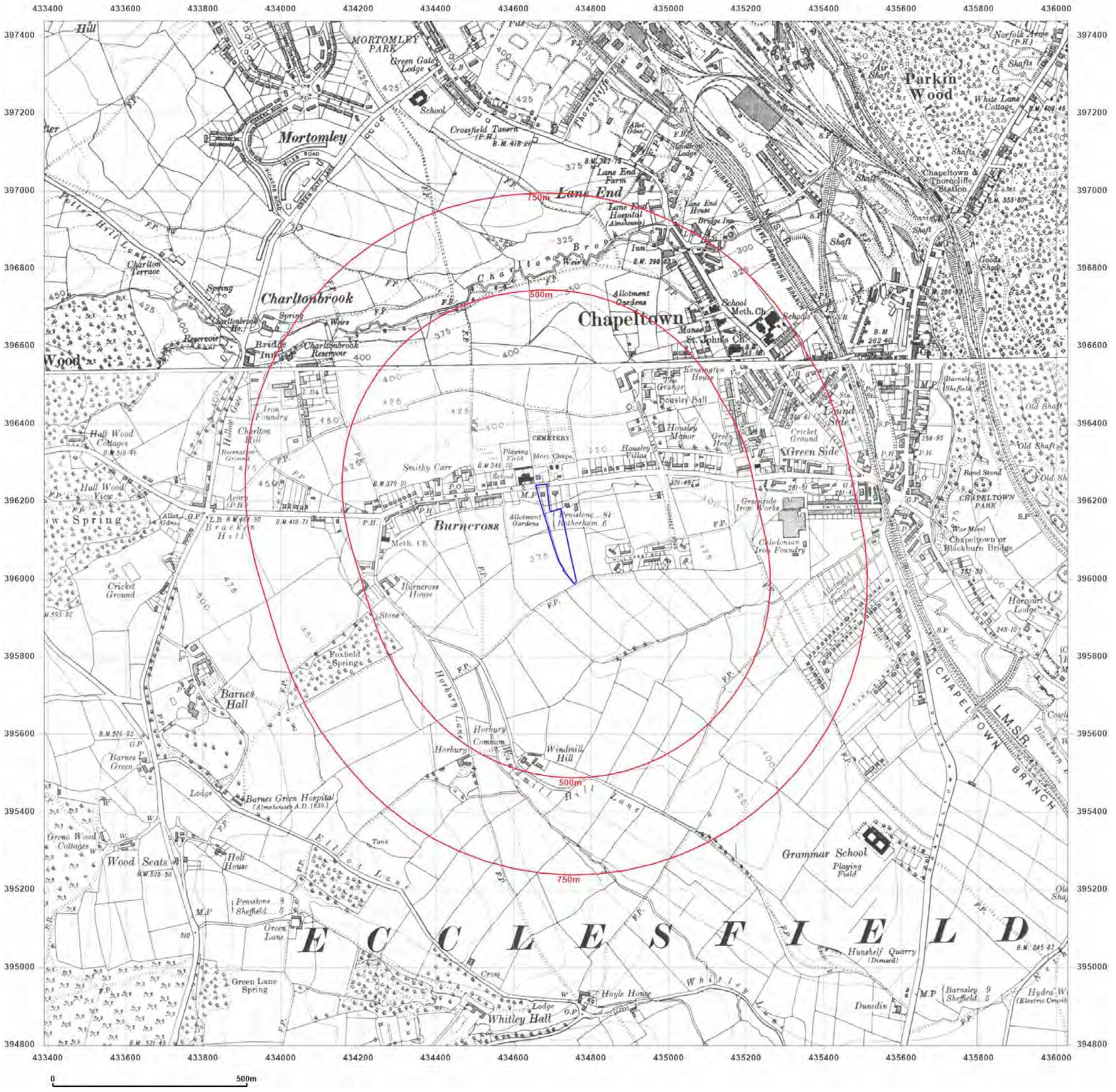

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: County Series

Map date: **1935-1938**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1851
Revised 1938
Edition 1938
Copyright N/A
Levelled 1929

Surveyed 1851
Revised 1935
Edition 1935
Copyright N/A
Levelled 1929

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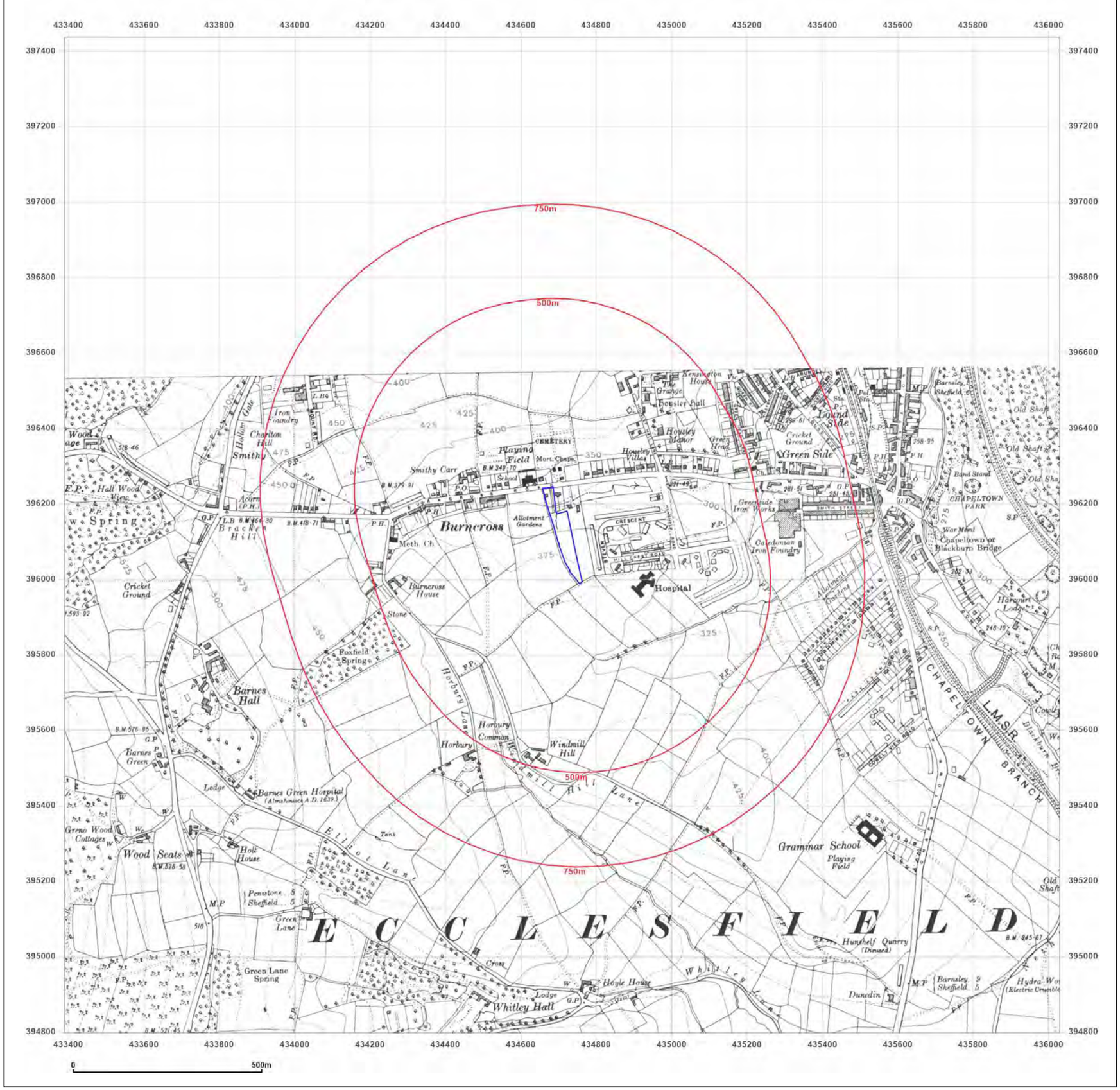

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1851
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

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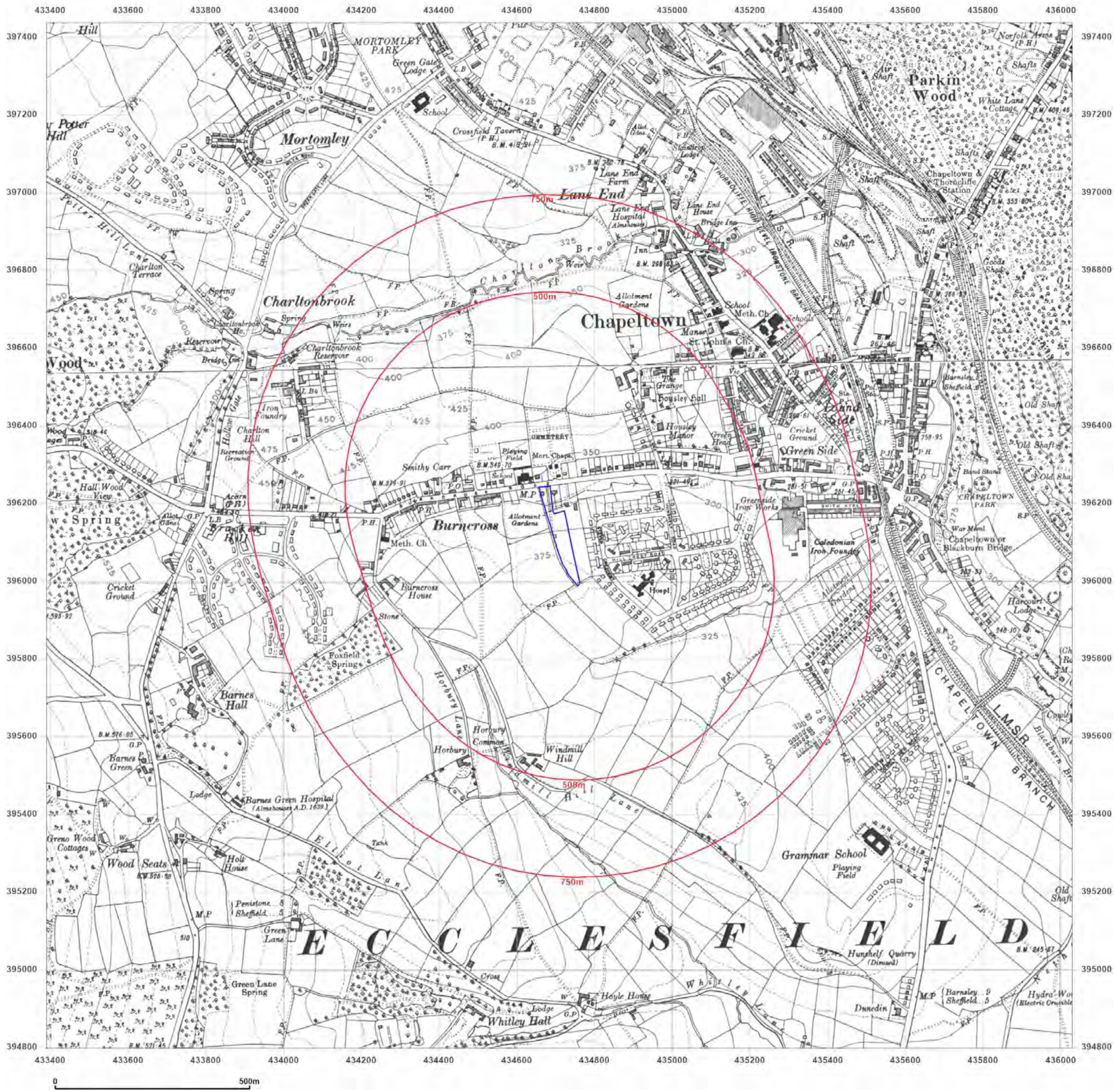

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: County Series

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1851
Revised 1948
Edition 1948
Copyright N/A
Levelled 1929

Surveyed 1851
Revised 1948
Edition 1948
Copyright N/A
Levelled N/A

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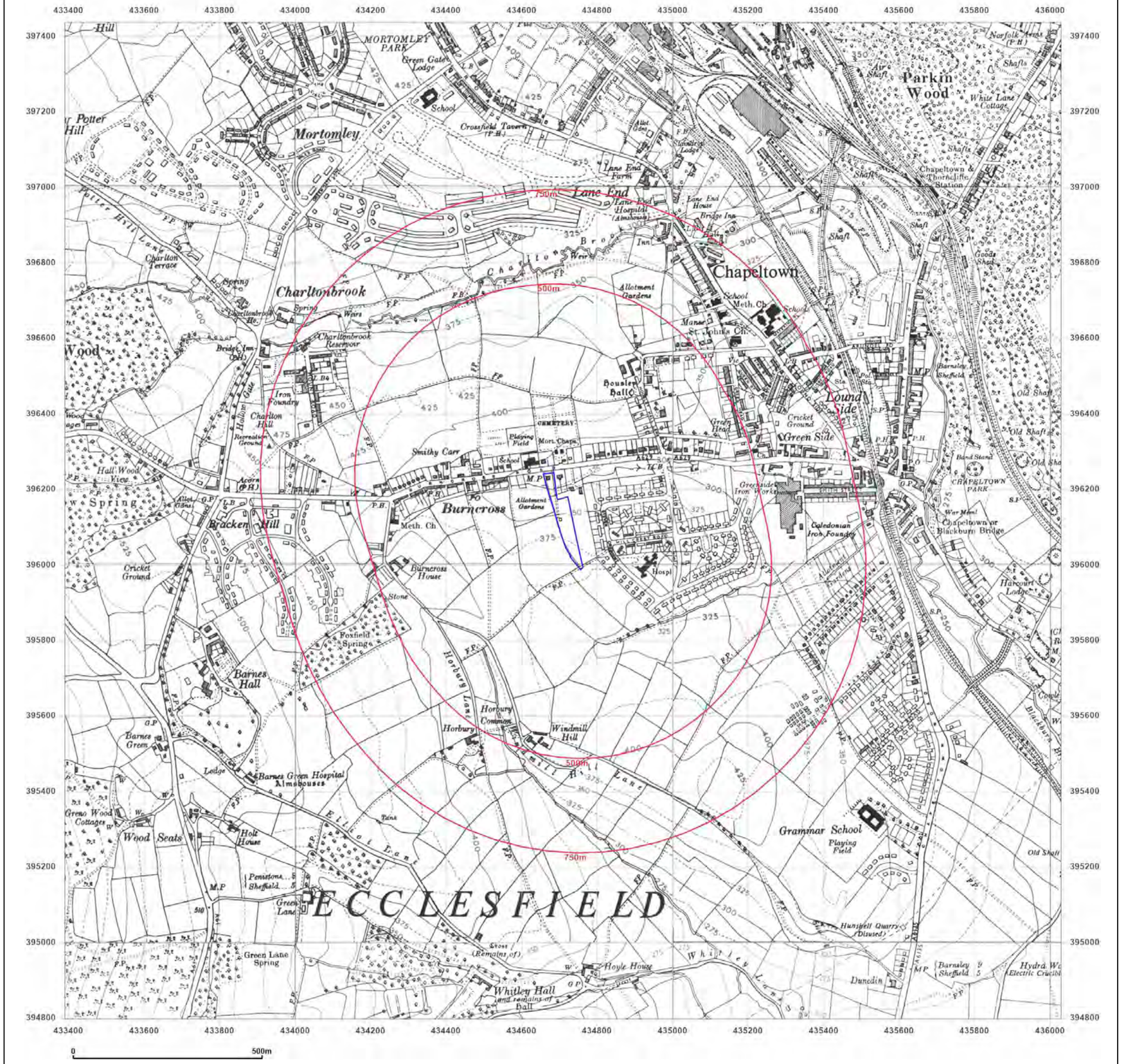

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: Provisional
Map date: **1951-1956**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1951
Revised 1951
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1951
Revised 1951
Edition N/A
Copyright 1951
Levelled N/A

Surveyed 1952
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

Surveyed 1951
Revised 1951
Edition N/A
Copyright 1951
Levelled N/A

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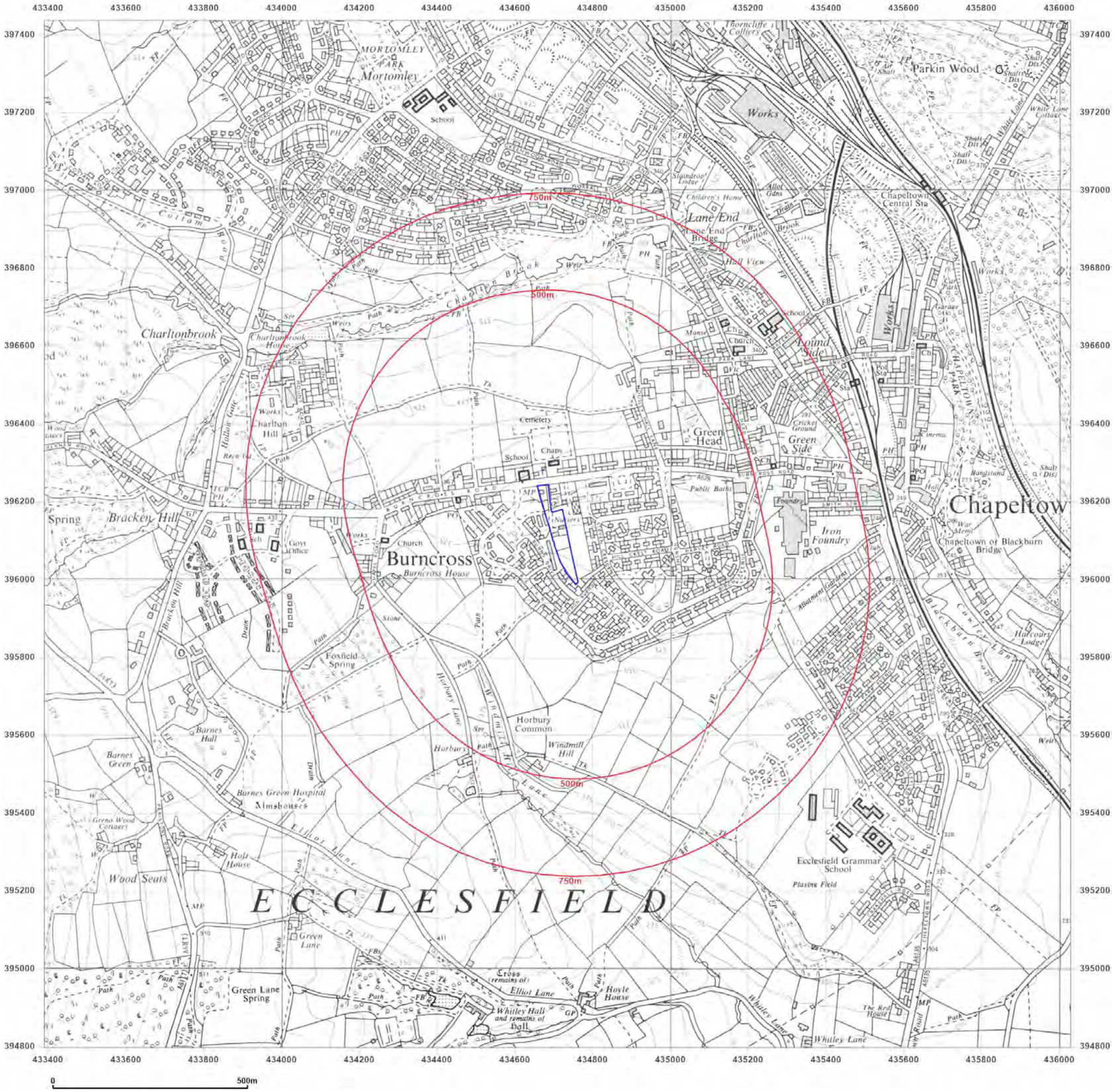

