GEOENVIRO

SOLUTIONS LIMITED

PHASE I DESKTOP STUDY AND PRELIMINARY RISK ASSESSMENT REPORT

AT

LAND TO THE REAR OF 25 THE DELL, HUDDERSFIELD, HD2 2HA

FOR

MR J ARNOLD

Report Reference: 2825-22 PI

GeoEnviro Solutions Ltd
Unit 7, Springvale Works,
Brookfoot Lane,
Brighouse,
HD6 2RA

www: geoenvirosolutions.com

QUALITY ASSURANCE

	Name	Position	Date
Prepared by:	Richard Caine	Senior Engineer	November 2022
Reviewed by:	Rob Lewis	Director	November 2022
Approved by:	Rob Lewis	Director	November 2022

ISSUE STATUS

Version	Date	Description	Prepared	Reviewed	Approved
1	November 2022	First Issue	-	-	-

CONTENTS

APPENDICES

Appendix	Information
1	Drawings and Plans
2	Groundsure Enviro + Geo Insight Report
3	Historical Ordnance Survey Maps
4	Risk Assessment Matrix

LIST OF ACRONYMS

Acronym	Meaning
BGS	British Geological Survey
BH	Borehole
CDM	Construction Design and Management
CL:AIRE	Contaminated Land: Applications In Real Environments
CLR	Contaminated Land Report
COSHH	Control Of Substances Hazardous to Health
CSM	Conceptual Site Model
DCP	Dynamic Cone Penetrometer
DEFRA	Department for Environment Foods and Rural Affairs
DoE	Department of Environment
DP	Dynamic Probe
DWS	Drinking Water Standard
EA	Environment Agency
EQS	Environmental Quality Standard
GAC	Generic Acceptance Criteria
HA	Hand Auger
HP	Hand Pit
LPA	Local Planning Authority
LQM	Land Quality Management
mbgl	Metres Below Ground Level
MP	Mackintosh Probe
NGR	National Grid Reference
NPPF	National Planning Policy Framework
OS	Ordnance Survey
SGV	Soil Guideline Value
SPOSH	Significant Possibility of Significant Harm
SPT	Standard Penetration Test
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
SSV	Soil Screening Value
TP	Trial Pit
TT	Trial Trench
WS	Windowless Sample / Window Sample
WSV	Water Screening Value

1. INTRODUCTION

1.1 BACKGROUND AND INSTRUCTION

GeoEnviro Solutions Limited (GES) were instructed by Mr J. Arnold (the Client) to produce a Phase I: Desktop Study and Preliminary Risk Assessment Report for the site located to the rear of 25 The Dell, Huddersfield, HD2 2HA.

A site location plan is presented as Drawing No. GES 2825-22/01 in **Appendix 1**.

This report is written in accordance with the guidance set out in Land Contamination Risk Management (LCRM), Guiding Principles for Land Contamination (GPLC) 1 – 3, and the National Planning Policy Framework (NPPF).

1.2 PROPOSED DEVELOPMENT

It is currently proposed to construct a new two storey residential development at the site.

An undated proposed development plan, as provided to GES, drawn by Unite Design, referenced HD-A-488-01, is available within **Appendix 1**.

This proposed development plan has been utilized in the preparation of this risk assessment, based upon a 'Residential with Homegrown Produce' end-use, if an alternative development is subsequently proposed this assessment may need revising and should not be relied upon in its present outcome.

1.3 OBJECTIVES

The objectives of this Phase I report are to:

- Gain an understanding of any concerns of the regulatory authorities (Local Authority Planning, Building Control and Environmental Health departments and the Environment Agency) regarding local land filling, flooding, mining, quarrying and other concerns.
- Establish the environmental setting, including sensitivity in relation to human health, surface water, groundwater, and ecological receptors.
- Review historical and recent uses to assess the potential for contamination to be present from past and current land-use.
- Assess by qualitative means the potential nature and extent of contamination from those uses and the environmental risk and liabilities which may affect the site redevelopment.
- Identify the prevalent source-pathway-receptor linkages present on site by means of a Tier 1 contamination risk assessment which incorporates the formulation of a Conceptual Site Model.

1.4 INFORMATION SOURCES

During the production of this report the following primary information sources have been utilised:

- Enviro + Geo Insight data obtained from Groundsure (4C Group Ltd).
- Historical Ordnance Survey mapping at scales ranging from 1:1,250 to 1:10,560, obtained from Groundsure.
- BGS Open Geoscience online geological mapping tool.
- OS Open Data online mapping tool.
- Coal Authority Online interactive map.

1.5 PREVIOUS INVESTIGATIONS

GES have not been provided with any previous investigation reports and are unaware that any have been carried out to date.

2. SITE LOCATION AND DESCRIPTION

2.1 SITE LOCATION

The site is located at land to the rear of 25 The Dell, Huddersfield, HD2 2HA, at approximate National Grid Reference (NGR) 414655, 419853 (centre of the site).

2.2 SITE DESCRIPTION

At this stage, a site reconnaissance has not been carried out; as such the site description has been taken in part from Google Earth and Google Street View imagery.

The site comprises a roughly rectangular plot of land with an area of 0.05 Ha, which slopes gently to the southeast and is accessible through 25 The Dell or through a double gate off Woodside Lane.

The site is generally grassed, with a small parking area in the north, adjacent to the double gate. The site is bound to the west, north and east by hedges, and is open to the garden of 25 The Dell to the south.

An approximate distribution of the surface covering is given below in Table 2.1.

Table 2.1: Site Surface Covering

Type of Surface Cover	Distribution (%)
Soft Ground (grassed and landscaped areas)	100
Hardstanding	0
Roadways	0
Buildings	0
Water (ponds, streams)	0

Surrounding Area

The current surrounding land use is generally residential and the topography of the surrounding area slopes gently to the southeast.

3. ENVIRONMENTAL AND GEOLOGICAL SETTING

Information on the environmental and geological setting of the site is presented in a Groundsure Enviro + Geo Insight Report prepared for the site; a copy of this report is presented in **Appendix 2**.

3.1 SITE GEOLOGY

The site geology has been assessed by reference to information from British Geological Survey (BGS) mapping summarised in the Groundsure Enviro + Geo Insight data. Information from these sources referenced in this report has been predominantly limited to that identified within 50 m of the site (underlying geology) or 250 m of the site (structural features, borehole records), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Made Ground

There are no records of Made Ground underlying the site.

There are records of Made ground and Worked Ground between 120 and 136 m to the southeast of the site, and records to Works Ground and Infilled Ground between 229 and 241 m southwest of the site.

Superficial Ground and Drift Deposits

There are no superficial deposits recorded to underlie the site.

Bedrock Geology

The site is recorded to be underlain by Grenoside Sandstone, a named sandstone unit of the Pennine Lower Coal Measures Formation (PLCM). Strata of the PLCM may be present in the extreme northeast of the site.

The Grenoside Sandstone is generally described as a '*fine-grained, thinly bedded, cross-laminated, micaceous and carbonaceous sandstone*' (BGS Lexicon Description).

The PLCM are generally described as *'interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams'* (BGS Lexicon Description).

Landslips

There are no records within 250 m.

Linear Features

There are no records of linear features directly under the site.

A coal seam is recorded 98 m northeast of the site, review of the BGS 1:50,000 scale geological map (Sheet 77, Huddersfield) records this to be the Better Bed Coal Seam, with a recorded thickness of between 0.10 and 0.90 m.

The 1:10,000 scale mapping in the Groundsure Report records a coal seam located 126 m north of the site, this also relates to the Better Bed Coal Seam.

Natural Ground Subsidence

The following hazard ratings applicable to the site are presented in the Enviro + Geo Insight Report:

- Shrink / swell clays: Negligible.
- Running sands: Negligible.