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: Provisional
Map date: **1965-1967**
Scale: 1:10,560
Printed at: 1:10,560

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

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

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

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

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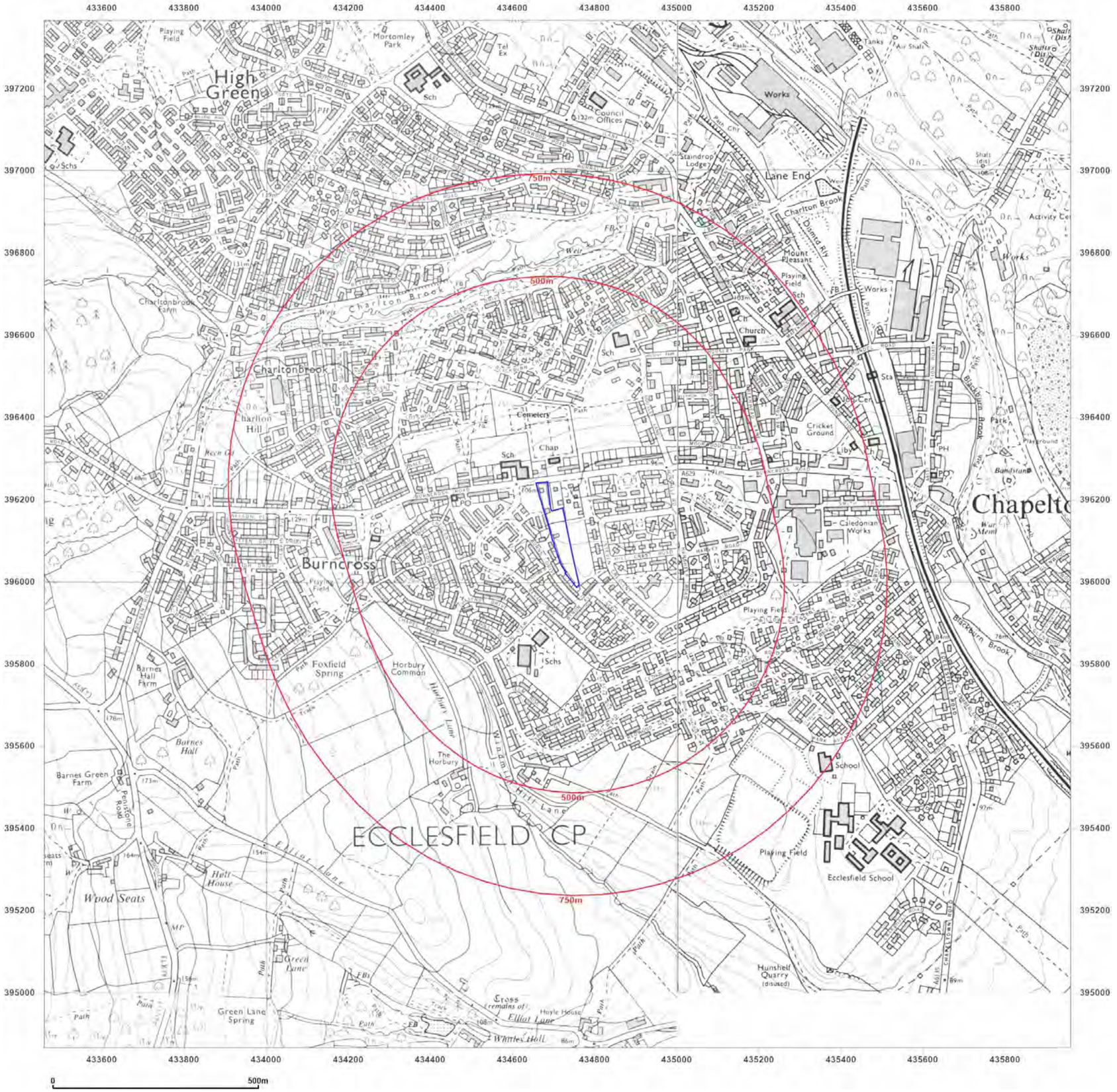

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1980-1981**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1980
Revised 1980
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1979
Revised 1980
Edition N/A
Copyright 1980
Levelled 1981

Surveyed 1980
Revised 1981
Edition N/A
Copyright N/A
Levelled N/A

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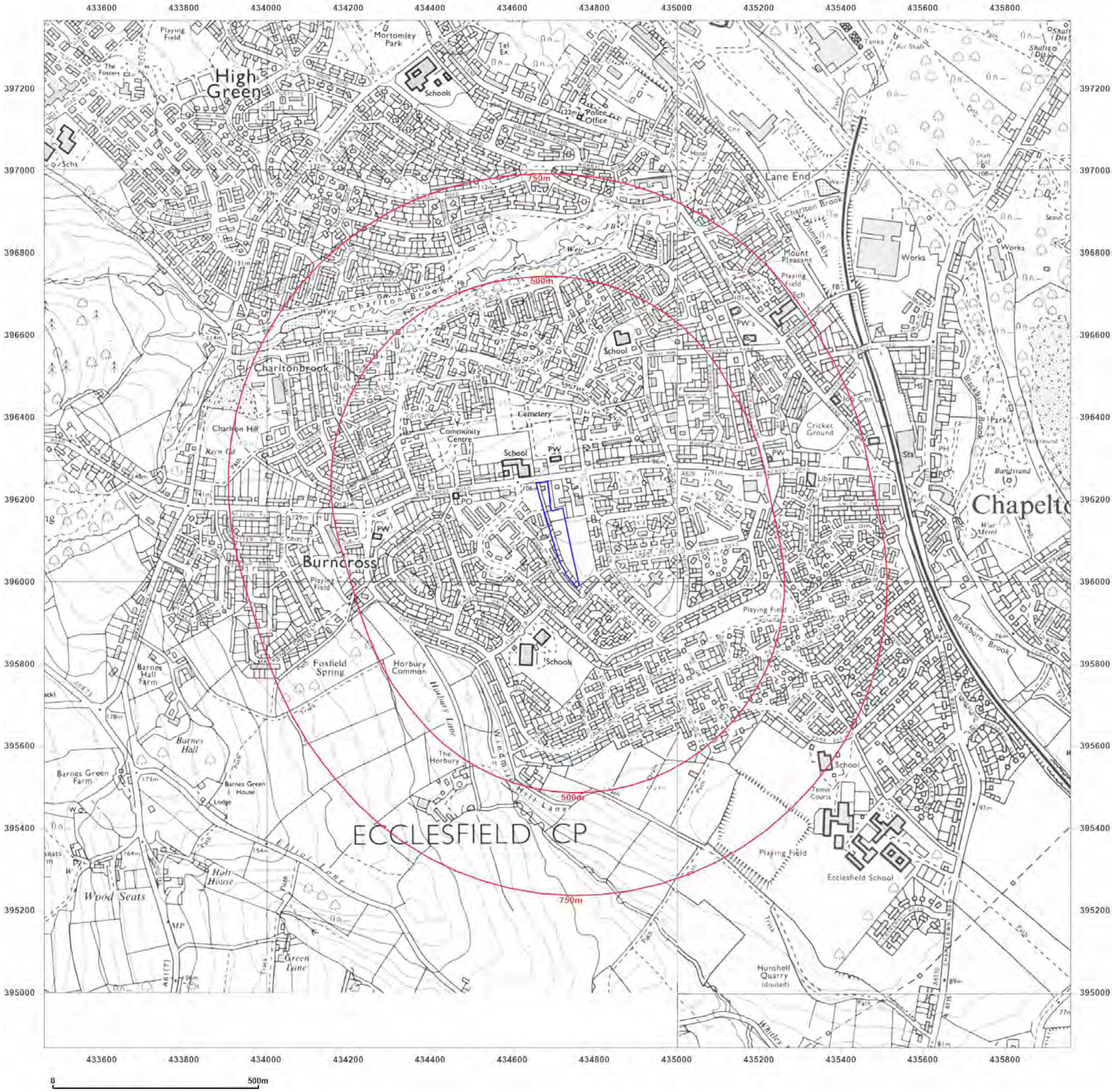

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **1991-1995**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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Surveyed 1991
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1989
Revised 1991
Edition N/A
Copyright 1991
Levelled 1981

Surveyed 1985
Revised 1995
Edition N/A
Copyright 1995
Levelled 1981

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Site Details:

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SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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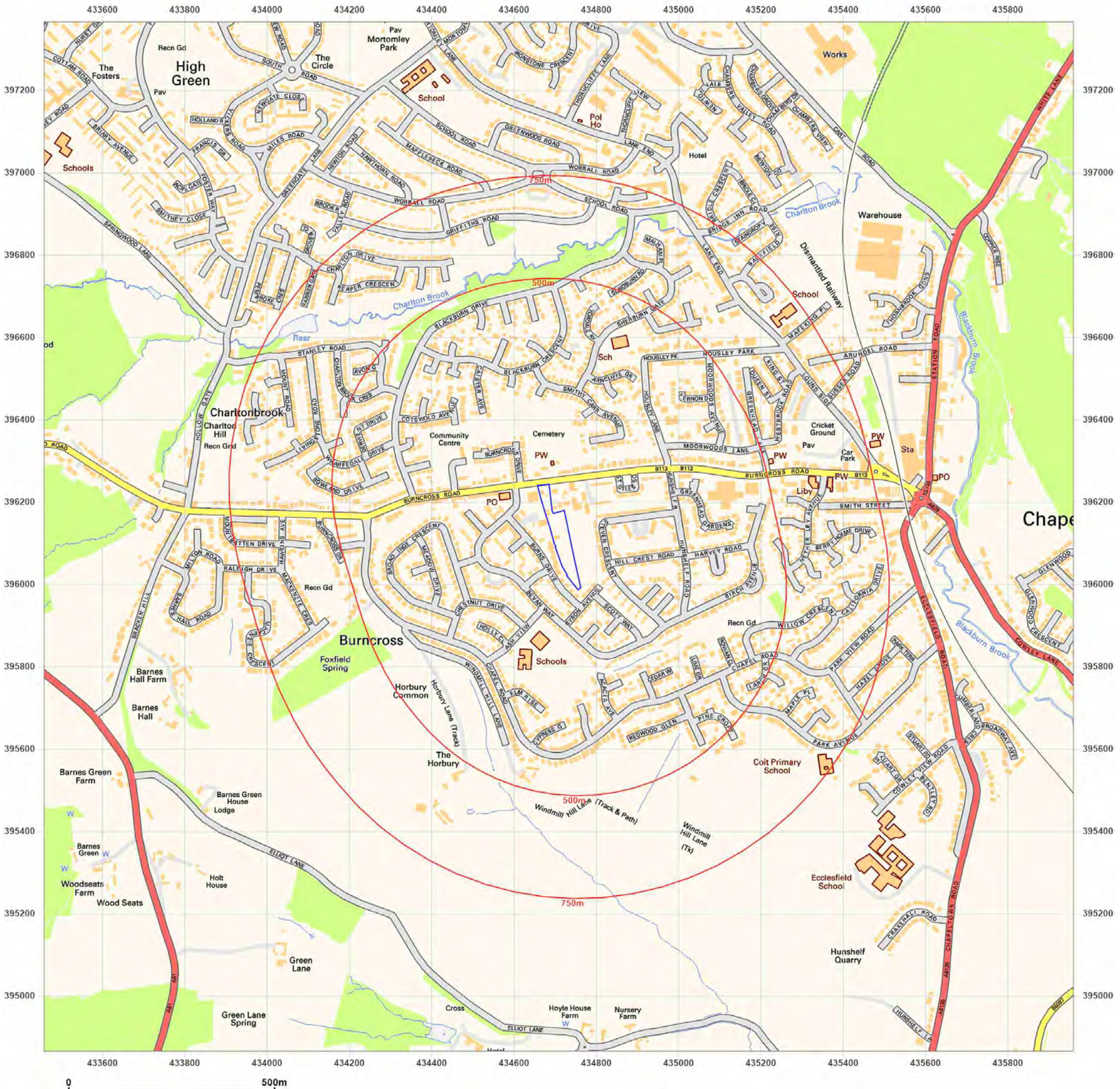

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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Production date: 20 November 2023

Map legend available at:
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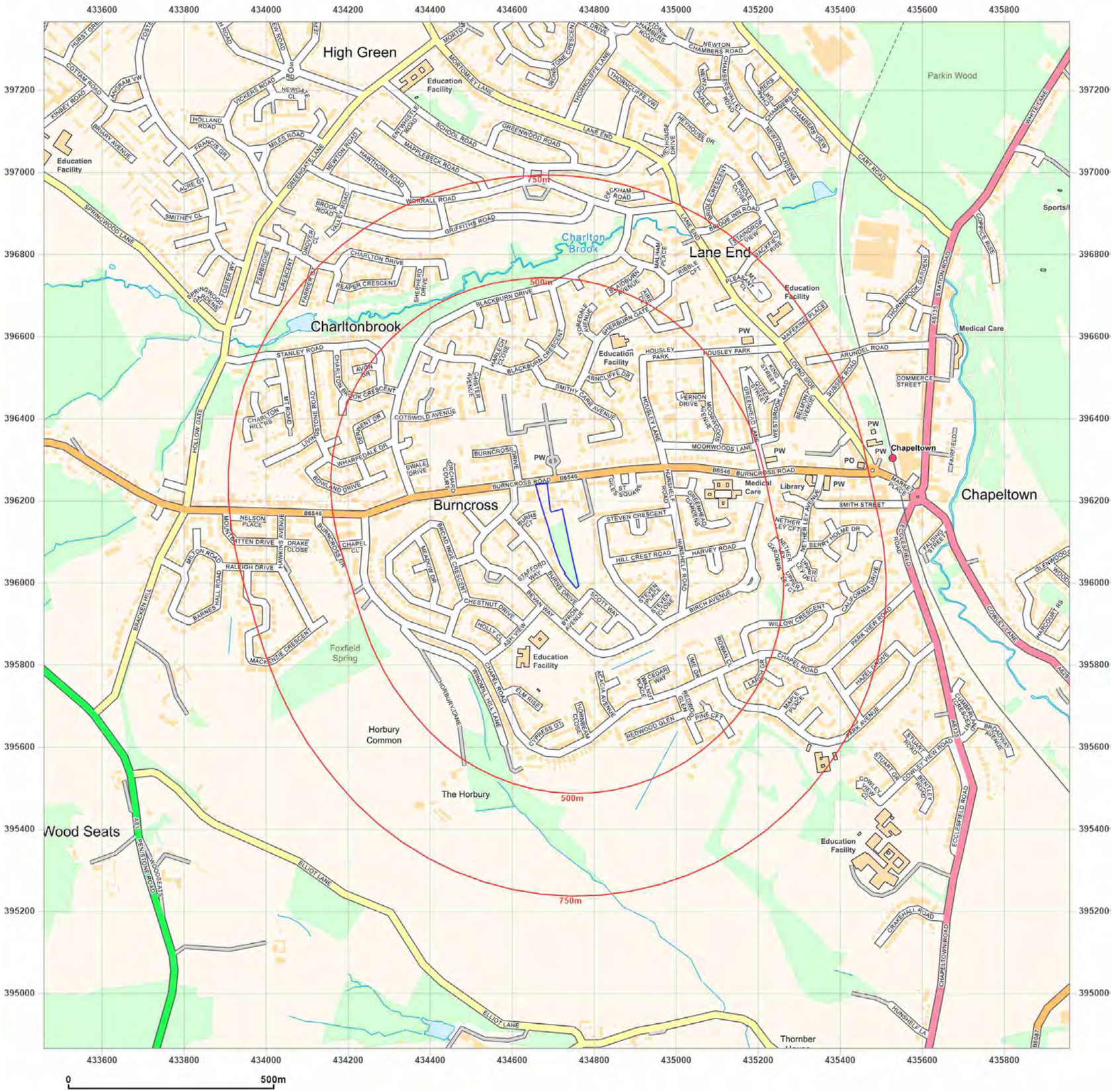

Groundsure INSIGHTS

Site Details:

241, BURNCROSS ROAD,
SHEFFIELD, S35 1RZ

Client Ref: 23FRT016_-_BG5203
Report Ref: GS-QQG-NWQ-XA9-HYD
Grid Ref: 434709, 396116

Map Name: National Grid
Map date: 2023
Scale: 1:10,000
Printed at: 1:10,000

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Production date: 20 November 2023

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

APPENDIX C

(i) Groundsure Report

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

241, BURNCROSS ROAD, SHEFFIELD, S35 1RZ

Order Details

Date: 20/11/2023

Your ref: 23FRT016_-_BG5203

Our Ref: GS-SKV-YPH-8GR-DQP

Site Details

Location: 434693 396161

Area: 0.83 ha

Authority: Sheffield City Council ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

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	5	7	12	-
17 >	1.2 >	Historical tanks >	0	0	0	1	-
17 >	1.3 >	Historical energy features >	0	3	12	14	-
18	1.4	Historical petrol stations	0	0	0	0	-
19	1.5	Historical garages	0	0	0	0	-
19	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
20 >	2.1 >	Historical industrial land uses >	1	9	8	13	-
22 >	2.2 >	Historical tanks >	0	0	0	1	-
22 >	2.3 >	Historical energy features >	0	8	32	35	-
25	2.4	Historical petrol stations	0	0	0	0	-
25	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
26	3.1	Active or recent landfill	0	0	0	0	-
26	3.2	Historical landfill (BGS records)	0	0	0	0	-
27 >	3.3 >	Historical landfill (LA/mapping records) >	0	0	0	1	-
27	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
27	3.5	Historical waste sites	0	0	0	0	-
27	3.6	Licensed waste sites	0	0	0	0	-
27 >	3.7 >	Waste exemptions >	0	0	0	2	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
29 >	4.1 >	Recent industrial land uses >	0	2	6	-	-
30 >	4.2 >	Current or recent petrol stations >	0	1	0	0	-
30	4.3	Electricity cables	0	0	0	0	-
31	4.4	Gas pipelines	0	0	0	0	-
31	4.5	Sites determined as Contaminated Land	0	0	0	0	-