- Compressible deposits: Negligible.
- Collapsible deposits: Very low.
- Landslides: Very low.
- Ground dissolution of soluble rocks: Negligible.

3.2 BOREHOLE RECORDS

There are no BGS boreholes recorded within 50 m of the site.

3.3 HYDROGEOLOGY

These records are derived by Groundsure from Environment Agency and British Geological Survey data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to those identified within 250 m of the site (or 1000 m of the site for abstractions), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

The Environment Agency aquifer designations used within the following sections are summarised in Table 3.1, below.

Table 3.1: Aquifer Designations

Definition	Description
Principal Aquifer	Layers with high intergranular and/or secondary permeability capable of supporting water supplies at strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Major Aquifers.
Secondary (A) Aquifer	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.
Secondary (B) Aquifer	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water bearing parts of former Non-Aquifers.
Secondary Undifferentiated Aquifer	Layers that cannot be attributed to a category A or B rock type. These layers could have previously been described as a minor or a non-aquifer due to their variable characteristics.
Unproductive strata	Rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Aquifer within Bedrock Geology

As a result of the bedrock geology, a Secondary A Aquifer is recorded to underlie the site.

The site is recorded to be located within the Aire & Calder Carb Limestone / Millstone Grit / Coal Measures Water Framework Directive Groundwater body, which had a *poor* overall, *poor* chemical and *good* quantitative classification in 2019.

Permeability of Bedrock Deposits

The minimum and maximum permeability within the Grenoside Sandstone are recorded as being moderate and high, and the flow type is recorded as fracture.

The minimum and maximum permeability within the PLCM are recorded as being low and moderate, and the flow type is recorded as fracture.

Groundwater Vulnerability

The site is recorded to be located within an area where the EA considers the groundwater to have a high vulnerability to mobile pollutants, as summarised in Table 3.2 below.

Table 3.2: Groundwater Vulnerability Definitions

Definition	Description
High Vulnerability	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 Vulnerability	Intermediate between high and low vulnerability.
Low Vulnerability	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.

Groundwater Abstraction Licences

There are no licensed ground water abstractions within 500 m of site.

Potable Water Abstraction Licences

There are no potable abstractions within 500 m.

Source Protection Zones

The is no Source Protection Zone within 500 m.

3.4 HYDROLOGY

These records are derived by Groundsure from Environment Agency and British Geological Survey data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site (aquifers, surface water) or 1000 m of the site (abstractions), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Ordnance Survey Water Network

There are no entries in the Ordnance Survey Water Network register within 250 m of the site.

Surface Water Features

There are no major surface water courses within 250 m of the site.

Water Framework Directive Surface Water Bodies and Catchments

The site is recorded to be located within the Colne from River Holme to River Calder Water Framework Directive surface water body, which had a *moderate* overall, *fail* chemical and *moderate* ecological classification in 2019.

Surface Water Abstraction Licences

There are no licensed surface water abstractions within 200 m of site.

3.5 ENVIRONMENTALLY SENSITIVE AREAS

These records are derived by Groundsure from Environment Agency, Natural England, Historic England, English Heritage, Forestry Commission and UK Government data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 500 m of the site (environmental designations) or 250 m of the site (habitat, visual and cultural designations), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Environmental and Habitat Designations

There are two areas of Designated Ancient Woodland within 250 m of the site, the closest of which is located 5 m northeast of the site, relating to an ancient replanted woodland.

There are six Priority Habitat Inventories within 250 m of the site, the closest of which is located 5 m northeast of the site, relating to an area of deciduous woodland.

There are no other environmental and habitat designations within 250 m of site.

Visual and Cultural Designations

There is one listed building within 250 m of the site, recorded 148m south of the site

There are no other visual and cultural designations within 250 m of site.

4. PAST LAND USE AND POTENTIAL CONTAMINANT SOURCES

Information on past land use and potential contaminant sources is presented in a Groundsure Enviro + Geo Insight Report prepared for the site; a copy of this report is reproduced in **Appendix 2**.

4.1 LAND USE RECORDS

These records are derived by Groundsure from historical mapping and each record corresponds to a particular map revision date. Thus, several records may refer to the same feature where it is present over time. Groundsure has in some cases grouped such records in the Enviro + Geo Insight report. Differences in distances quoted from the study site may be due to expansion of the feature over time or geolocation errors.

Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

Historical Industrial Land Uses

There are 22 historical land uses recorded within 250 m of the site, the closest of which is located 97 m east of the site, relating to unspecified ground workings mapped between 1966 and 1985. The remaining records relate to unspecified heaps, unspecified disused shafts, unspecified ground workings and unspecified quarry.

There are a further 22 records within 500 m of the site, which have similar uses to those listed above, along with records of unspecified pit and unspecified mills.

There are likely to duplicates of the same entry within these records.

Historical Tanks

There are no tanks recorded within 250 m of the site.

There are two records within 500 m of the site, the closets of which relates to an unspecified tank located 493 m south of the site.

There are likely to duplicates of the same entry within these records.

Historical Energy Features

There are two historical energy features recorded within 250 m of the site, both of which relate to electricity substations and are located 132 m south of the site, mapped in 1990 and 1994.

There are 10 historical energy features recorded within 500 m of the site, relating to electricity substations and gas governors.

Neither of the records within 250 m of the site predate the 1981 ban on PCB's. Therefore, considering the distances between the features and the site, the potential for PCB contamination at the site is considered to be very low.

Historical Petrol Stations

There are no records of historical petrol stations within 500 m.

Historical Garages

There are no records of historical garages within 500 m.

Historical Military Land

There are no records of historical military land within 500 m.

Current or Recent Industrial Land Uses

There is one record of current or recent industrial land uses within 500 m, relating to an electricity substation located 142 m south of the site.

Current or Recent Petrol Stations

There is one record of current or recent petrol stations within 500 m, relating to an open fuel station, located 307 m south of the south.

Electricity Cables

There are no records of high voltage (HV) underground electricity cables within 500 m.

Gas and / or Oil Pipelines

There are no records of medium- or high-pressure underground gas or oil supply pipelines within 500 m of the site.

Railway Infrastructure

There are no records of railway infrastructure within 500 m.

4.2 ENVIRONMENTAL PERMITS, INCIDENTS AND REGISTERS

These records are derived by Groundsure from local authority, Health and Safety Executive and Environment Agency data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

Sites Determined as Contaminated Land

There are no records of sites determined as contaminated land under Part 2A of the Environmental Protection Act 1990 within 250 m.

Control of Major Accident Hazards (COMAH)

There are no records within 250 m of the site.

Regulated Explosive Sites

There are no records within 250 m of the site.

Planning Hazardous Substances Consents

There are no records within 250 m of the site.

Records of Historic IPC Licensed Activities

There are no records within 250 m of the site.

Records of Part A (1) Licensed Activities

There are no records within 250 m of the site.

Records of Part A (2)/B Licensed Activities and Pollutant Release

There are no records within 250 m of the site.

Records of Radioactive Substance Authorisations

There are no records within 250 m of the site.

Licensed Discharges to Controlled Waters

There are no records within 250 m of the site.

Pollutant release to Surface Waters (Red List)

There are no records within 250 m of the site.

Pollutant Release to Public Sewer

There are no records within 250 m of the site.

List 1 and List 2 Dangerous Substances

There are no records within 250 m of the site.

Substantiated Pollution Incidents

There are no records within 250 m of the site.

Pollution Inventory Substances

There are no records within 250 m of the site.

Pollution Inventory Waste transfers

There are no records within 250 m of the site.

Pollution Inventory Radioactive Waste

There are no records within 250 m of the site.