31	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
31	4.7	Regulated explosive sites	0	0	0	0	-
31	4.8	Hazardous substance storage/usage	0	0	0	0	-
32	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
32	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
32 >	**4.11 >**	**Licensed pollutant release (Part A(2)/B) >**	0	0	2	1	-
33	4.12	Radioactive Substance Authorisations	0	0	0	0	-
33	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
33	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
33	4.15	Pollutant release to public sewer	0	0	0	0	-
33	4.16	List 1 Dangerous Substances	0	0	0	0	-
34	4.17	List 2 Dangerous Substances	0	0	0	0	-
34	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
34	4.19	Pollution inventory substances	0	0	0	0	-
34	4.20	Pollution inventory waste transfers	0	0	0	0	-
34	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
35	5.1	Superficial aquifer	None (within 500m)				
36 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
38 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
39	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
39	5.5	Groundwater vulnerability- local information	None (within 0m)				
40 >	**5.6 >**	**Groundwater abstractions >**	0	0	0	0	13
44 >	**5.7 >**	**Surface water abstractions >**	0	0	0	0	5
45 >	**5.8 >**	**Potable abstractions >**	0	0	0	0	1
46	5.9	Source Protection Zones	0	0	0	0	-
46	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m
47 >	**6.1 >**	**Water Network (OS MasterMap) >**	0	0	2	-	-

48 >	6.2 >	Surface water features >	0	0	1	-	-
48 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
48 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
49 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
50	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
50	7.2	Historical Flood Events	0	0	0	-	-
50	7.3	Flood Defences	0	0	0	-	-
51	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
51	7.5	Flood Storage Areas	0	0	0	-	-
52	7.6	Flood Zone 2	None (within 50m)				
52	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding >	
53 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding >	
55 >	9.1 >	Groundwater flooding >	Negligible (within 50m)

Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
56	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
57	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
57	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
57	10.4	Special Protection Areas (SPA)	0	0	0	0	0
57	10.5	National Nature Reserves (NNR)	0	0	0	0	0
58	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
58 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	20
59	10.8	Biosphere Reserves	0	0	0	0	0
59	10.9	Forest Parks	0	0	0	0	0
59	10.10	Marine Conservation Zones	0	0	0	0	0
59 >	10.11 >	Green Belt >	0	0	0	1	6
60	10.12	Proposed Ramsar sites	0	0	0	0	0

60	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
60	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
61	10.15	Nitrate Sensitive Areas	0	0	0	0	0
61 >	**10.16 >**	**Nitrate Vulnerable Zones >**	1	1	0	0	3
62 >	**10.17 >**	**SSSI Impact Risk Zones >**	2	-	-	-	-
63	10.18	SSSI Units	0	0	0	0	0
Page	Section	**Visual and cultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
64	11.1	World Heritage Sites	0	0	0	-	-
65	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
65	11.3	National Parks	0	0	0	-	-
65 >	**11.4 >**	**Listed Buildings >**	0	1	0	-	-
66	11.5	Conservation Areas	0	0	0	-	-
66	11.6	Scheduled Ancient Monuments	0	0	0	-	-
66	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
67 >	**12.1 >**	**Agricultural Land Classification >**	Grade 3 (within 250m)				
68	12.2	Open Access Land	0	0	0	-	-
68	12.3	Tree Felling Licences	0	0	0	-	-
68	12.4	Environmental Stewardship Schemes	0	0	0	-	-
68	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	**Habitat designations >**	On site	0-50m	50-250m	250-500m	500-2000m
69 >	**13.1 >**	**Priority Habitat Inventory >**	0	0	2	-	-
70	13.2	Habitat Networks	0	0	0	-	-
70	13.3	Open Mosaic Habitat	0	0	0	-	-
70	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
71 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
72 >	**14.2 >**	**Artificial and made ground (10k) >**	0	0	1	3	-
74	14.3	Superficial geology (10k)	0	0	0	0	-

74	14.4	Landslip (10k)	0	0	0	0	-
75 >	14.5 >	Bedrock geology (10k) >	3	1	12	17	-
77 >	14.6 >	Bedrock faults and other linear features (10k) >	1	1	4	10	-
Page	Section	**Geology 1:50,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
79 >	15.1 >	50k Availability >	Identified (within 500m)				
80 >	15.2 >	Artificial and made ground (50k) >	0	0	1	1	-
81	15.3	Artificial ground permeability (50k)	0	0	-	-	-
82	15.4	Superficial geology (50k)	0	0	0	0	-
82	15.5	Superficial permeability (50k)	None (within 50m)				
82	15.6	Landslip (50k)	0	0	0	0	-
82	15.7	Landslip permeability (50k)	None (within 50m)				
83 >	15.8 >	Bedrock geology (50k) >	3	1	6	7	-
84 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
85 >	15.10 >	Bedrock faults and other linear features (50k) >	1	0	6	4	-
Page	Section	**Boreholes >**	On site	0-50m	50-250m	250-500m	500-2000m
86 >	16.1 >	BGS Boreholes >	0	0	8	-	-
Page	Section	**Natural ground subsidence >**					
88 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
90 >	17.2 >	Running sands >	Negligible (within 50m)				
91 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
92 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
93 >	17.5 >	Landslides >	Very low (within 50m)				
94 >	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
96	18.1	BritPits	0	0	0	0	-
97 >	18.2 >	Surface ground workings >	0	9	4	-	-
97 >	18.3 >	Underground workings >	0	0	1	1	11
98	18.4	Underground mining extents	0	0	0	0	-
98	18.5	Historical Mineral Planning Areas	0	0	0	0	-

99	18.6	Non-coal mining	0	0	0	0	0
99	18.7	JPB mining areas	None (within 0m)				
99	18.8	The Coal Authority non-coal mining	0	0	0	0	-
99 >	**18.9 >**	**Researched mining >**	0	0	1	0	-
100	18.10	Mining record office plans	0	0	0	0	-
100	18.11	BGS mine plans	0	0	0	0	-
100 >	**18.12 >**	**Coal mining >**	Identified (within 0m)				
100	18.13	Brine areas	None (within 0m)				
101	18.14	Gypsum areas	None (within 0m)				
101	18.15	Tin mining	None (within 0m)				
101	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
102	19.1	Natural cavities	0	0	0	0	-
102	19.2	Mining cavities	0	0	0	0	0
102	19.3	Reported recent incidents	0	0	0	0	-
102	19.4	Historical incidents	0	0	0	0	-
103	19.5	National karst database	0	0	0	0	-
Page	Section	**Radon >**					
104 >	**20.1 >**	**Radon >**	Less than 1% (within 0m)				
Page	Section	**Soil chemistry >**	On site	0-50m	50-250m	250-500m	500-2000m
106 >	**21.1 >**	**BGS Estimated Background Soil Chemistry >**	5	7	-	-	-
107	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
107	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
108	22.1	Underground railways (London)	0	0	0	-	-
108	22.2	Underground railways (Non-London)	0	0	0	-	-
108	22.3	Railway tunnels	0	0	0	-	-
108	22.4	Historical railway and tunnel features	0	0	0	-	-
108	22.5	Royal Mail tunnels	0	0	0	-	-

109	22.6	Historical railways	0	0	0	-	-
109	22.7	Railways	0	0	0	-	-
109	22.8	Crossrail 1	0	0	0	0	-
109	22.9	Crossrail 2	0	0	0	0	-
109	22.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 19/04/2021

Site Area: 0.83ha

Recent site history - 2018 aerial photograph

Capture Date: 30/06/2018

Site Area: 0.83ha

Recent site history - 2012 aerial photograph

Capture Date: 28/05/2012

Site Area: 0.83ha

Recent site history - 2009 aerial photograph

Capture Date: 11/09/2009

Site Area: 0.83ha

Recent site history - 1999 aerial photograph

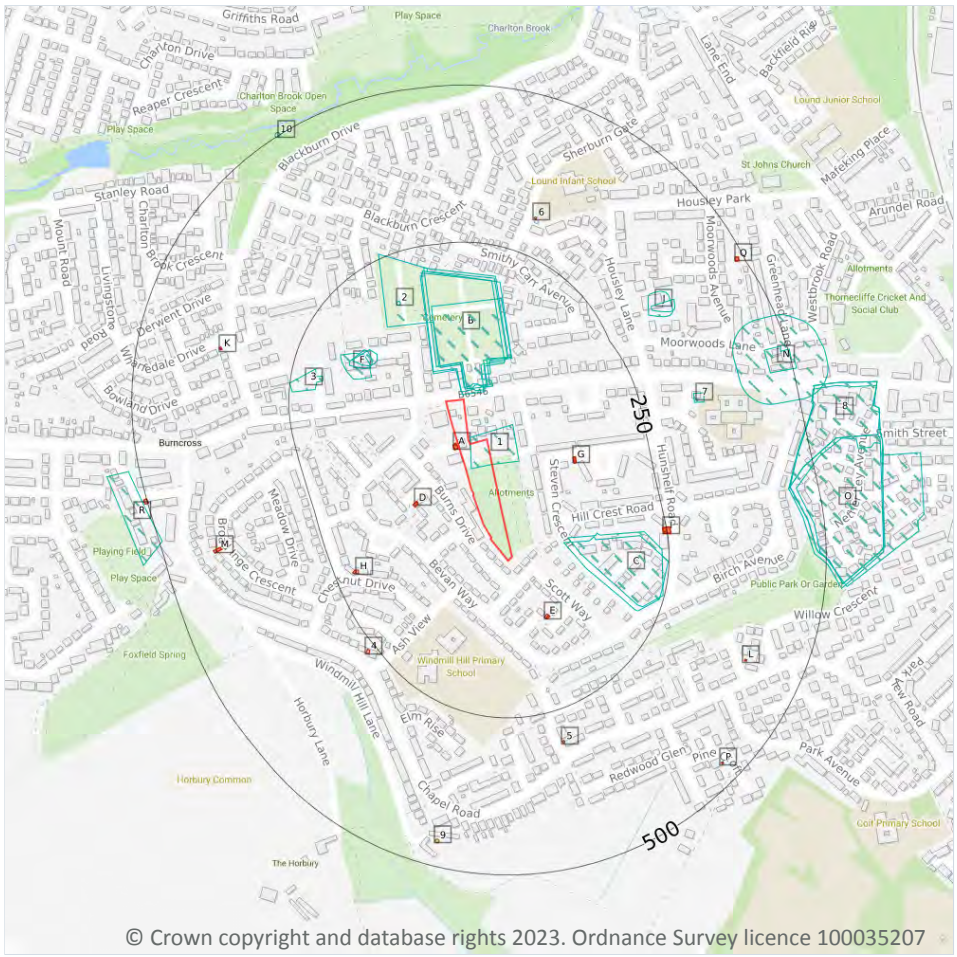
Capture Date: 17/11/1999

Site Area: 0.83ha

OS MasterMap site plan

Site Area: 0.83ha

1 Past land use



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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	25

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**	**Nursery**	**1966**	**1599827**

ID	Location	Land use	Dates present	Group ID
B	7m N	Cemetery	1924	1636920
B	13m N	Cemetery	1948	1743038
B	16m N	Cemetery	1992	1680886
B	18m N	Cemetery	1891 - 1901	1645950
B	19m N	Cemetery	1951 - 1980	1714321
C	85m SE	Hospital	1948	1740702
C	94m SE	Hospital	1951	1645973
F	125m NW	Unspecified Ground Workings	1924	1565909
F	127m NW	Unspecified Heap	1891 - 1901	1649846
F	132m NW	Unspecified Heap	1924	1649850
2	170m NW	Unspecified Shaft	1901	1579083
3	199m NW	Smithy	1951	1612701
J	323m NE	Unspecified Ground Workings	1924	1565926
J	332m NE	Unspecified Heap	1924	1569114
7	335m E	Hospital	1924	1602945
N	413m NE	Hospital	1924	1703240
8	453m E	Iron Works	1948	1746674
O	453m E	Iron Foundry	1948	1745054
O	456m E	Unspecified Foundry	1965	1574710
O	456m E	Iron Works	1951	1665777
N	463m E	Hospital	1891 - 1901	1673514
O	465m E	Unspecified Works	1980	1598448
R	495m W	Unspecified Works	1966	1598447
10	498m NW	Unspecified Old Shaft	1903	1571527

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	1

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 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
9	457m S	Unspecified Tank	1975	253895

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	29

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 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
A	2m NW	Gas Governor	1988 - 1999	165703
A	2m NW	Gas Governor	1980	151001
A	3m NW	Electricity Substation	1973	148582
D	87m W	Electricity Substation	1973	166527
D	88m W	Electricity Substation	1980 - 1999	161168
E	105m SE	Electricity Substation	1990	161314
E	108m SE	Electricity Substation	1970 - 1975	161077
G	128m E	Electricity Substation	1988 - 1999	163501
G	129m E	Electricity Substation	1973 - 1980	157950
H	212m SW	Electricity Substation	1970 - 1975	166820

ID	Location	Land use	Dates present	Group ID
H	215m SW	Electricity Substation	1990	153727
I	244m E	Electricity Substation	1996 - 1997	161325
I	244m E	Electricity Substation	1980 - 1990	163924
I	244m E	Electricity Substation	1985 - 1988	151409
I	245m E	Electricity Substation	1973	166279
4	261m SW	Electricity Substation	1970 - 1990	165956
5	299m S	Electricity Substation	1975 - 1990	167859
6	308m N	Electricity Substation	1990	148581
K	366m NW	Electricity Substation	1985 - 1990	163319
K	367m NW	Electricity Substation	1973 - 1995	161815
L	405m SE	Electricity Substation	1990	160278
L	405m SE	Electricity Substation	1980	160158
M	407m W	Electricity Substation	1985 - 1990	154667
M	409m W	Electricity Substation	1980 - 1995	151800
P	467m SE	Electricity Substation	1980 - 1990	156267
P	467m SE	Electricity Substation	1975	163112
Q	485m NE	Electricity Substation	1973 - 1997	158013
Q	486m NE	Electricity Substation	1985 - 1988	162395
R	498m W	Electricity Substation	1980 - 1995	151907

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 un-grouped 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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

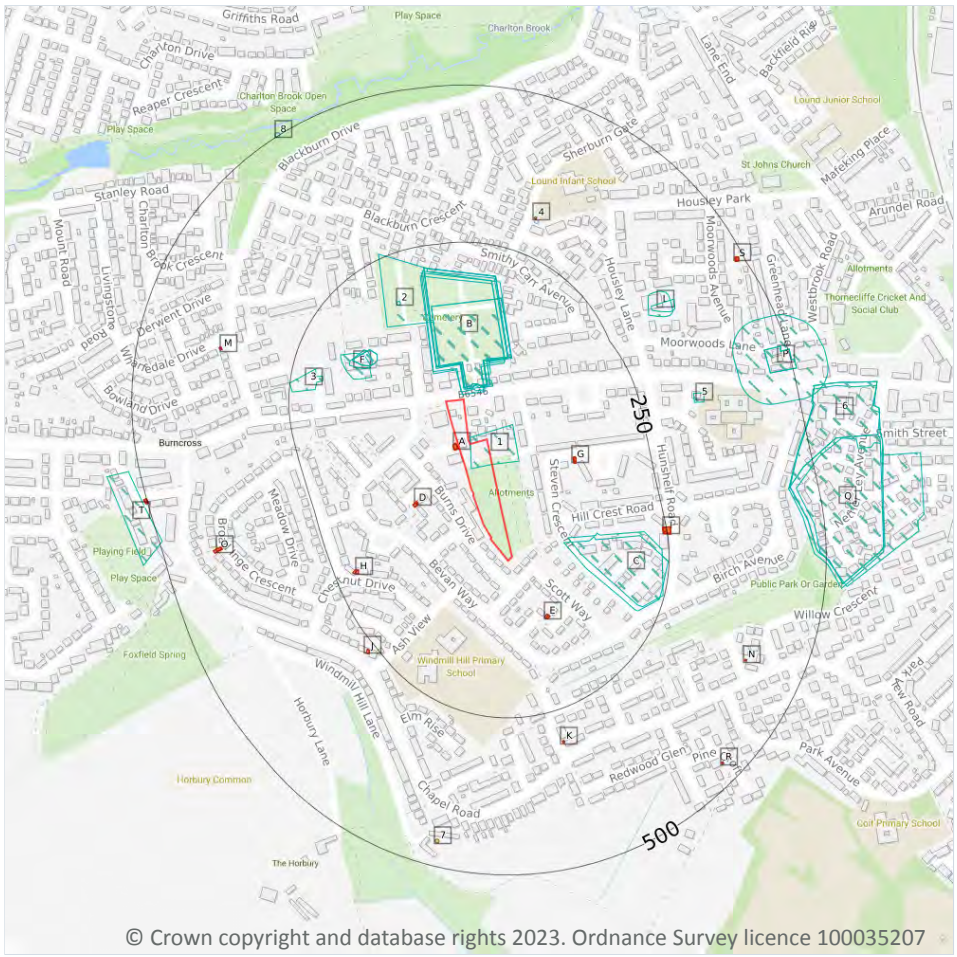
1.6 Historical military land

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	31

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 20 >**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Nursery**	**1966**	**1599827**
B	7m N	Cemetery	1924	1636920
B	13m N	Cemetery	1948	1743038

ID	Location	Land Use	Date	Group ID
B	16m N	Cemetery	1992	1680886
B	16m N	Cemetery	1924	1636920
B	18m N	Cemetery	1901	1645950
B	18m N	Cemetery	1891	1645950
B	19m N	Cemetery	1966	1714321
B	19m N	Cemetery	1951	1714321
B	19m N	Cemetery	1980	1714321
C	85m SE	Hospital	1948	1740702
C	94m SE	Hospital	1951	1645973
F	125m NW	Unspecified Ground Workings	1924	1565909
F	127m NW	Unspecified Heap	1901	1649846
F	127m NW	Unspecified Heap	1891	1649846
F	132m NW	Unspecified Heap	1924	1649850
2	170m NW	Unspecified Shaft	1901	1579083
3	199m NW	Smithy	1951	1612701
L	323m NE	Unspecified Ground Workings	1924	1565926
L	332m NE	Unspecified Heap	1924	1569114
5	335m E	Hospital	1924	1602945
P	413m NE	Hospital	1924	1703240
6	453m E	Iron Works	1948	1746674
Q	453m E	Iron Foundry	1948	1745054
Q	456m E	Unspecified Foundry	1965	1574710
Q	456m E	Iron Works	1951	1665777
P	463m E	Hospital	1901	1673514
P	463m E	Hospital	1891	1673514
Q	465m E	Unspecified Works	1980	1598448
T	495m W	Unspecified Works	1966	1598447
8	498m NW	Unspecified Old Shaft	1903	1571527

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	1

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 20 >**

ID	Location	Land Use	Date	Group ID
7	457m S	Unspecified Tank	1975	253895

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	75

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 20 >**

ID	Location	Land Use	Date	Group ID
A	2m NW	Gas Governor	1996	165703
A	2m NW	Gas Governor	1999	165703
A	2m NW	Gas Governor	1996	165703
A	2m NW	Gas Governor	1999	165703
A	2m NW	Gas Governor	1980	151001
A	3m NW	Electricity Substation	1973	148582
A	3m NW	Gas Governor	1988	165703
A	3m NW	Gas Governor	1990	165703
D	87m W	Electricity Substation	1973	166527
D	88m W	Electricity Substation	1996	161168
D	88m W	Electricity Substation	1999	161168
D	88m W	Electricity Substation	1996	161168
D	88m W	Electricity Substation	1999	161168

ID	Location	Land Use	Date	Group ID
D	88m SW	Electricity Substation	1980	161168
D	90m SW	Electricity Substation	1988	161168
D	90m SW	Electricity Substation	1990	161168
E	105m SE	Electricity Substation	1990	161314
E	108m SE	Electricity Substation	1975	161077
E	108m SE	Electricity Substation	1970	161077
G	128m E	Electricity Substation	1988	163501
G	128m E	Electricity Substation	1990	163501
G	129m E	Electricity Substation	1980	157950
G	129m E	Electricity Substation	1996	163501
G	129m E	Electricity Substation	1999	163501
G	129m E	Electricity Substation	1996	163501
G	129m E	Electricity Substation	1999	163501
G	129m E	Electricity Substation	1973	157950
H	212m SW	Electricity Substation	1975	166820
H	212m SW	Electricity Substation	1970	166820
H	215m SW	Electricity Substation	1990	153727
I	244m E	Electricity Substation	1997	161325
I	244m E	Electricity Substation	1996	161325
I	244m E	Electricity Substation	1996	161325
I	244m E	Electricity Substation	1997	161325
I	244m E	Electricity Substation	1980	163924
I	244m E	Electricity Substation	1990	163924
I	244m E	Electricity Substation	1985	151409
I	244m E	Electricity Substation	1987	151409
I	244m E	Electricity Substation	1988	151409
I	245m E	Electricity Substation	1973	166279
J	261m SW	Electricity Substation	1990	165956

ID	Location	Land Use	Date	Group ID
J	261m SW	Electricity Substation	1970	165956
K	299m S	Electricity Substation	1990	167859
K	300m S	Electricity Substation	1975	167859
4	308m N	Electricity Substation	1990	148581
M	366m NW	Electricity Substation	1985	163319
M	366m NW	Electricity Substation	1990	163319
M	367m NW	Electricity Substation	1980	161815
M	367m NW	Electricity Substation	1995	161815
M	367m NW	Electricity Substation	1995	161815
M	367m NW	Electricity Substation	1973	161815
N	405m SE	Electricity Substation	1990	160278
N	405m SE	Electricity Substation	1980	160158
O	407m W	Electricity Substation	1985	154667
O	407m W	Electricity Substation	1990	154667
O	409m W	Electricity Substation	1995	151800
O	409m W	Electricity Substation	1995	151800
O	409m W	Electricity Substation	1980	151800
R	467m SE	Electricity Substation	1990	156267
R	467m SE	Electricity Substation	1975	163112
R	467m SE	Electricity Substation	1980	156267
S	485m NE	Electricity Substation	1980	158013
S	485m NE	Electricity Substation	1990	158013
S	485m NE	Electricity Substation	1997	158013
S	485m NE	Electricity Substation	1996	158013
S	485m NE	Electricity Substation	1996	158013
S	485m NE	Electricity Substation	1997	158013
S	486m NE	Electricity Substation	1985	162395
S	486m NE	Electricity Substation	1987	162395

ID	Location	Land Use	Date	Group ID
S	486m NE	Electricity Substation	1988	162395
S	487m NE	Electricity Substation	1973	158013
T	498m W	Electricity Substation	1985	151907
T	498m W	Electricity Substation	1990	151907
T	499m W	Electricity Substation	1995	151907
T	499m W	Electricity Substation	1995	151907

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.

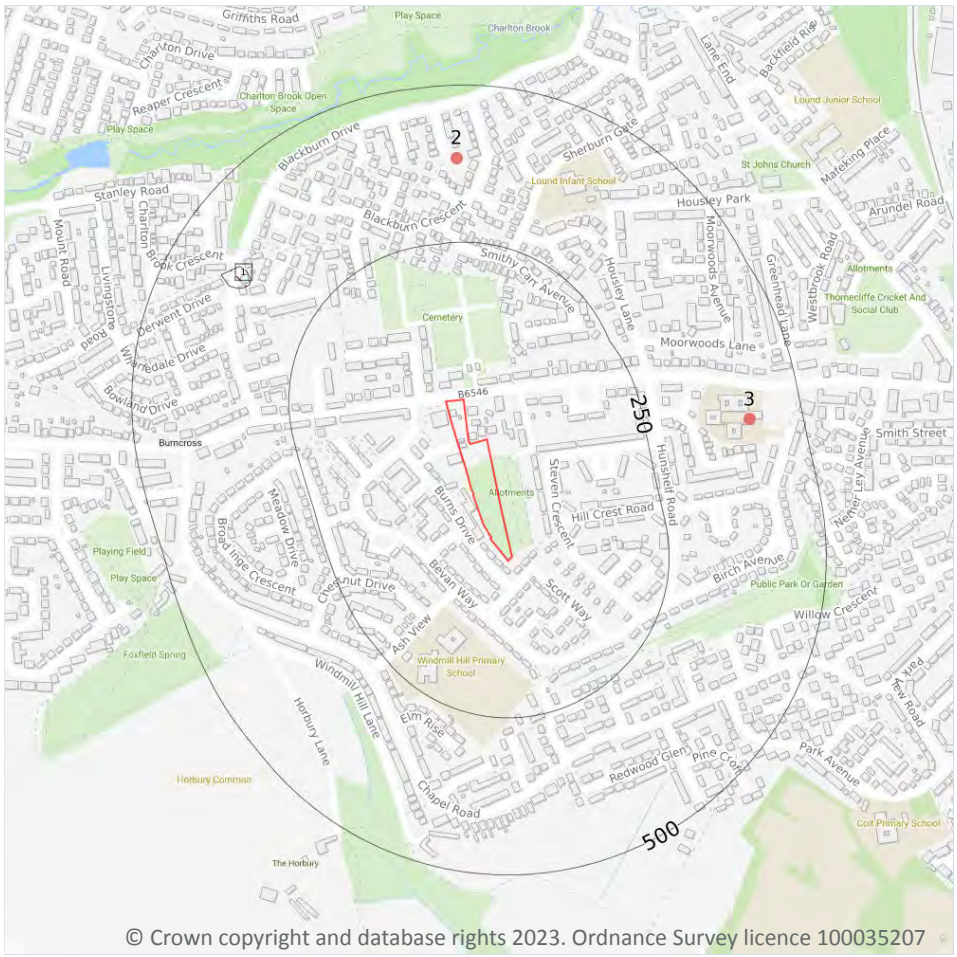
2.5 Historical garages

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



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Site Outline

Search buffers in metres (m)

Historical landfill (LA/OS)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	1

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

Features are displayed on the Waste and landfill map on **page 26 >**

ID	Location	Site address	Source	Data type
1	363m NW	Refuse Tip	1973 mapping	Polygon

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	2

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

Features are displayed on the Waste and landfill map on **page 26 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
2	384m N	6 Habershon Drive SHEFFIELD S35 2ZT	EPR/TF0831VR /A001	Treating waste exemption	Non-Agricultural Waste Only	Aerobic composting and associated prior treatment
3	415m E	67, BIRCH AVENUE, CHAPELTOWN, SHEFFIELD, S35 1RQ	WEX175032	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

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

4 Current industrial land use

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Site Outline

Search buffers in metres (m)

Recent industrial land uses

Current or recent petrol stations

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

4.1 Recent industrial land uses

Records within 250m	8

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 29 >**

ID	Location	Company	Address	Activity	Category
1	4m NW	Gas Governor Station	South Yorkshire, S35	Gas Features	Infrastructure and Facilities
A	40m NE	Burncross Garage	235, Burncross Road, Sheffield, South Yorkshire, S35 1RZ	Vehicle Repair, Testing and Servicing	Repair and Servicing

ID	Location	Company	Address	Activity	Category
A	54m N	Texaco Filling Station	235, Burncross Road, Chapeltown, Sheffield, South Yorkshire, S35 1RZ	Petrol and Fuel Stations	Road and Rail
A	58m N	Mfg Morestyle	235, Burncross Road, Chapeltown, Sheffield, South Yorkshire, S35 1RZ	Vehicle Cleaning Services	Personal, Consumer and Other Services
2	96m W	Electricity Sub Station	South Yorkshire, S35	Electrical Features	Infrastructure and Facilities
3	106m SE	Electricity Sub Station	South Yorkshire, S35	Electrical Features	Infrastructure and Facilities
4	131m E	Electricity Sub Station	South Yorkshire, S35	Electrical Features	Infrastructure and Facilities
5	212m SW	Electricity Sub Station	South Yorkshire, S35	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 29 >**

ID	Location	Company	Address	LPG	Status
A	32m N	JET	235, Burncross Road, Chapeltown, Sheffield, South Yorkshire, S35 1RZ	No	Open

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	3

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.

Features are displayed on the Current industrial land use map on **page 29 >**

ID	Location	Address	Details	
A	54m N	Burncross Serv Stn, Burncross Rd, Sheffield, S35 1RX	Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
A	57m N	Morestyle Filling Station, 235 Burncross Road, Sheffield, S35 1RZ	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
6	271m W	W G Morris, 352 Burncross Rd, Burncross, Sheffield, S35 1SJ	Process: Waste Oil Burner 0.4 MW Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

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	0

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

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	0

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

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

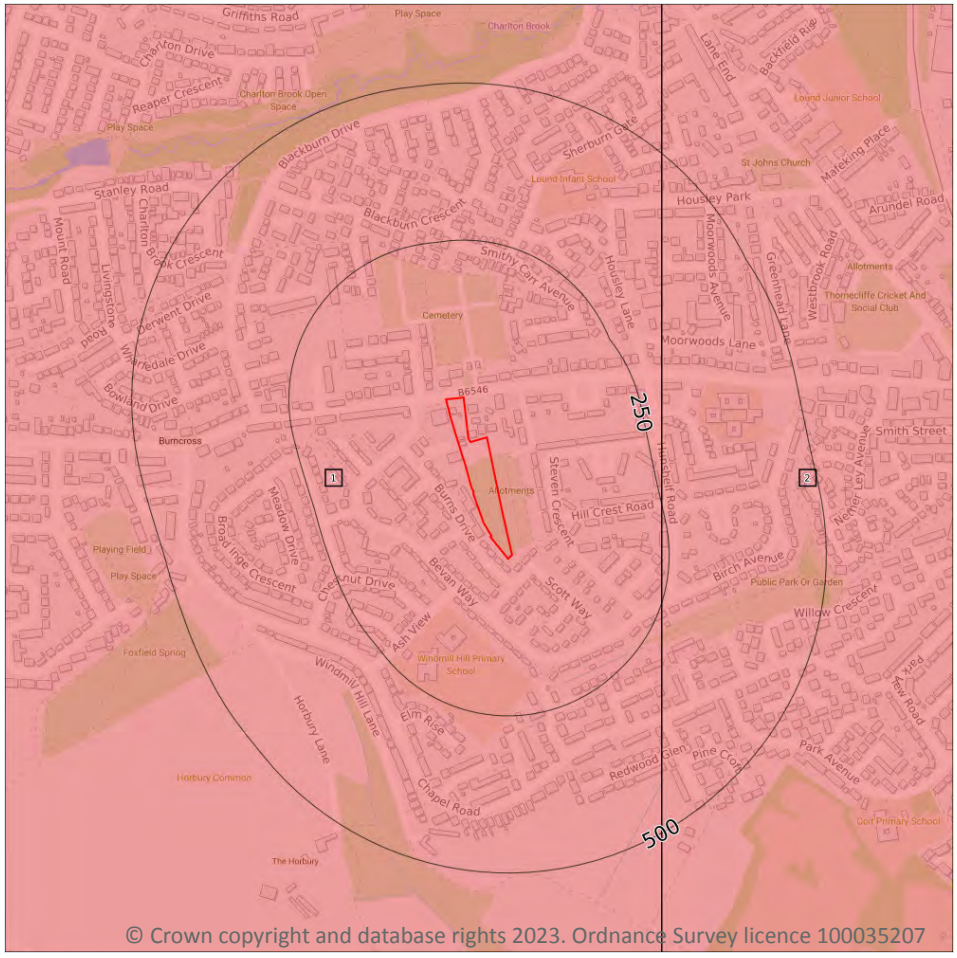
5.1 Superficial aquifer

Records within 500m	0

Aquifer status of groundwater held within superficial geology.

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

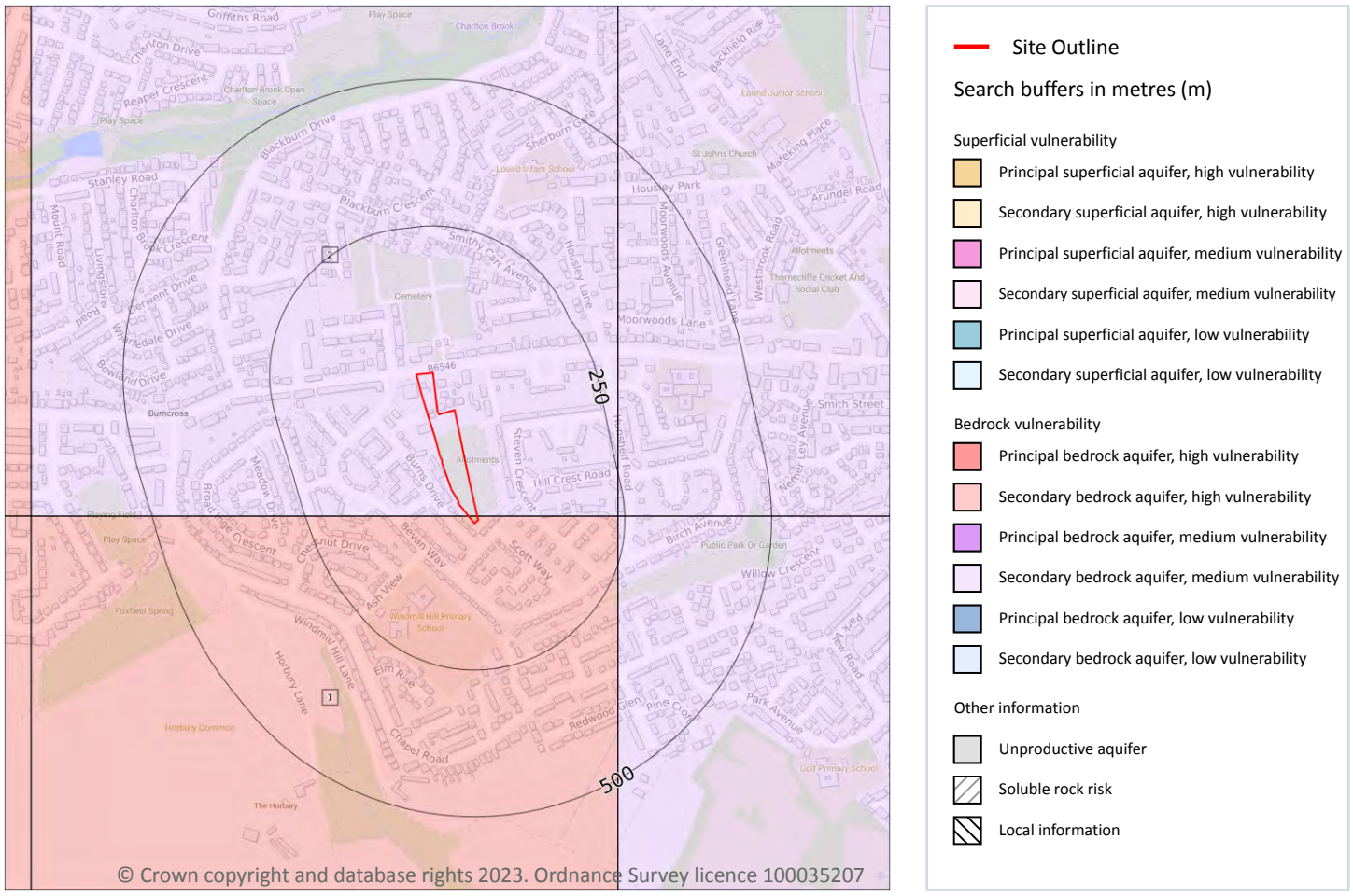
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 36 >**

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	238m SE	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	2

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 38 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	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.