4.3 WASTE AND LANDFILL

These records are derived by Groundsure from Environment Agency, British Geological Survey, Ordnance Survey (interpreted by Groundsure) and local authority data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 500 m of the site (landfills) or 250 m of the site (non-landfill waste operations), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Active or Recent Landfill

There are no records within 500 m of the site.

Historic Landfill

One historic landfill is recorded 95 m southeast of the site, relating to Brackenhall Dam, licenced by Kirklees Metropolitan Borough Council, recorded to receive inert and commercial waste, with the first recorded on 31st December 1984 and last recorded on the 31st December 1986.

Non-Landfill Waste Records

There are no historical non-landfill waste records within 500 m of the site.

4.4 MINING, GROUND WORKINGS AND NATURAL CAVITIES

These records are derived by from British Geological Survey, Ordnance Survey (interpreted by Groundsure), Coal Authority, Peter Brett Associates, Johnson Poole and Bloomer, Cheshire Brine Subsidence Compensation Board, British Gypsum, Mining Searches UK, Kaolin and Ball Clay Association and local authority data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Natural Cavities

There are no records within 250 m of the site.

Mining Cavities

There is one record within 250 m of the site, relating to Woodside Mine, located 235 m south of the site and the extraction of flagstone.

BritPits Data (Surface and Underground Mineral Workings)

There are two records within 250 m of the site, both of which relate to the ceased Woodside Mine, located between 157 and 181 m south of the site, where sandstone is recorded to have been extracted.

Historical Mineral Planning Areas

There are no records within 250 m of the site.

Surface Ground Workings

There are 31 records within 250 m of the site, the closest three records are located 97 m east of the site, relating to unspecified ground workings mapped between 1966 and 1985.

Underground Workings

There are ten records within 250 m of the site, the closest of which is located 149 m south of the site, relating to an unspecified disused shaft, mapped in 1975.

Coal Mining

The site is recorded within a Coal Mining Reporting Area.

The site is not located within a Development High Risk Area (DHRA). A DHRA and area of Probably Shallow Coal Mine Workings are located approximately 110 m northeast of the site.

A Coal Mining Risk Assessment was outside the scope of this report.

Non-Coal Mining

There are two records within 250 m of the site, the closest of which is located 5 m northeast of the site, relating to the underground mining of Elland Flags Sandstone. The Groundsure report states that “underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered”.

There are no records within 250 m for brine extraction, gypsum, tin or clay mining.

4.5 RADON

These records are derived by Groundsure from British Geological Survey and Public Health England data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified on or within 50 m of the site.

The study site is not located within a Radon Affected Area, as less than 1% of properties are above the Radon Action Level. No radon protection measures are required.

4.6 BACKGROUND SOIL CHEMISTRY

Values estimated by BGS for background concentrations of six potentially harmful elements are provided as follows:

- Arsenic: 25-35 mg/kg.
- Lead: 100-200 mg/kg.
- Bioaccessible lead: 60-120 mg/kg.
- Cadmium: 1.8 mg/kg.
- Chromium: 90-120 mg/kg.
- Nickel: 15-30 mg/kg.

These values are not considered to be elevated with respect to guideline values for a 'Residential with Homegrown Produce' end-use.

5. HISTORICAL MAPPING STUDY

5.1 HISTORICAL MAPPING

The object of this search was to report on the evidence of site history and redevelopment of the site and its environs from available County Series and Ordnance Survey Maps at scales ranging from 1:1,250 to 1:10,560 dating from 1854 to the present day, and Getmapping PLC aerial photography dating from 2000 to the recent past, as provided by Groundsure.

Information in the historical mapping study has been predominantly limited to that identified on the site or within 100 m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

Each map or photographs only represents a "snap-shot" of the site and its environs at the date of the survey. Changes that had occurred at other times may not have been recorded on the maps and could represent an unidentified hazard to the site.

The information reported might not represent all pertinent information that could be obtained. The interpretation of the maps and/or other data commented on in this report is subjective.

The Historical Ordnance Survey Maps were obtained from Groundsure and are available for review within **Appendix 3** and are summarised in Table 5.1 below.

Table 5.1: Historical Mapping Review

Date	Scale	On-Site	Offsite
1854	1:10,560	The site comprises undeveloped land.	A lane is present to the immediate north of the site, with an area of woodland beyond. The surrounding area generally comprises undeveloped land.
1889-1892	1:10,560	No significant changes from previous map.	No significant changes from previous map.
1905	1:10,560	No significant changes from previous map.	No significant changes from previous map.
1906	1:2,500	No significant changes from previous map.	No significant changes from previous map.
1918	1:2,500	No significant changes from previous map.	No significant changes from previous map.
1930-1931	1:10,560	No significant changes from previous map.	Residential properties have been constructed from approximately 40 m east of the site.
1938	1:10,560	No significant changes from previous map.	No significant changes from previous map.
1948	1:10,560	No significant changes from previous map.	No significant changes from previous map.
1951-1956	1:10,560	No significant changes from previous map.	No significant changes from previous map.
1958-1959	1:1,250	No significant changes from previous map.	Residential properties are present to the immediate east and west of the site.
1959	1:2,500	No significant changes from previous map.	No significant changes from previous map.
1965-1969	1:10,560	No significant changes from previous map.	No significant changes from previous map.

Date	Scale	On-Site	Offsite
1975-1976	1:10,000	No significant changes from previous map.	No significant changes from previous map.
1979	1:1,250	No significant changes from previous map.	Residential properties have been constructed from approximately 70 m southwest of the site.
1981-1985	1:10,000	No significant changes from previous map.	No significant changes from previous map.
1987-1992	1:1,250	No significant changes from previous map.	Residential properties have been constructed to the immediate south of the site.
1990-1993	1:1,250	No significant changes from previous map.	No significant changes from previous map.
1994	1:1,250	No significant changes from previous map.	No significant changes from previous map.
2001	1:10,000	No significant changes from previous map.	No significant changes from previous map.
2003	1:2,500	No significant changes from previous map.	No significant changes from previous map.
2010	1:10,000	No significant changes from previous map.	No significant changes from previous map.
2022	1:10,000	No significant changes from previous map.	No significant changes from previous map.

5.2 AERIAL PHOTOGRAPHY

2000 Aerial Photo

The 2000 aerial photo is generally unclear; however, the site appears to comprise an area of garden, covered with grass and sporadic trees. The area to the east, south and west of the site is developed with residential properties, and the area to the north of the site comprises an area of woodland.

2012 Aerial Photo

The 2012 aerial photo shows no significant changes from the previous aerial photograph.

2018 Aerial Photo

The 2018 aerial photo shows no significant changes from the previous aerial photograph.

Recent Aerial Photograph

Recent aerial photography shows no significant changes from the previous aerial photograph.

The aerial photographs are included in the Groundsure Enviro + Geo Insight Report and are available for review within **Appendix 3**.

5.3 SUMMARY

Review of available historical ordinance surveys maps indicates the site has been undeveloped since at least 1854. The surrounding area was developed with residential properties between 1930 and 1992.

6. FRAMEWORK FOR ASSESSMENT OF CONTAMINATION

Environmental risks are assessed within the risk management framework established in Part IIA of the Environmental Protection Act (EPA) 1990 introduced by Section 57 of the Environment Act 1995 which provides a statutory definition of contaminated land. To fall within this definition it is necessary that, as a result of the condition of the land, substances may be present on or under the land such that:

(a) Significant harm is being caused or there is a significant possibility of such harm being caused.

or

(b) *Pollution of controlled water is being, or is likely to be, caused.*

Risk from contamination is assessed by consideration of possible linkages between contaminant sources and potential receptors which could be harmed or polluted.