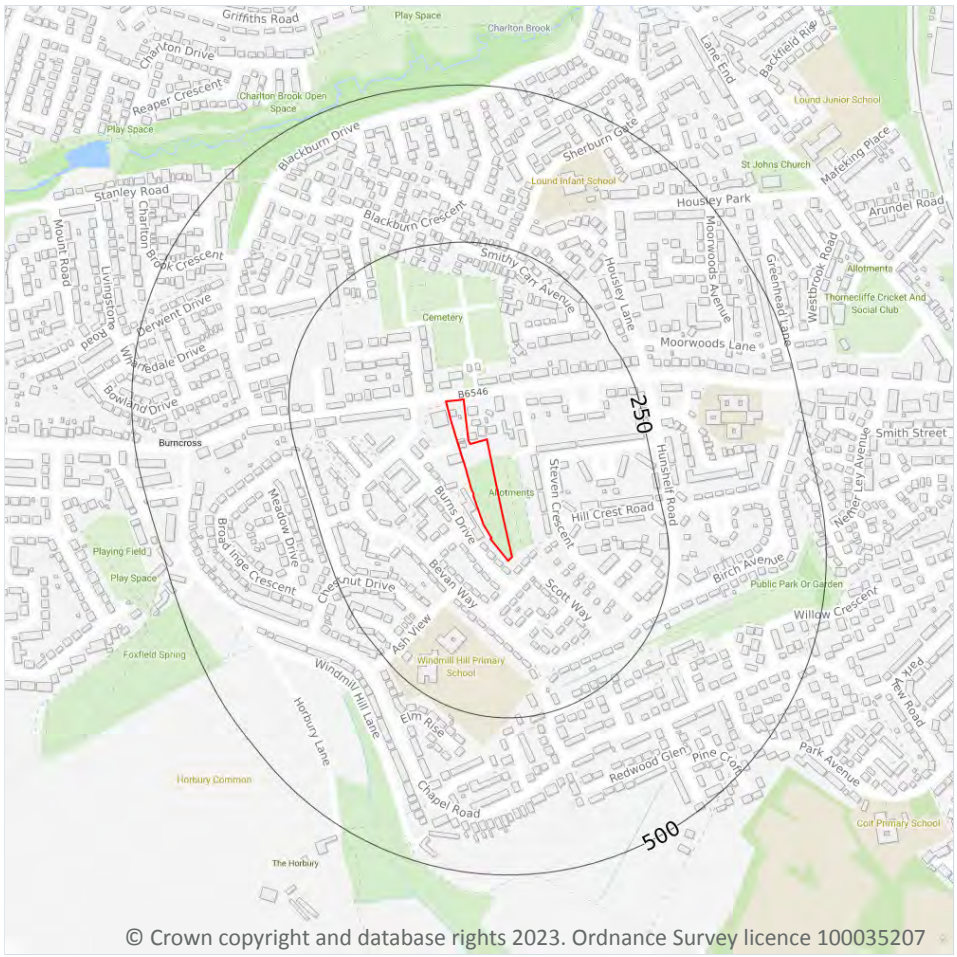
5.5 Groundwater vulnerability- local information

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
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	13

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 40 >**

ID	Location	Details	
-	848m E	Status: Historical Licence No: 2/27/06/079 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: CONOCO LTD Easting: 435610 Northing: 395960	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 19/11/1996 Expiry Date: - Issue No: 100 Version Start Date: 19/11/1996 Version End Date: -
-	848m E	Status: Historical Licence No: 2/27/06/079 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - ECCLESFIELD ROAD SHEFFIELD Data Type: Point Name: FUELFORCE LTD Easting: 435610 Northing: 395960	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 19/11/1996 Expiry Date: - Issue No: 101 Version Start Date: 04/12/2001 Version End Date: -
-	941m W	Status: Active Licence No: NE/027/0006/016 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - BARNES HALL FARM, BURNCROSS Data Type: Point Name: Open House Project Ltd Easting: 433808 Northing: 395790	Annual Volume (m^3): 18000 Max Daily Volume (m^3): 150 Original Application No: NPS/WR/028694 Original Start Date: 15/03/2017 Expiry Date: 31/03/2029 Issue No: 2 Version Start Date: 16/05/2018 Version End Date: -
-	941m W	Status: Active Licence No: NE/027/0006/016 Details: Heat Pump Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - BARNES HALL FARM, BURNCROSS Data Type: Point Name: Open House Project Ltd Easting: 433808 Northing: 395790	Annual Volume (m^3): 18000 Max Daily Volume (m^3): 150 Original Application No: NPS/WR/028694 Original Start Date: 15/03/2017 Expiry Date: 31/03/2029 Issue No: 2 Version Start Date: 16/05/2018 Version End Date: -

ID	Location	Details	
-	1213m NE	Status: Active Licence No: 2/27/06/087/R01 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-CHAPELTOWN-SHEFFIELD Data Type: Point Name: Sherwin-Williams Diversified Brands Ltd Easting: 435300 Northing: 397290	Annual Volume (m^3): 117000 Max Daily Volume (m^3): 540 Original Application No: NPS/WR/021551 Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2019 Version End Date: -
-	1213m NE	Status: Historical Licence No: 2/27/06/087 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-CHAPELTOWN-SHEFFIELD Data Type: Point Name: Sherwin-Williams Diversified Brands Ltd Easting: 435300 Northing: 397290	Annual Volume (m^3): 130000 Max Daily Volume (m^3): 540 Original Application No: - Original Start Date: 03/01/2006 Expiry Date: 31/03/2017 Issue No: 2 Version Start Date: 09/01/2015 Version End Date: -
-	1254m SW	Status: Historical Licence No: 2/27/06/052 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: GRAVITY Data Type: Point Name: J BEMROSE & SONS Easting: 434050 Northing: 394950	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 28/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/04/1966 Version End Date: -
-	1254m SW	Status: Historical Licence No: 2/27/06/052 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: SPRING - ECCLESFIELD Data Type: Point Name: J BEMROSE & SONS Easting: 434050 Northing: 394950	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 28/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/04/1966 Version End Date: -
-	1723m E	Status: Historical Licence No: NE/027/0006/008 Details: Mineral Washing Direct Source: GROUNDWATERS Point: BOREHOLE A - COAL MEASURES - HESLEY WOOD, SHEFFIELD Data Type: Point Name: RecyCoal Ltd Easting: 436438 Northing: 396395	Annual Volume (m^3): 218000 Max Daily Volume (m^3): 767 Original Application No: - Original Start Date: 14/11/2013 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 14/11/2013 Version End Date: -

ID	Location	Details	
-	1969m SE	Status: Historical Licence No: 2/27/06/033 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: LEE STEEL WIRE LTD Easting: 436400 Northing: 394900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/10/1996 Version End Date: -
-	1969m SE	Status: Historical Licence No: 2/27/06/033 Details: General use relating to Secondary Category (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: LEE STEEL WIRE LTD Easting: 436400 Northing: 394900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/10/1996 Version End Date: -
-	1969m SE	Status: Historical Licence No: 2/27/06/033 Details: General use relating to Secondary Category (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-SHEFFIELD Data Type: Point Name: LEE SMITH WIRES LIMITED Easting: 436400 Northing: 394900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 02/07/2001 Version End Date: -
-	1969m SE	Status: Historical Licence No: 2/27/06/033 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-SHEFFIELD Data Type: Point Name: LEE SMITH WIRES LIMITED Easting: 436400 Northing: 394900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 02/07/2001 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	5

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 40 >**

ID	Location	Details	
-	970m NE	Status: Historical Licence No: 2/27/06/044 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: THORNCLIFFE ROW DAM Data Type: Point Name: SOUTH RIDING ESTATES LTD Easting: 435400 Northing: 396900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 13/07/1987 Version End Date: -
-	970m NE	Status: Historical Licence No: 2/27/06/044 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: THORNCLIFFE ROW DAM Data Type: Point Name: SOUTH RIDING ESTATES LTD Easting: 435400 Northing: 396900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 13/07/1987 Version End Date: -
-	1657m N	Status: Historical Licence No: 2/27/06/042 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: SURFACE WATER Point: DEVIL'S BRIDGE POND - THORNCLIFFE Data Type: Point Name: SPIRE SHEFFIELD LTD Easting: 434600 Northing: 397900	Annual Volume (m^3): 18184 Max Daily Volume (m^3): 545.53 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 30/09/1999 Version End Date: -

ID	Location	Details	
-	1969m SE	Status: Historical Licence No: 2/27/06/032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: BLACKBURN BROOK - ECCLESFIELD Data Type: Point Name: LEE STEEL WIRE LTD Easting: 436400 Northing: 394900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -
-	1969m SE	Status: Historical Licence No: 2/27/06/032 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: BLACKBURN BROOK - ECCLESFIELD Data Type: Point Name: LEE STEEL WIRE LTD Easting: 436400 Northing: 394900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m **1**

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 40 >**

ID	Location	Details	
-	941m W	Status: Active Licence No: NE/027/0006/016 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - BARNES HALL FARM, BURNCROSS Data Type: Point Name: Open House Project Ltd Easting: 433808 Northing: 395790	Annual Volume (m^3): 18000 Max Daily Volume (m^3): 150 Original Application No: NPS/WR/028694 Original Start Date: 15/03/2017 Expiry Date: 31/03/2029 Issue No: 2 Version Start Date: 16/05/2018 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	2

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 47 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	216m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
1	242m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	1

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 47 >**

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 47 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Blackburn Brook from Source to River Don**	**GB104027057440**	**Don Middle**	**Don and Rother**

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 47 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	873m E	River	Blackburn Brook from Source to River Don	GB104027057440 ↗	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 47 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Don & Rother Millstone grit & Coal Measures**	GB40402G992300 ↗	**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

Site Outline

Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

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 53 >**

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 Ambiental Risk Analytics.

9 Groundwater flooding

Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

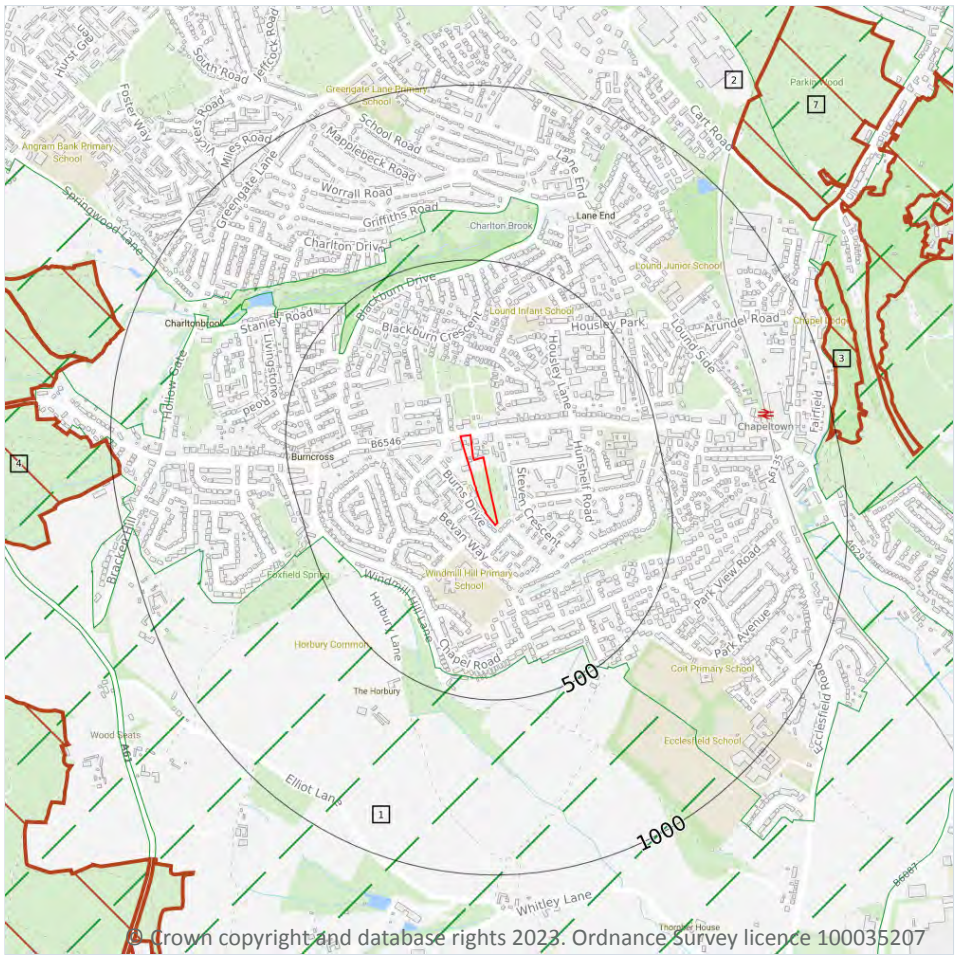
Highest risk on site	**Negligible**
Highest risk within 50m	**Negligible**

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 55 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	20

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 56 >**

ID	Location	Name	Woodland Type
3	977m E	Parkin Wood	Ancient & Semi-Natural Woodland
4	978m W	Green Lane Spring	Ancient & Semi-Natural Woodland
5	1013m NW	Green Lane Spring	Ancient Replanted Woodland
6	1090m W	Green Lane Spring	Ancient & Semi-Natural Woodland
7	1111m NE	Parkin Wood	Ancient & Semi-Natural Woodland
8	1148m E	Parkin Wood	Ancient & Semi-Natural Woodland
10	1316m SW	Green Lane Spring	Ancient Replanted Woodland
11	1335m SW	Green Lane Spring	Ancient Replanted Woodland
-	1361m W	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1417m N	Thorncliffe Wood	Ancient & Semi-Natural Woodland
-	1560m E	Unknown	Ancient Replanted Woodland
-	1677m E	Unknown	Ancient & Semi-Natural Woodland
-	1681m NW	Green Lane Spring	Ancient Replanted Woodland
-	1685m S	Lee-Shrogs Wood	Ancient & Semi-Natural Woodland
-	1692m E	Unknown	Ancient & Semi-Natural Woodland
-	1722m W	Green Lane Spring	Ancient & Semi-Natural Woodland

ID	Location	Name	Woodland Type
-	1867m W	Green Lane Spring	Ancient Replanted Woodland
-	1873m NE	Unknown	Ancient & Semi-Natural Woodland
-	1929m E	Unknown	Ancient & Semi-Natural Woodland
-	1962m W	Green Lane Spring	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	7

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

Features are displayed on the Environmental designations map on **page 56 >**

ID	Location	Name	Local Authority name
1	319m SW	South and West Yorkshire	Sheffield
2	919m E	South and West Yorkshire	Sheffield
9	1166m SW	South and West Yorkshire	Sheffield
-	1689m E	South and West Yorkshire	Sheffield
-	1867m NE	South and West Yorkshire	Sheffield
-	1871m NE	South and West Yorkshire	Barnsley
-	1875m NE	South and West Yorkshire	Rotherham

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

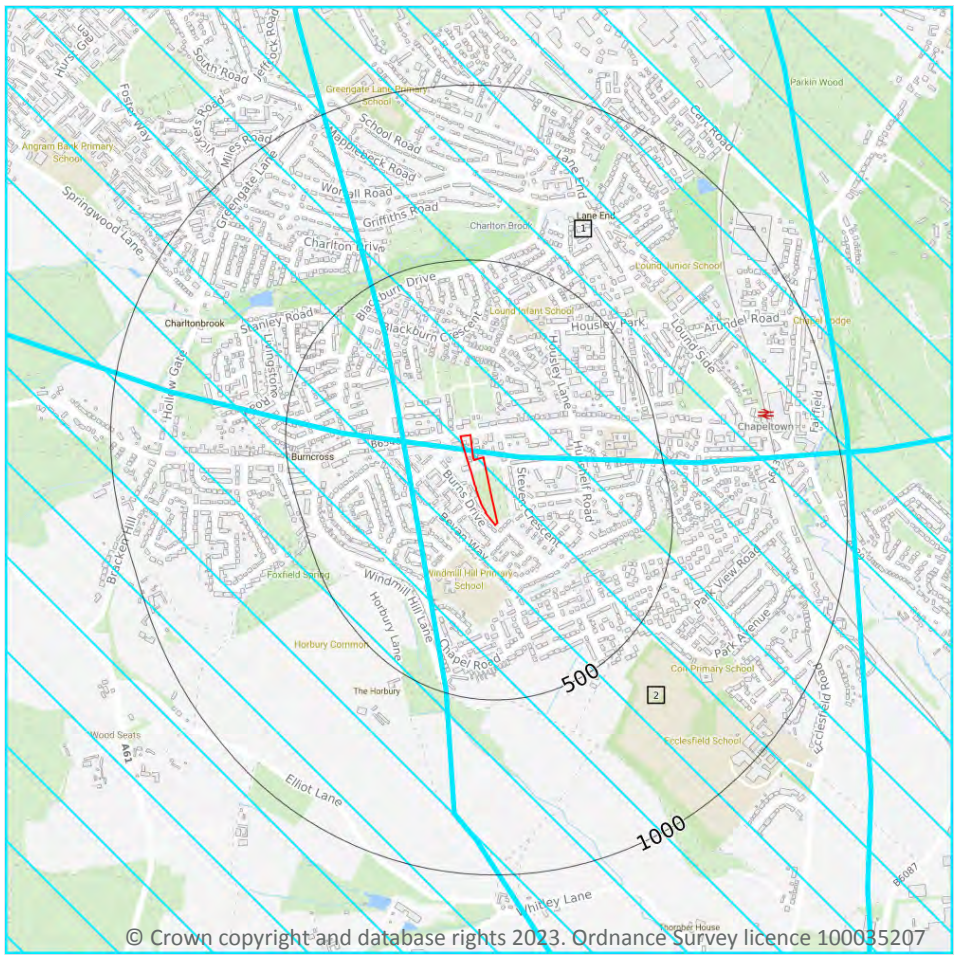
Records within 2000m	5

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

Location	Name	Type	NVZ ID	Status
On site	**Blackburn Brook from Source to River Don NVZ**	**Surface Water**	**261**	**Existing**
6m S	Blackburn Brook from Source to River Don NVZ	Surface Water	261	Existing
565m W	Blackburn Brook from Source to River Don NVZ	Surface Water	261	Existing
614m W	Blackburn Brook from Source to River Don NVZ	Surface Water	261	Existing
1818m NE	River Dearne NVZ	Surface Water	278	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	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 62 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**Infrastructure - Airports, helipads and other aviation proposals.** **Minerals, Oil and Gas - Oil & gas exploration/extraction.** **Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t.**

ID	Location	Type of developments requiring consultation
2	**On site**	**Infrastructure - Airports, helipads and other aviation proposals.** **Minerals, Oil and Gas - Oil & gas exploration/extraction.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**0**

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

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

11 Visual and cultural designations

Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	1

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

Features are displayed on the Visual and cultural designations map on **page 64 >**

ID	Location	Name	Grade	Reference Number	Listed date
1	34m NW	Milepost Opposite Junction With Bevan	II	1132828	08/08/1985

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

11.5 Conservation Areas

Records within 250m	0

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.

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.