The key aspect of the framework is the development of a Conceptual Site Model (CSM) which illustrates the spatial interaction between the potential sources and receptors on site.

The information presented in this report was collated and evaluated to develop an initial CSM to assess ground contamination issues at the site.

For a risk of pollution or environmental harm to occur as a result of ground contamination, ***all*** of the following elements must be present:

- A source, i.e., a substance that is capable of causing pollution or harm.
- A receptor, i.e., something which could be adversely affected by the contaminant.
- A pathway, i.e., a route by which the contaminant can reach the receptor.

If one of these elements is absent there can be no significant risk. If all are present then the magnitude of the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptor and the nature of the migration pathway.

Potential sources, pathways and receptors are identified in the sections below and the risks associated with possible pollutant linkages outlined.

6.1 SOURCES

On-Site Sources

No on-site sources have been identified from the historical study and the Enviro + Geo Insight data.

Offsite Sources

The following offsite sources have been identified from the historical study and the Enviro + Geo Insight data:

- Possible underground coal or sandstone mining.

There are further entries present, but these are considered far enough from the site to pose no risk.

The following contaminants are potentially associated with the offsite sources.

- Hazardous Ground Gases.

6.2 PATHWAYS

For contaminants to reach potential receptors, there must be a viable **pathway** for the contaminant. Potential pathways that may affect the migration of contaminants are listed in Table 6.1, below.

Table 6.1: Pathways

Pathway	Medium	Properties
Migration of Ground Gas	Gaseous flow	Infilled land material is likely to be variable in composition. Migration through granular material within superficial deposits is possible.

6.3 RECEPTORS

The site-specific **receptors** that could be potentially affected by the contamination hazards identified during this preliminary appraisal are summarised in Table 6.2, below:

Table 6.2: Receptors

Category	Receptor	Properties
Humans	End users (such as residents and visitors)	Potential contact with ground gas within enclosed buildings.
	Construction workers	Potential contact with ground gas within excavations.
Property	Materials and site structures	Foundations and site services may be damaged by potentially aggressive compounds present in soils.

7. QUALITATIVE RISK ASSESSMENT

Potential pollutant linkages are identified using the source-pathway-receptor framework detailed above. An assessment of the potential significance of each linkage is then made by consideration of the likely magnitude and mobility of the source, the sensitivity of the receptor and nature of the migration/exposure pathways.

This qualitative risk assessment has been undertaken in accordance with Annex 4 of the National House Building Council/Environment Agency/Chartered Institute of Environmental Health R&D publication 66, Guidance for the Safe Development of Housing on Land Affected by Contamination (NHBC/EA/CIEH, 2008) which updates and supersedes CIRIA C552: Contaminated Land Risk Assessment, A Guide to Good Practice (Rudland et al., 2001).

A summary of the risk assessment protocols, and subsequent risk assessment matrix is provided in **Appendix 4**.

An assessment of the likelihood of the risk being realised and the magnitude of potential risk is presented below to give an estimation of the significance of each potential pollutant linkage identified. Where it is considered that there is no credible linkage, this is indicated in the table. In accordance with the R&D66 guidance, if there is no pollution linkage then there is no need to apply tests for probability and consequence.

The assessment is undertaken based on the current proposals for the site, at the time of issuing this report, which would be classed as a generic end land use of 'Residential with Homegrown Produce'. Any change in the development proposals for the site involving a change in end use class may result in a requirement for this assessment to be revised.

8. PRELIMINARY CONCEPTUAL SITE MODEL

Contaminant Source	Pathways	Receptor	Pollutant Linkage	Classification of Probability	Classification of Consequence	Level of Risk	Justification
On Site: Made Ground soils on site possibly containing elevated metals, other organics such as TPH, PAH, phenols, VOC and SVOCs.	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Considered inactive	-	-	-	No source identified.
		Construction Workers	Considered inactive	-	-	-	No source identified.
	Leaching through soils and migration via groundwater or soil pore moisture	Controlled Waters	Considered inactive	-	-	-	No source identified.
	Permeation of water pipes	Construction materials, future end users and site visitors	Considered inactive	-	-	-	No source identified.
	Uptake	Plant and Wildlife	Considered inactive	-	-	-	No source identified.
On Site: Asbestos at/near ground surface in Made Ground soils.	Inhalation of fibres in airborne dust	Future end users and site visitors	Considered inactive	-	-	-	No source identified.
		Construction Workers	Considered inactive	-	-	-	No source identified.

Contaminant Source	Pathways	Receptor	Pollutant Linkage	Classification of Probability	Classification of Consequence	Level of Risk	Justification
On Site: Ground Gases (CH_4, CO_2, CO, H_2S) from on-site Made Ground.	Gas migration and build up within buildings (explosion/ asphyxiation risk)	Future end users and building structures.	Considered inactive	-	-	-	No source identified.
Offsite: Ground Gases (CH_4, CO_2, CO, H_2S) from off-site historical landfilling activities.	Gas migration and build up within buildings (explosion/ asphyxiation risk)	Future end users and building structures.	Considered potentially active	Low Likelihood	Minor	Low ●	There is the potential for underground coal mining and Elland flag workings to have been undertaken in the vicinity of the site. The risk to the site from offsite ground gas should be re-assessed on completion of a Coal Mining Risk Assessment.

9. RECOMMENDATIONS

9.1 PROPOSED SITE INVESTIGATION

Based on the information obtained for the formation of this report, we would recommend that the scope of any ground investigation be set on completion of a Coal Mining Risk Assessment for the site.

9.2 CONSULTEES

It is highly recommended that this report be forwarded to the relevant Local Authority Environmental Health and Planning Departments to seek their comments and subsequent approval, otherwise further works may be required.

9.3 FLOOD RISK ASSESSMENT

This report does not replace a full hydrogeological survey and specialist studies may need to be undertaken to ascertain the risks posed from flooding. Further details on site flood information can be found within the appendices.

9.4 INVASIVE PLANT SURVEY

Any concerns relating to the possible presence of invasive plants should be undertaken by an appropriately qualified surveyor.

9.5 ASBESTOS SURVEY

Any concerns relating to the possible presence of Asbestos or Asbestos Containing Material (ACM) should be undertaken by an appropriately qualified surveyor.

10. RELIANCE AND LIMITATIONS

This report has been prepared by GES with all reasonable skill, care and diligence. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources, together with a site walkover inspection of the site.

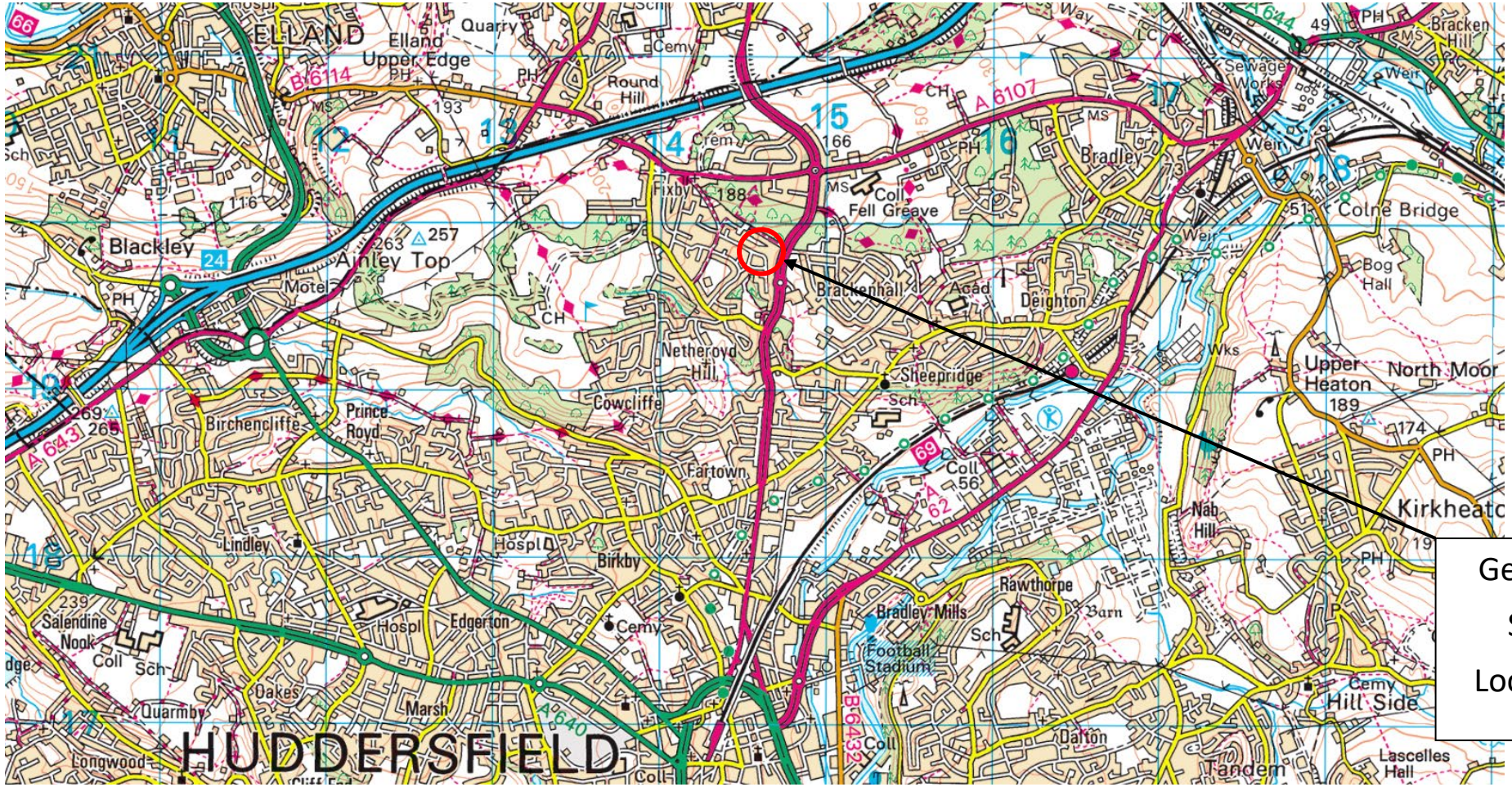
The opinions given in this report have been dictated by the finite data on which are they based and are relevant only to the purpose for which the report was commissioned.

Information reviewed should not be considered exhaustive and accepted in good faith as providing true and representative data with respect to site conditions. Should additional information become available which may influence the opinion expressed in this report, GES reserves the right to review such information and, if warranted, to alter the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site. This is an environmental Phase 1 report and does not consider the geotechnical implications for the site, its redevelopment and proposed future use. Further advice should be sought on geotechnical investigation requirements for the proposed development.

APPENDIX 1

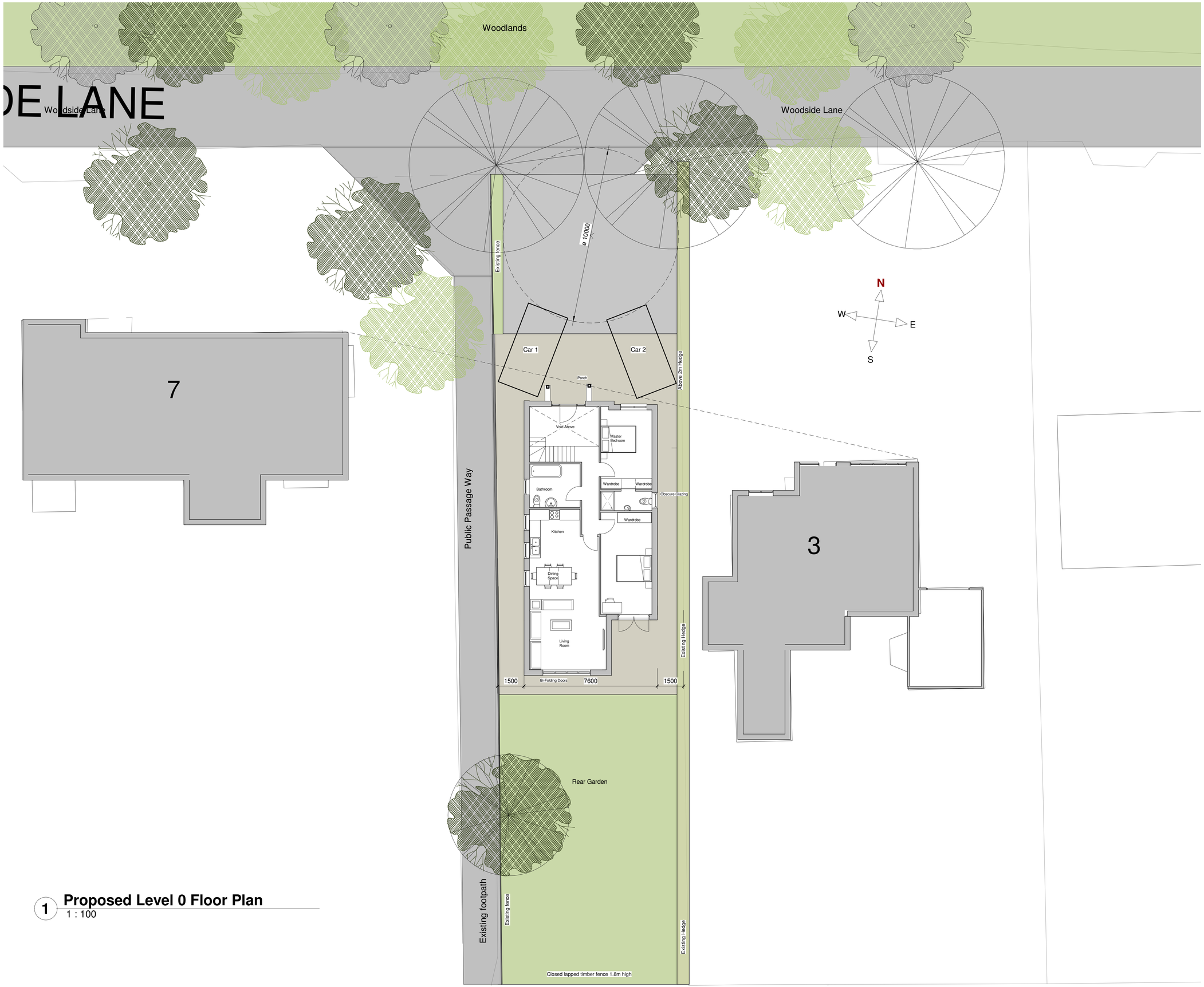
DRAWINGS AND PLANS



GeoEnviro Solutions Ltd
Unit 7 Springvale Works
Brighouse
West Yorkshire
HD6 2RA
Tel: 01484 986010
Email: info@geoenvirosolutions.com
Web: www.geoenvirosolutions.com

N

PROJECT NAME Land to the rear of 25 The Dell, Huddersfield **PROJECT NUMBER** 2825-22	**DRAWING NO.** 2825-22/01	**SCALE** N.T.S
TITLE Site Location Plan	**DATE** November 2022	**DRAWN BY** RC



1 Proposed Level 0 Floor Plan

1 : 100

Location Plan

North Point

Drawing Notes:

Rev:	Description	Revised By:	Issue Date:

Project: 5 Woodside

Cleint: John Arnold

Drawing: Proposed Ground Floor Plan

Scale: 1 : 100@A1 Original Issue Date:

Original Drawn MI Original Checked JA

Drawing: HD-A-488-01 Revision:

Reason For Issue: PLANNING

Unite Designs

T: 07858606182
Mannan_i@hotmail.co.uk

APPENDIX 2

GROUNDSURE ENVIRO + GEO INSIGHT REPORT

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

25, THE DELL, FIXBY, HUDDERSFIELD, HD2 2FD

Order Details

Date: 11/11/2022

Your ref: 2825-22_Woodside_Lane

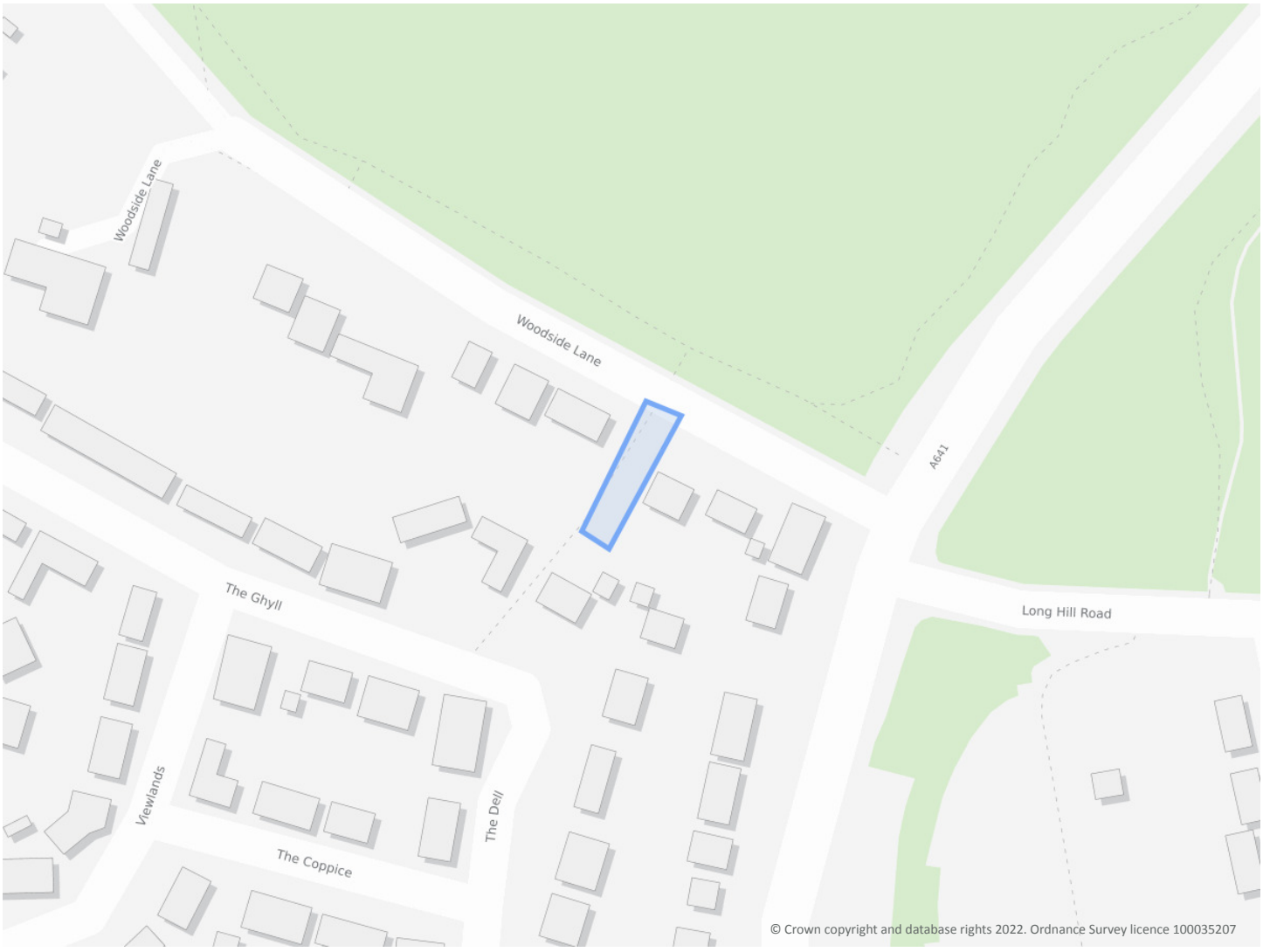
Our Ref: GS-9192741

Site Details

Location: 414654 419846

Area: 0.05 ha

Authority: Kirklees Council



Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	0	0	22	22	-
15	1.2	Historical tanks	0	0	0	2	-
16	1.3	Historical energy features	0	0	2	10	-
16	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	2.1	Historical industrial land uses	0	0	35	36	-
21	2.2	Historical tanks	0	0	0	2	-
22	2.3	Historical energy features	0	0	2	14	-
22	2.4	Historical petrol stations	0	0	0	0	-
23	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
25	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
25	3.4	Historical landfill (EA/NRW records)	0	0	1	0	-
25	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
26	3.7	Waste exemptions	0	0	0	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
27	4.1	Recent industrial land uses	0	0	1	-	-
28	4.2	Current or recent petrol stations	0	0	0	1	-
28	4.3	Electricity cables	0	0	0	0	-
28	4.4	Gas pipelines	0	0	0	0	-
28	4.5	Sites determined as Contaminated Land	0	0	0	0	-

28	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.7	Regulated explosive sites	0	0	0	0	-
29	4.8	Hazardous substance storage/usage	0	0	0	0	-
29	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
29	**4.11**	**Licensed pollutant release (Part A(2)/B)**	0	0	0	1	-
30	4.12	Radioactive Substance Authorisations	0	0	0	0	-
30	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
30	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.15	Pollutant release to public sewer	0	0	0	0	-
31	4.16	List 1 Dangerous Substances	0	0	0	0	-
31	4.17	List 2 Dangerous Substances	0	0	0	0	-
31	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
31	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
32	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
33	5.1	Superficial aquifer	None (within 500m)				
34	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
36	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
37	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38	**5.6**	**Groundwater abstractions**	0	0	0	0	11
41	**5.7**	**Surface water abstractions**	0	0	0	0	4
42	**5.8**	**Potable abstractions**	0	0	0	0	3
43	5.9	Source Protection Zones	0	0	0	0	-
43	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
44	6.1	Water Network (OS MasterMap)	0	0	0	-	-

44	6.2	Surface water features	0	0	0	-	-
45	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
45	**6.4**	**WFD Surface water bodies**	0	0	0	-	-
46	**6.5**	**WFD Groundwater bodies**	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
47	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
47	7.2	Historical Flood Events	0	0	0	-	-
47	7.3	Flood Defences	0	0	0	-	-
48	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
48	7.5	Flood Storage Areas	0	0	0	-	-
49	7.6	Flood Zone 2	None (within 50m)				
49	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
50	**8.1**	**Surface water flooding**	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
52	**9.1**	**Groundwater flooding**	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
53	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
54	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
54	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
54	10.4	Special Protection Areas (SPA)	0	0	0	0	0
54	10.5	National Nature Reserves (NNR)	0	0	0	0	0
55	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
55	**10.7**	**Designated Ancient Woodland**	0	1	1	1	7
56	10.8	Biosphere Reserves	0	0	0	0	0
56	10.9	Forest Parks	0	0	0	0	0
56	10.10	Marine Conservation Zones	0	0	0	0	0
56	**10.11**	**Green Belt**	0	0	0	0	3
57	10.12	Proposed Ramsar sites	0	0	0	0	0