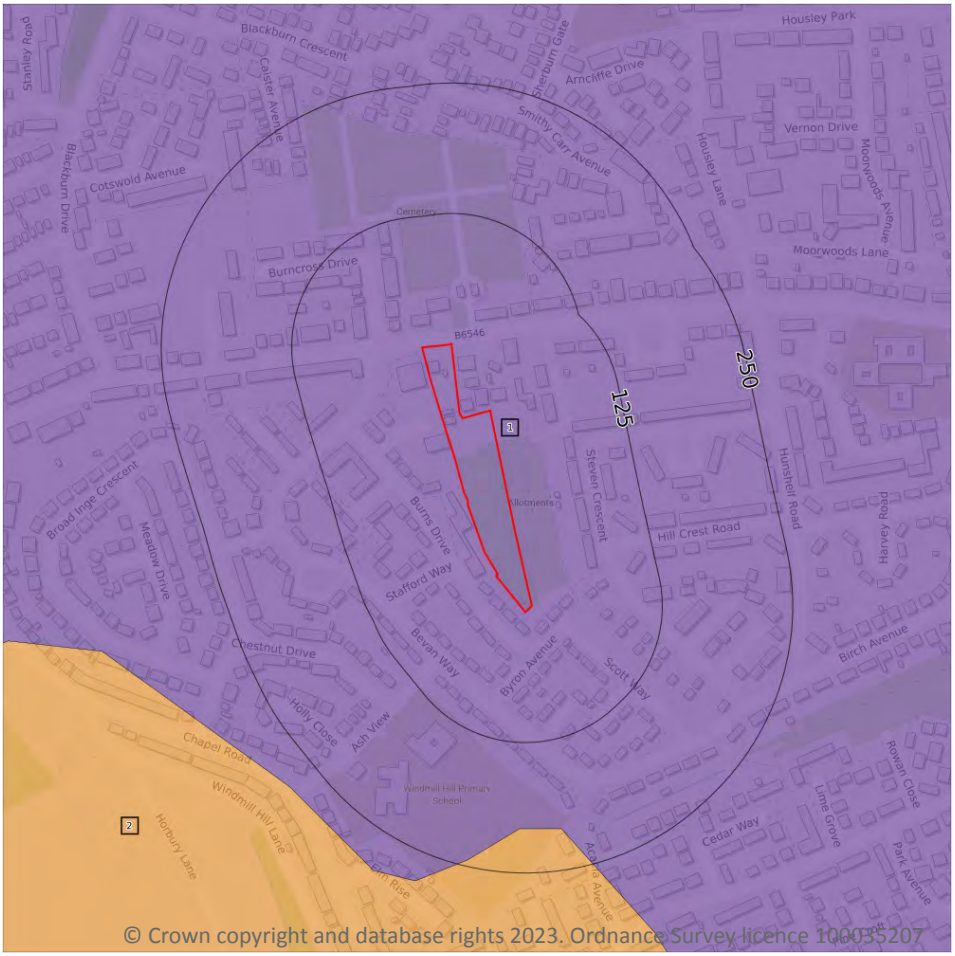
11.7 Registered Parks and Gardens

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	2

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 67 >**

ID	Location	Classification	Description
1	**On site**	**Urban**	-
2	208m S	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

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	0

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

This data is sourced from Natural England.

13 Habitat designations

Site Outline

Search buffers in metres (m)

- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders

Habitat Networks

- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	2

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 69 >**

ID	Location	Main Habitat	Other habitats
1	150m NW	Traditional orchard	Overruled by Traditional Orchards HAP Inventory dataset
2	158m NW	Traditional orchard	Main habitat: TORCH (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.

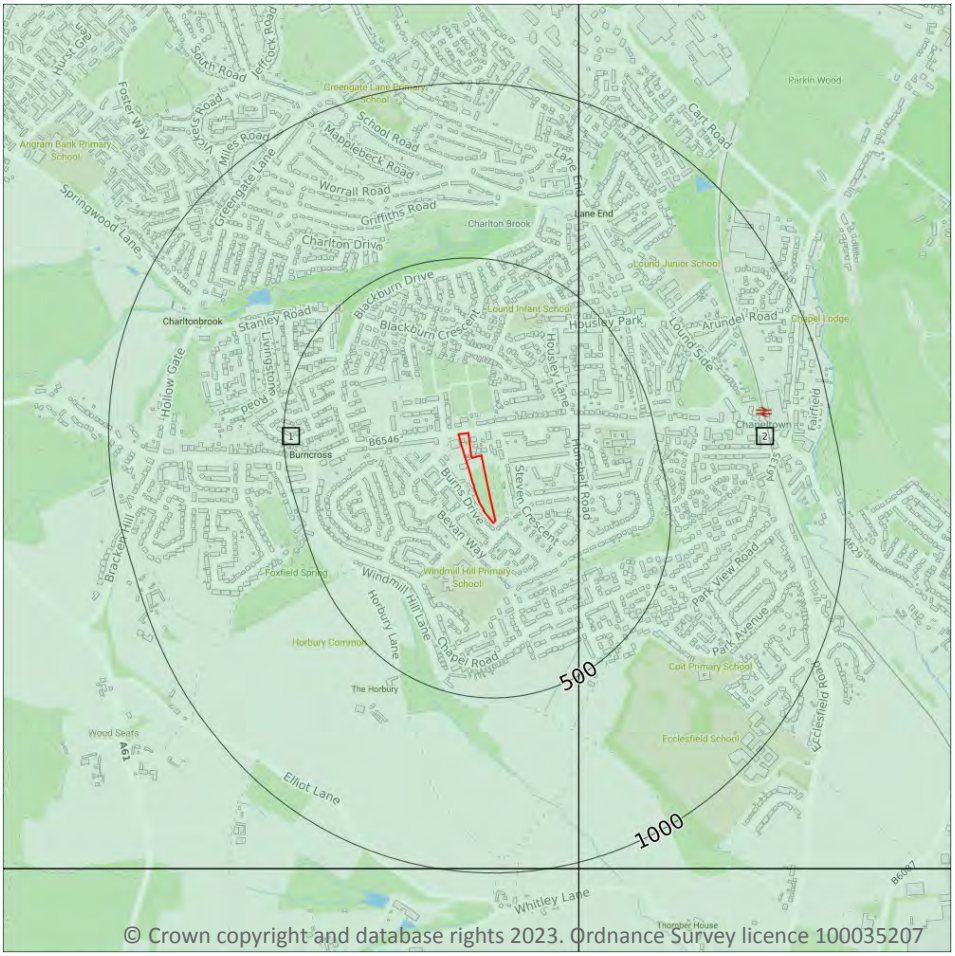
13.4 Limestone Pavement Orders

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

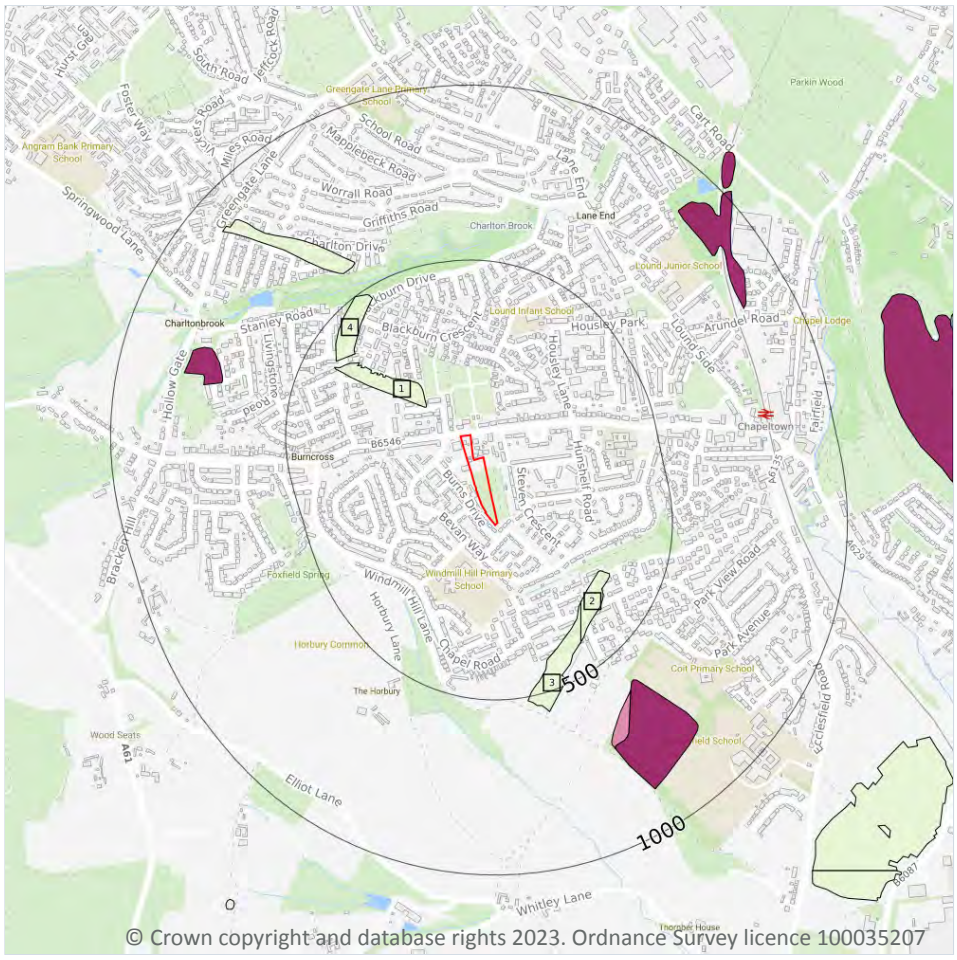
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 71 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SK39NW**
2	238m SE	Full	Full	Full	Full	SK39NE

This data is sourced from the British Geological Survey.

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



14.2 Artificial and made ground (10k)

Records within 500m	4

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 72 >**

ID	Location	LEX Code	Description	Rock description
1	129m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
2	319m SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	329m SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	383m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

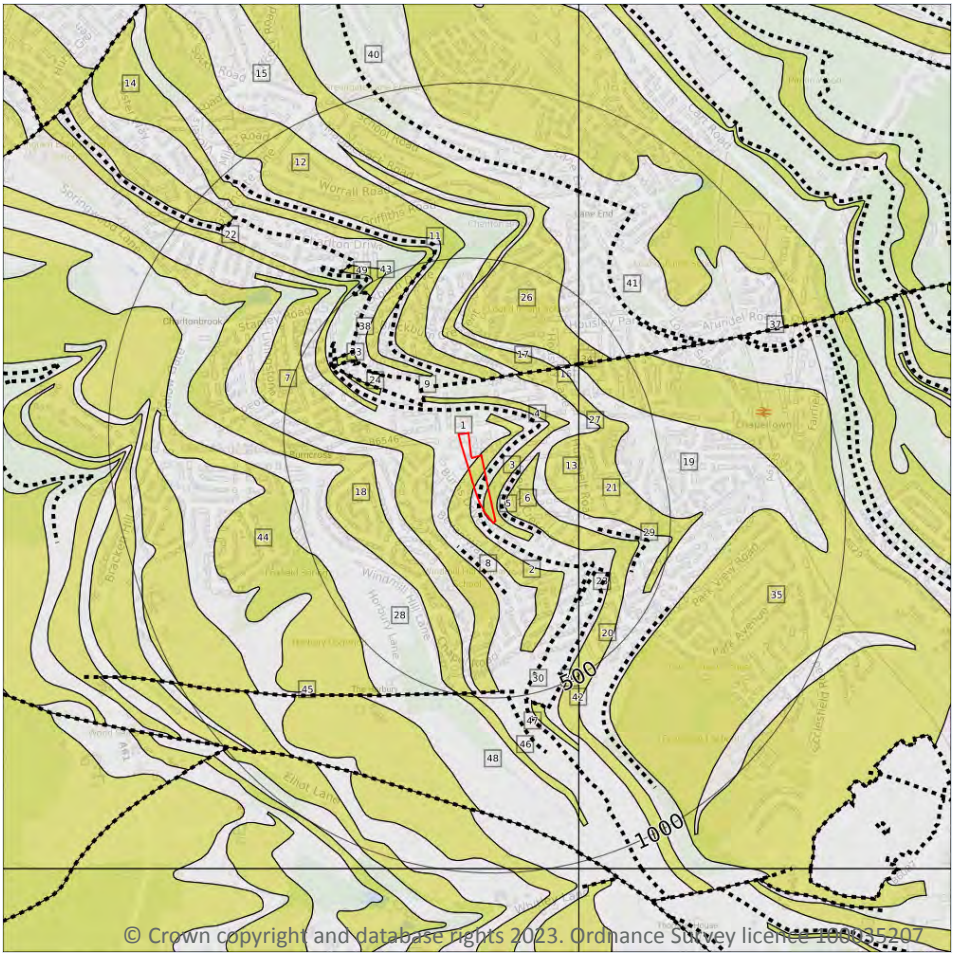
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



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 75 >**

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

ID	Location	LEX Code	Description	Rock age
6	37m SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
7	80m NW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
12	159m N	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
13	167m E	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
14	183m NW	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
15	190m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
16	215m N	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
17	220m N	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
18	237m SW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
19	238m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
20	239m SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
21	240m E	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
22	246m NW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
23	251m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
24	252m NW	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
26	275m N	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
27	285m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
28	290m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
32	319m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
33	357m NW	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
34	363m NE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
35	368m NE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
36	372m NE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
40	415m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
41	417m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
42	445m SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
43	468m NW	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
44	472m SW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
46	490m S	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
48	499m S	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 **16**

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 75 >**

ID	Location	Category	Description
4	**On site**	**ROCK**	**Coal seam, inferred**
5	27m SE	ROCK	Coal seam, inferred
8	117m S	ROCK	Coal seam, inferred
9	129m NW	ROCK	Coal seam, observed
10	144m N	FAULT	Normal fault, inferred
11	148m N	ROCK	Coal seam, inferred
25	272m SE	ROCK	Coal seam, inferred
29	294m SE	ROCK	Coal seam, inferred
30	314m SE	ROCK	Coal seam, inferred
31	319m SE	ROCK	Coal seam, observed
37	372m NE	FAULT	Normal fault, inferred
38	383m NW	ROCK	Coal seam, observed
39	415m SE	ROCK	Coal seam, observed

ID	Location	Category	Description
45	482m S	FAULT	Normal fault, inferred
47	496m S	ROCK	Coal seam, inferred
49	500m NW	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

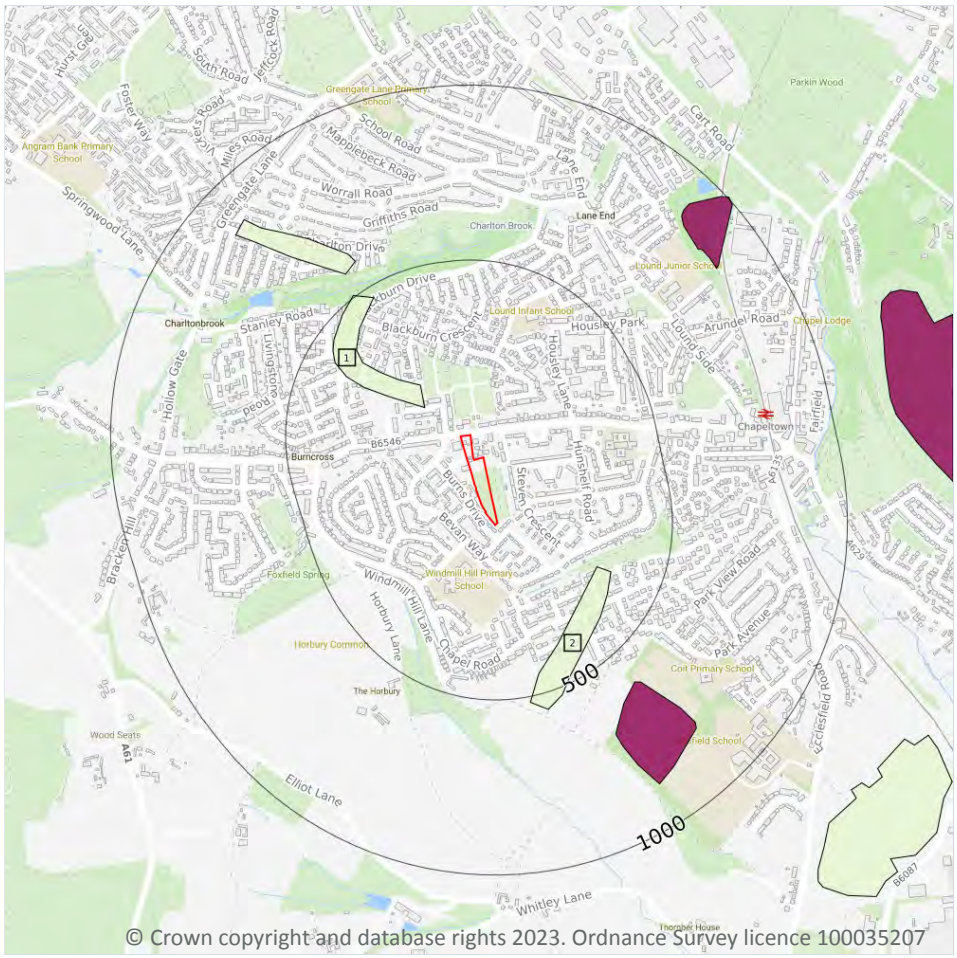
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 79 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**Full**	**EW087_barnsley_v4**

This data is sourced from the British Geological Survey.

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



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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	2

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 80 >**

ID	Location	LEX Code	Description	Rock description
1	131m NW	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
2	310m SE	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

15.4 Superficial geology (50k)

Records within 500m	0

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.