57	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
57	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
57	10.15	Nitrate Sensitive Areas	0	0	0	0	0
58	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
59	10.17	SSSI Impact Risk Zones	0	-	-	-	-
59	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
60	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61	**11.4**	**Listed Buildings**	0	0	1	-	-
62	11.5	Conservation Areas	0	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	**12.1**	**Agricultural Land Classification**	Urban (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	**13.1**	**Priority Habitat Inventory**	0	1	5	-	-
66	13.2	Habitat Networks	0	0	0	-	-
66	13.3	Open Mosaic Habitat	0	0	0	-	-
66	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
67	**14.1**	**10k Availability**	Identified (within 500m)				
69	**14.2**	**Artificial and made ground (10k)**	0	0	4	4	-
71	14.3	Superficial geology (10k)	0	0	0	0	-

71	14.4	Landslip (10k)	0	0	0	0	-
72	14.5	Bedrock geology (10k)	2	0	9	13	-
74	14.6	Bedrock faults and other linear features (10k)	0	0	5	3	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
75	15.1	50k Availability	Identified (within 500m)				
76	15.2	Artificial and made ground (50k)	0	0	1	1	-
77	15.3	Artificial ground permeability (50k)	0	0	-	-	-
78	15.4	Superficial geology (50k)	0	0	0	0	-
78	15.5	Superficial permeability (50k)	None (within 50m)				
78	15.6	Landslip (50k)	0	0	0	0	-
78	15.7	Landslip permeability (50k)	None (within 50m)				
79	15.8	Bedrock geology (50k)	1	1	6	7	-
80	15.9	Bedrock permeability (50k)	Identified (within 50m)				
81	15.10	Bedrock faults and other linear features (50k)	0	0	3	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
82	16.1	BGS Boreholes	0	0	13	-	-
Page	Section	Natural ground subsidence					
84	17.1	Shrink swell clays	Very low (within 50m)				
85	17.2	Running sands	Negligible (within 50m)				
86	17.3	Compressible deposits	Negligible (within 50m)				
87	17.4	Collapsible deposits	Very low (within 50m)				
88	17.5	Landslides	Moderate (within 50m)				
90	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
91	18.1	Natural cavities	0	0	0	0	-
92	18.2	BritPits	0	0	2	2	-
93	18.3	Surface ground workings	0	0	31	-	-
94	18.4	Underground workings	0	0	10	0	0
95	18.5	Historical Mineral Planning Areas	0	0	0	0	-

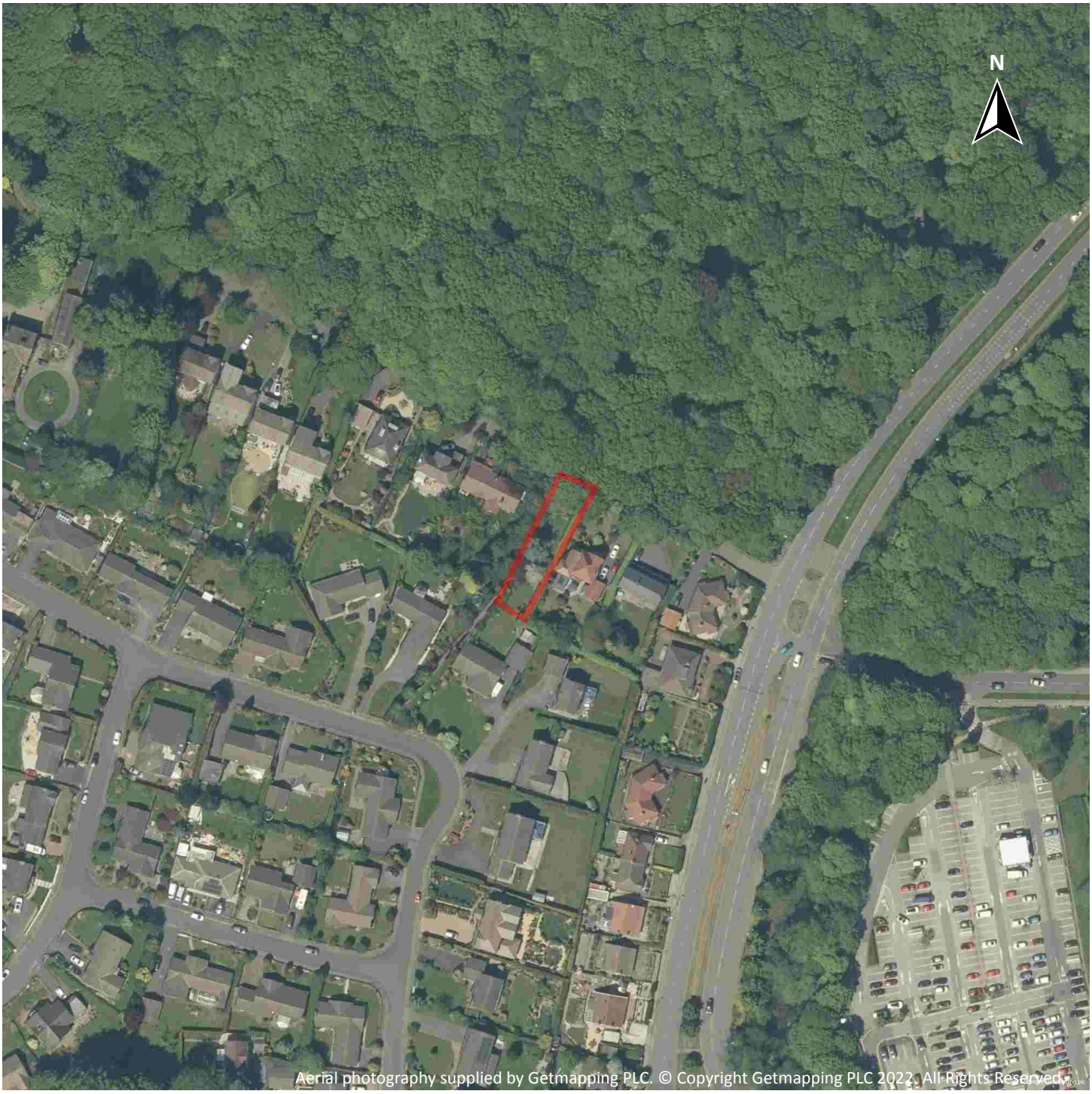
95	**18.6**	**Non-coal mining**	0	1	1	3	4
96	**18.7**	**Mining cavities**	0	0	1	0	0
96	18.8	JPB mining areas	None (within 0m)				
97	**18.9**	**Coal mining**	Identified (within 0m)				
97	18.10	Brine areas	None (within 0m)				
97	18.11	Gypsum areas	None (within 0m)				
97	18.12	Tin mining	None (within 0m)				
97	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
98	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
99	**20.1**	**BGS Estimated Background Soil Chemistry**	1	1	-	-	-
99	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
99	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
100	21.1	Underground railways (London)	0	0	0	-	-
100	21.2	Underground railways (Non-London)	0	0	0	-	-
100	21.3	Railway tunnels	0	0	0	-	-
100	21.4	Historical railway and tunnel features	0	0	0	-	-
100	21.5	Royal Mail tunnels	0	0	0	-	-
101	21.6	Historical railways	0	0	0	-	-
101	21.7	Railways	0	0	0	-	-
101	21.8	Crossrail 1	0	0	0	0	-
101	21.9	Crossrail 2	0	0	0	0	-
101	21.10	HS2	0	0	0	0	-