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

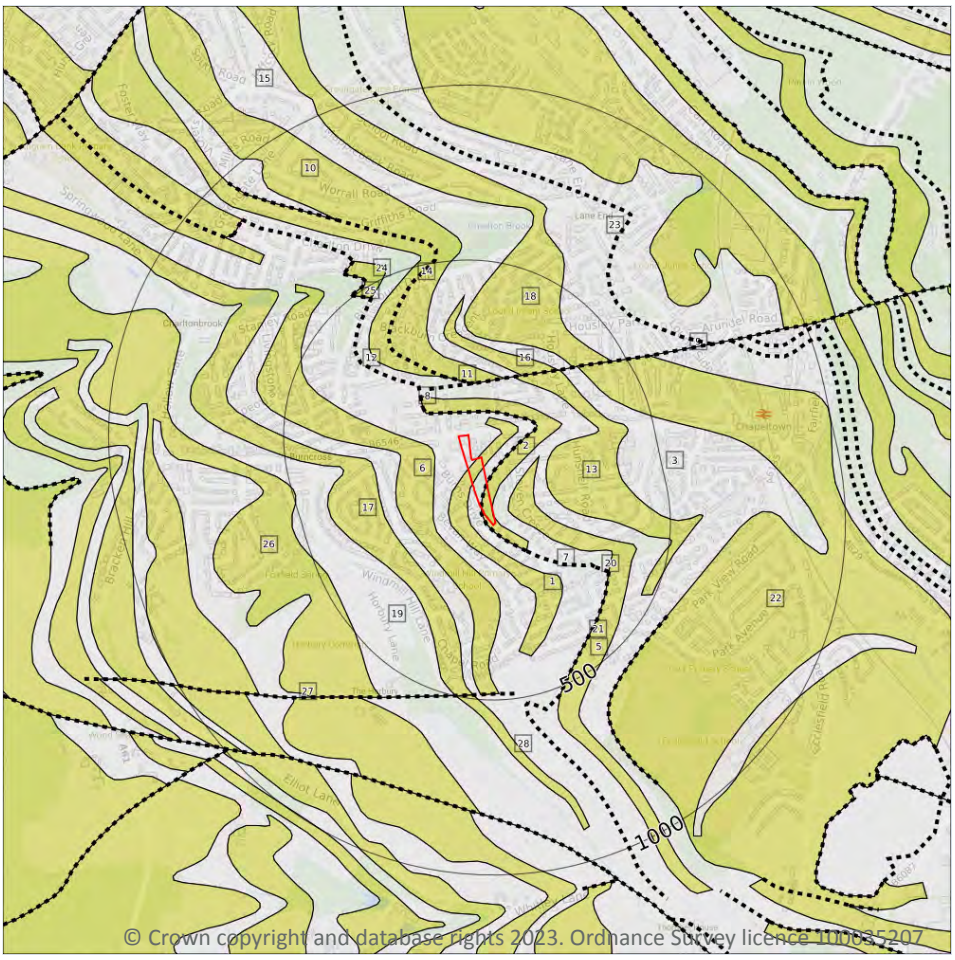
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	17

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 83 >**

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

ID	Location	LEX Code	Description	Rock age
5	44m SE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
6	80m NW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
10	148m N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
13	169m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
15	188m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
16	219m N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
17	238m SW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
18	278m N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
19	296m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
22	367m NE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
23	412m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
24	468m NW	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
26	477m SW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
28	489m S	PF-SDST	PENISTONE FLAGS - 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**	**Moderate**	**Low**
On site	**Fracture**	**High**	**Moderate**

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**High**	**Moderate**
44m SE	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**11**

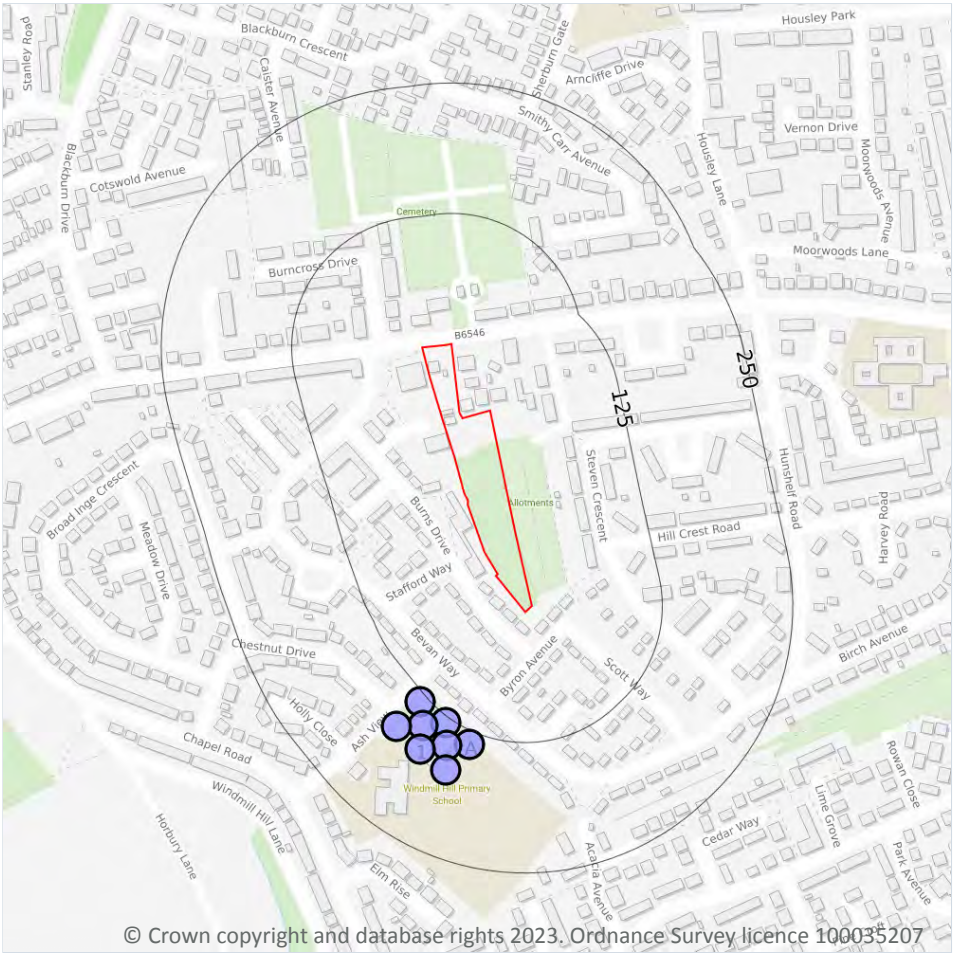
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 83 >**

ID	Location	Category	Description
4	**On site**	**ROCK**	**Coal seam, inferred**
7	120m SE	ROCK	Coal seam, inferred
8	131m NW	ROCK	Coal seam, inferred
9	144m N	FAULT	Fault, inferred
11	148m N	ROCK	Coal seam, inferred
12	157m NW	ROCK	Coal seam, inferred
14	177m N	ROCK	Coal seam, inferred
20	311m SE	ROCK	Coal seam, inferred
21	353m SE	ROCK	Coal seam, inferred
25	468m NW	ROCK	Coal seam, inferred
27	482m S	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m **8**

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

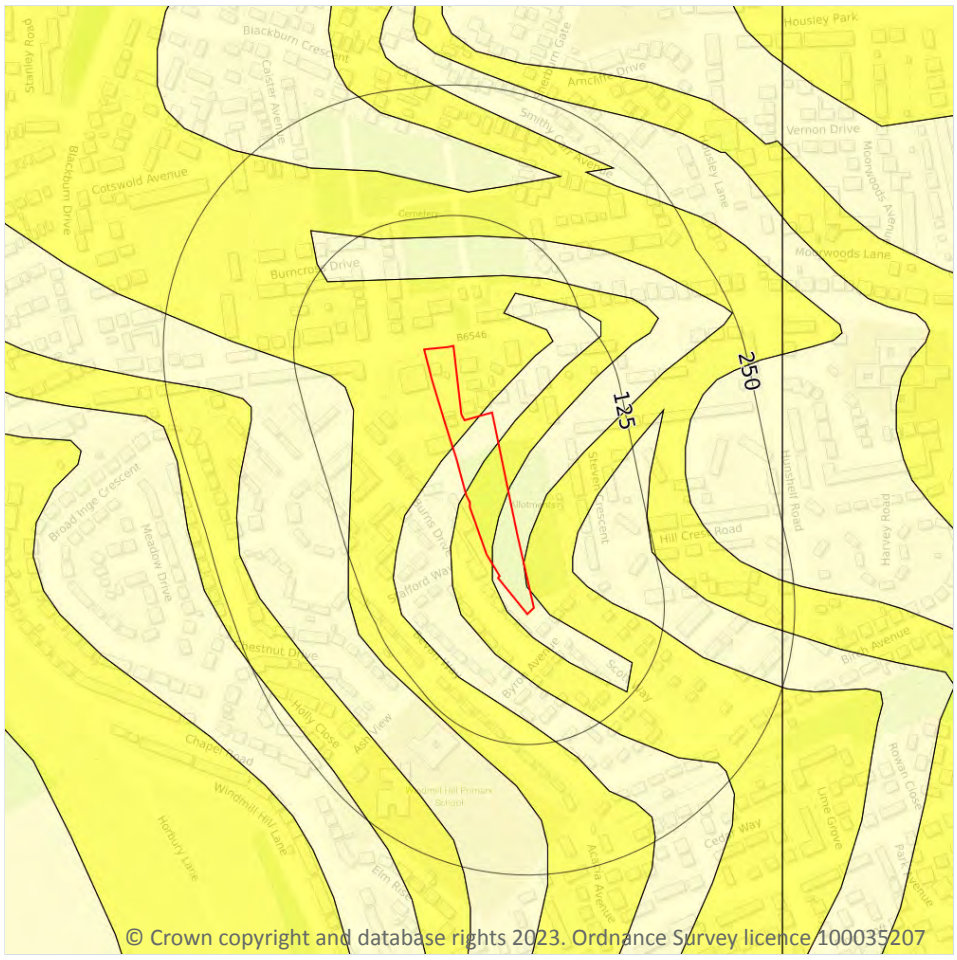
Features are displayed on the Boreholes map on **page 86 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	130m S	434679 395882	WINDMILL SCH ECCLESFIELD 2	3.0	N	215619 ↗
A	132m S	434655 395902	WINDMILL SCH ECCLESFIELD 1	3.0	N	215618 ↗
A	137m S	434702 395861	WINDMILL SCH ECCLESFIELD 3	4.0	N	215620 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	147m S	434657 395879	WINDMILL SCH ECCLESFIELD 4	2.0	N	215621 ↗
A	148m S	434680 395860	WINDMILL SCH ECCLESFIELD 5	2.0	N	215622 ↗
1	165m S	434632 395878	WINDMILL SCH ECCLESFIELD 6	3.0	N	215623 ↗
A	166m S	434655 395856	WINDMILL SCH ECCLESFIELD 7	2.0	N	215624 ↗
A	170m S	434679 395836	WINDMILL SCH ECCLESFIELD 8	2.0	N	215625 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m	3

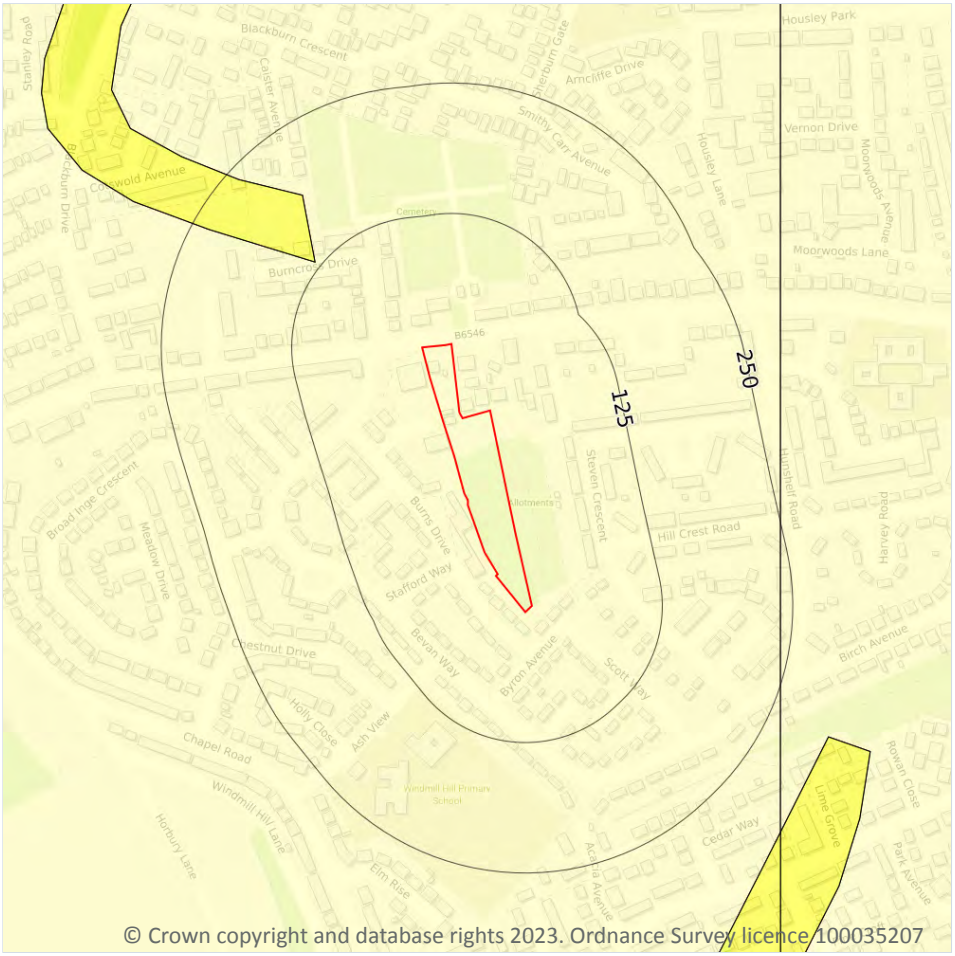
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 88 >**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Very low**	**Ground conditions predominantly low plasticity.**
44m SE	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m	1

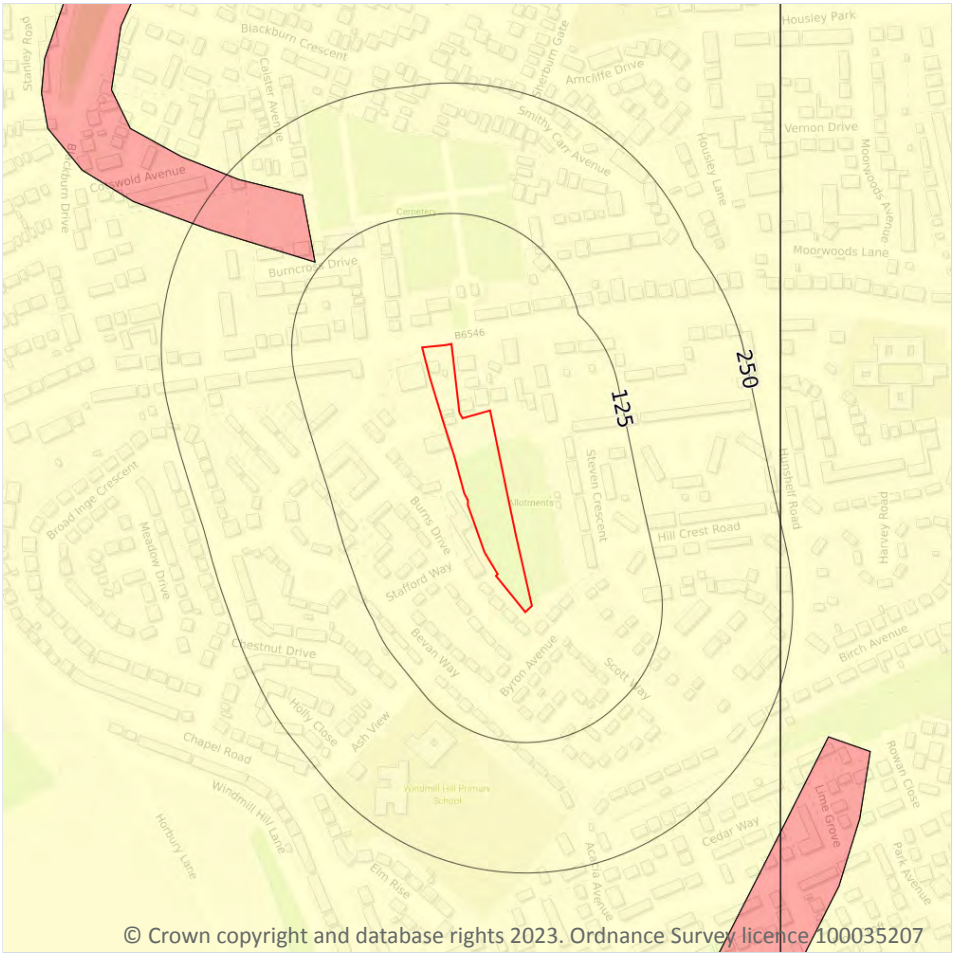
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 90 >**

Location	Hazard rating	Details
On site	**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	1

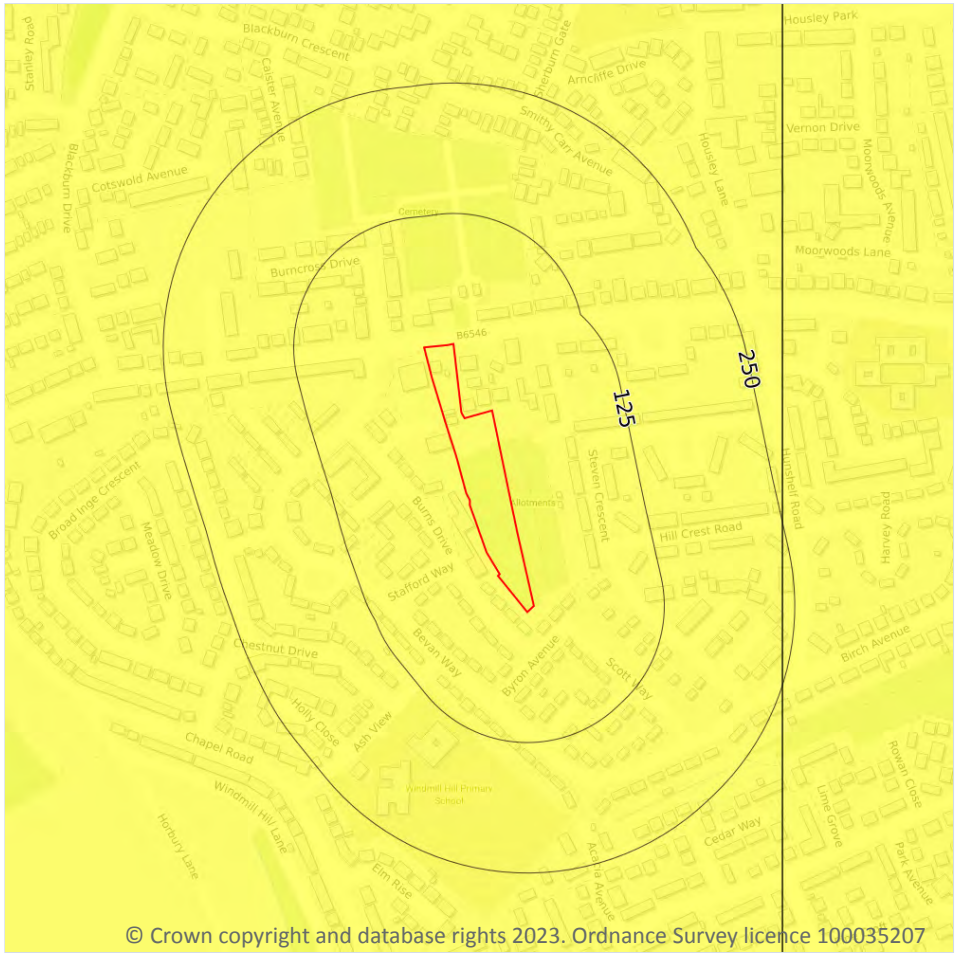
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 91 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m	1

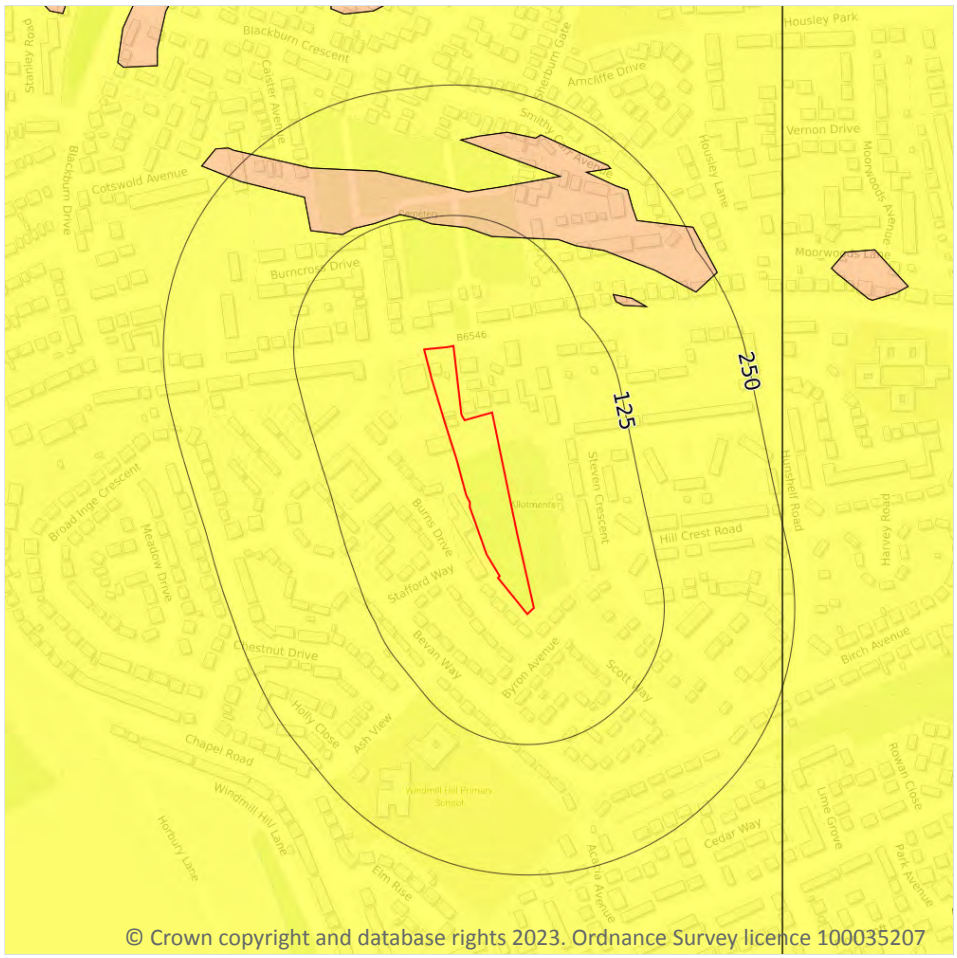
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 92 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 93 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

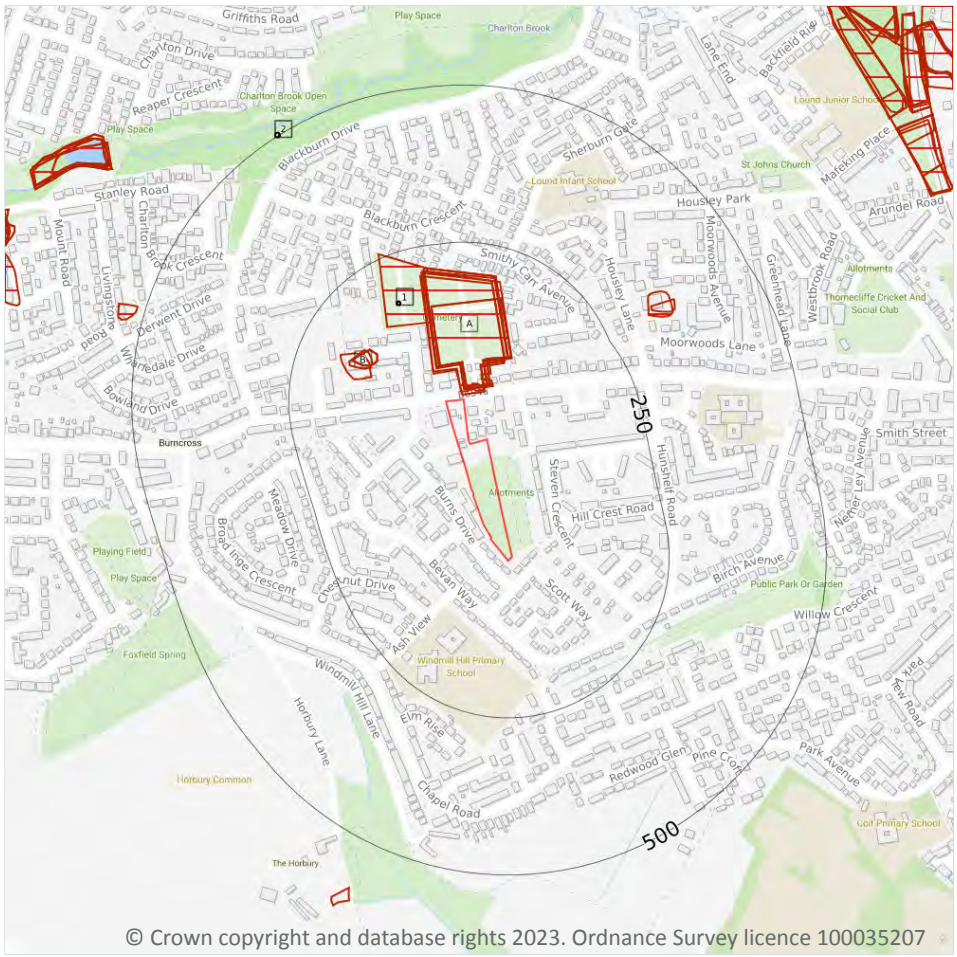
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 94 >**

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	0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	13

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 96 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	7m N	Cemetery	1924	1:10560
A	13m N	Cemetery	1948	1:10560
A	16m N	Cemetery	1992	1:10000
A	16m N	Cemetery		1:10000
A	18m N	Cemetery	1891	1:10560
A	18m N	Cemetery	1901	1:10560
A	19m N	Cemetery	1966	1:10560
A	19m N	Cemetery	1951	1:10560
A	19m N	Cemetery	1980	1:10000
B	125m NW	Unspecified Ground Workings	1924	1:10560
B	127m NW	Unspecified Heap	1891	1:10560
B	127m NW	Unspecified Heap	1901	1:10560
B	132m NW	Unspecified Heap		1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	13

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 96 >**

ID	Location	Land Use	Year of mapping	Mapping scale
1	170m NW	Unspecified Shaft	1901	1:10560
2	498m NW	Unspecified Old Shaft	1903	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
-	882m NE	Colliery	1938	1:10560
-	883m N	Old Ironstone Pits	1938	1:10560
-	883m N	Old Ironstone Pits	1903	1:10560
-	953m N	Old Ironstone Pits	1938	1:10560
-	953m N	Old Ironstone Pits	1903	1:10560
-	985m NE	Unspecified Shaft	1951	1:10560
-	987m N	Old Ironstone Pits	1938	1:10560
-	987m N	Old Ironstone Pits	1903	1:10560
-	991m NE	Unspecified Shaft	1938	1:10560
-	991m NE	Unspecified Shaft	1903	1:10560
-	993m N	Old Ironstone Pits	1951	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	1

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.

Location	Mineral type
51m N	Unspecified

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 104 >**

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	12

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 km^2. 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 km^2; 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 mg/kg**	**120 - 180 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**15 - 30 mg/kg**
2m S	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
2m S	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
11m SE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
15m SE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
15m SE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
22m S	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	120 - 180 mg/kg	15 - 30 mg/kg
29m S	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	120 - 180 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 km^2).

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 km^2.

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

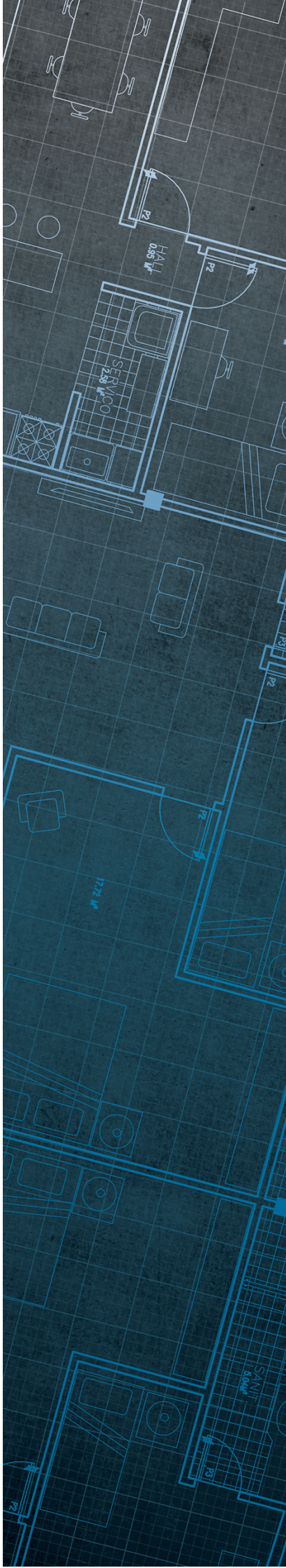
The Coal Authority

Consultants

Coal Mining Report

241, Burncross Road, Sheffield
South Yorkshire
S35 1RZ

Date of enquiry:	**21 November 2023**
Date enquiry received:	**21 November 2023**
Issue date:	**21 November 2023**
Our reference:	**51003390552001**
Your reference:	**GS-VRC-386-QMD-MZA**



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

241, Burncross Road, Sheffield
South Yorkshire
S35 1RZ

Approximate position of property

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Section 1 – Mining activity and geology

Past underground mining
No past mining recorded.

Probable unrecorded shallow workings
Yes.

Spine roadways at shallow depth
No spine roadway recorded at shallow depth.

Mine entries
None recorded within 100 metres of the enquiry boundary.

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

SY3	5635A	OC242
5635		

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
WHINMOOR	Coal	Yes	Within	N/A	38
WHINMOOR	Coal	Yes	21.6	South-West	338

Geological faults, fissures and breaklines
No faults, fissures or breaklines recorded.

Opencast mines
Please refer to the “Summary of findings” map (on separate sheet) for details of any opencast areas 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

Based on the responses in this report, no further information has been highlighted.

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.

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 Coal Authority

Summary of findings

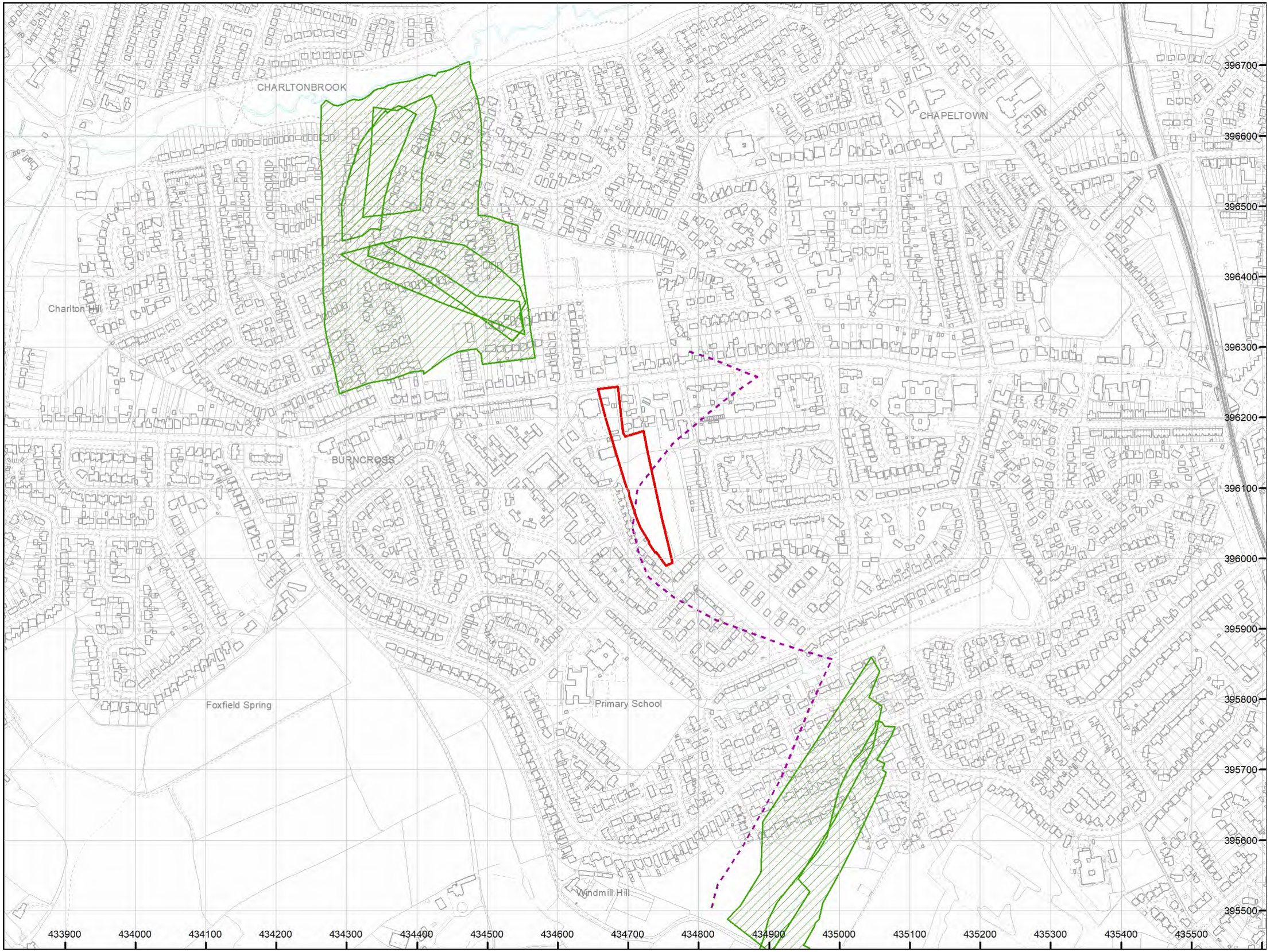
The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown

Outcrop (Conjectured)

Unlicensed opencast site



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Holst Soil Engineering Limited

Borehole No. 1

BOREHOLE LOG

Contract No. S11136/F2554
Location Ecclesfield, Windmill School.
Client West Riding County Architect.
Method of Boring Percussion
Diameter of Borehole 203mm SK 34655 95902

Sheet 1 of 1
Chainage
Ground Level
Date 28.6.73

Description of Strata	Legend	Depth below G.L.(m)	Thickness of Strata(m)	Type of Sample	c KN/sq.m	ø deg.	m.c. %	γ Kg/cum	N
Firm dark brown silty stoney CLAY				0.50	110	14	24.2	1680	
		1.30	1.30	1.50					
Firm brown/grey mottled silty CLAY with sandstone fragments.		1.80	0.50		48	7	29.1	1990	
Highly weathered dark brown shaley MUDSTONE		2.00	0.20	2.00					44 for 0.15m
Weathered light brown fine grained micaceous SANDSTONE		3.05	1.05	2.80					90 for 0.15m

Type of Sample
□ Undisturbed Sample
○ Disturbed Sample
△ Water Sample
I Penetration Test
c Apparent Cohesion
ø Angle of Friction
m.c. Moisture Content
γ Bulk Density
N S.P.T. Value

Remarks (Observations of Ground Water etc)

Borehole dry

Water levels are subject to seasonal or tidal variations and should not be taken as constant

Holst Soil Engineering Limited

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Sheet 1 of 1
Chainage
Ground Level
Date 28.6.73

Description of Strata	Legend	Depth below G.L.(m)	Thickness of Strata(m)	Type of Sample	c KN/sq.m	ø deg.	m.c. %	γ Kg/cum	N
Firm dark brown silty stoney CLAY				0.50	110	14	24.2	1680	
		1.30	1.30	1.50					
Firm brown/grey mottled silty CLAY with sandstone fragments.		1.80	0.50		48	7	29.1	1990	
Highly weathered dark brown shaley MUDSTONE		2.00	0.20	2.00					44 for 0.15m
Weathered light brown fine grained micaceous SANDSTONE		3.05	1.05	2.80					90 for 0.15m

Type of Sample
□ Undisturbed Sample
○ Disturbed Sample
△ Water Sample
I Penetration Test
c Apparent Cohesion
ø Angle of Friction
m.c. Moisture Content
γ Bulk Density
N S.P.T. Value

Remarks (Observations of Ground Water etc)

Borehole dry

Water levels are subject to seasonal or tidal variations and should not be taken as constant

Holst Soil Engineering Limited

Borehole No. 2

BOREHOLE LOG SK 39 NW 134

Contract No. SI 1136/F2554
Location Ecclesfield, Windmill School.
Client West Riding County Architect.
Method of Boring Percussion
Diameter of Borehole 203mm SK 34679 95882

Sheet 1 of 1
Chainage
Ground Level
Date 29.6.73

Description of Strata	Legend	Depth below G.L(m)	Thickness of Strata(m)	Type of Sample	c KN/sq.m	ø deg	m.c. %	γ Kg/cum	N
Firm dark brown/grey mottled silty CLAY withsandstone fragments.				0.50 □	90	5	26.2	1900	
				1.50 □	46	0	28.5	2050	
		1.95	1.95						
Highly weathered light brown fine drained SANDSTONE with thin dark brown MUDSTONE laminations.				2.50 I					125 for 0.15m
		3.05	0.15	3.00 H					280 for 0.15m

Type of Sample
□ Undisturbed Sample
○ Disturbed Sample
△ Water Sample
I Penetration Test
c Apparent Cohesion
ø Angle of Friction
m.c. Moisture Content
γ Bulk Density
N S.P.T. Value

Remarks (Observations of Ground Water etc)

Borehole dry

Water levels are subject to seasonal or tidal variations and should not be taken as constant

APPENDIX E

(i) Conceptual Model

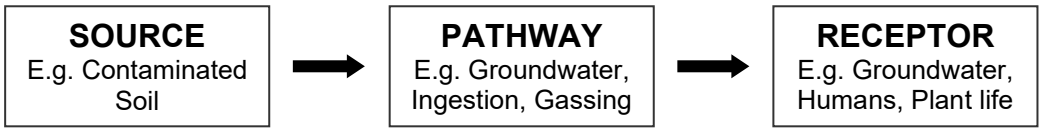
The report aims to identify land which could potentially be affected by contamination, such that it could affect the value or re-use of the land, or such that mitigation would be required for certain proposed end uses of the land.

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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