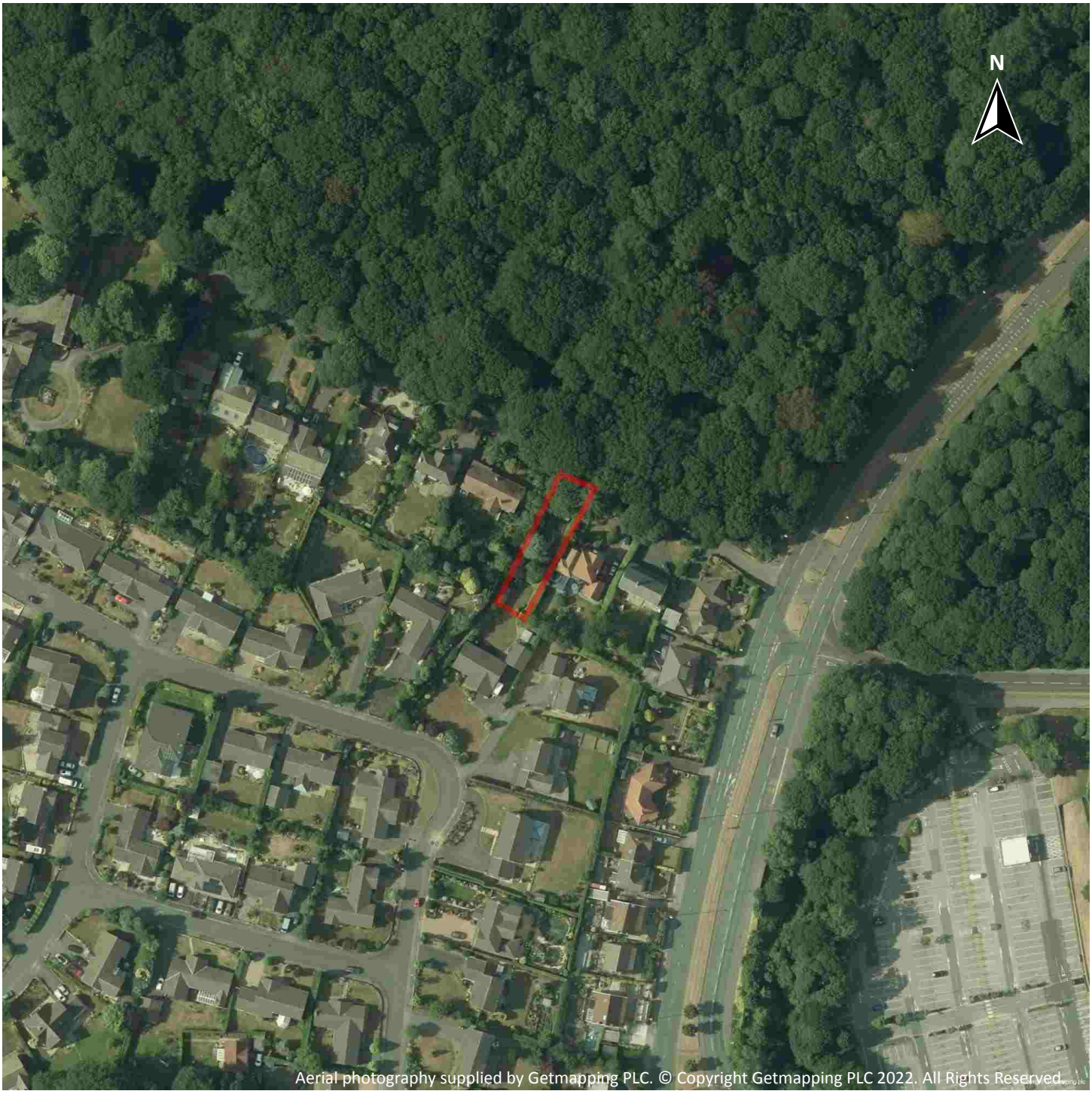
Recent aerial photograph



Capture Date: 30/05/2021

Site Area: 0.05ha

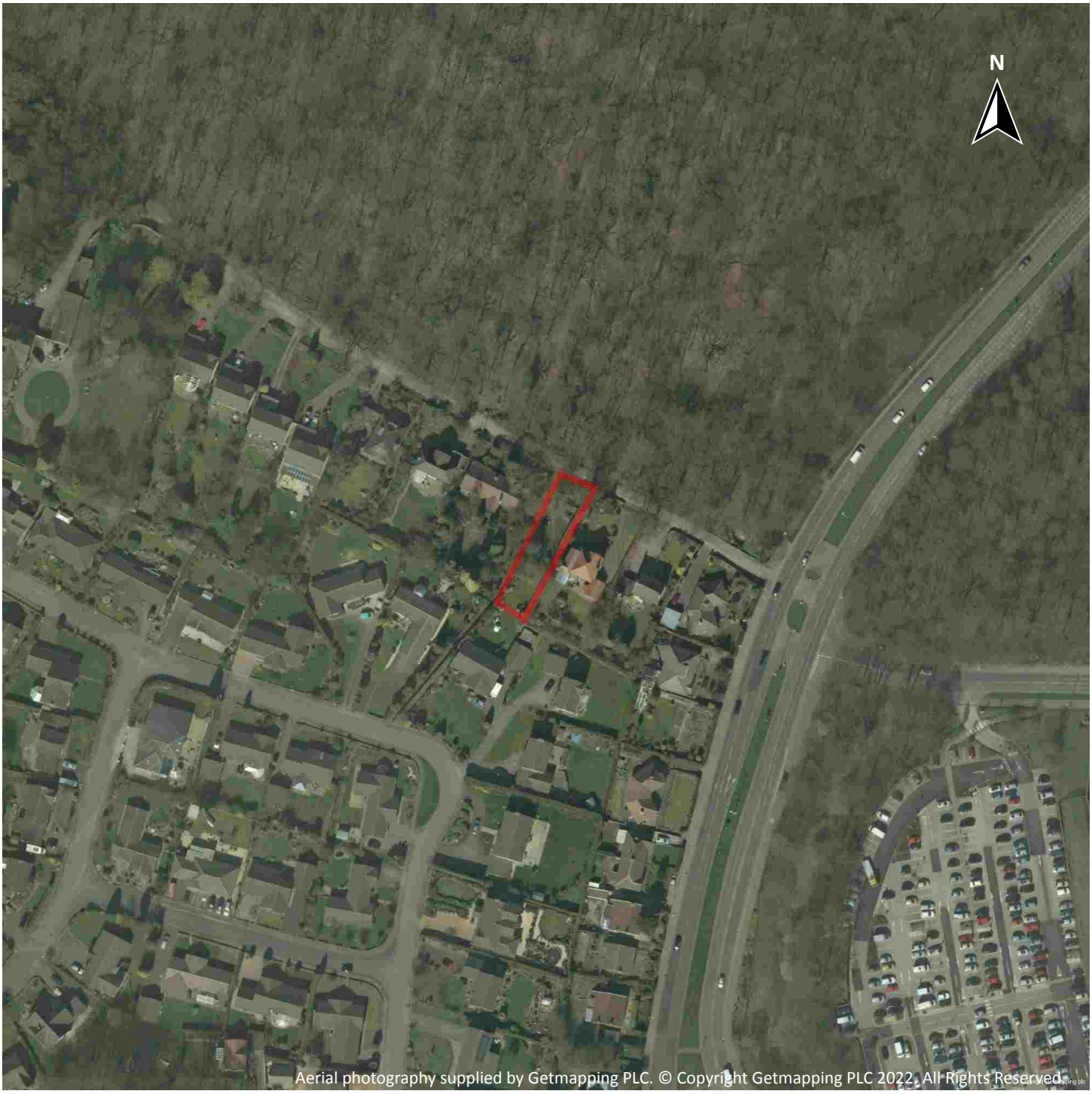
Recent site history - 2018 aerial photograph



Capture Date: 01/07/2018

Site Area: 0.05ha

Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 0.05ha

Recent site history - 2000 aerial photograph

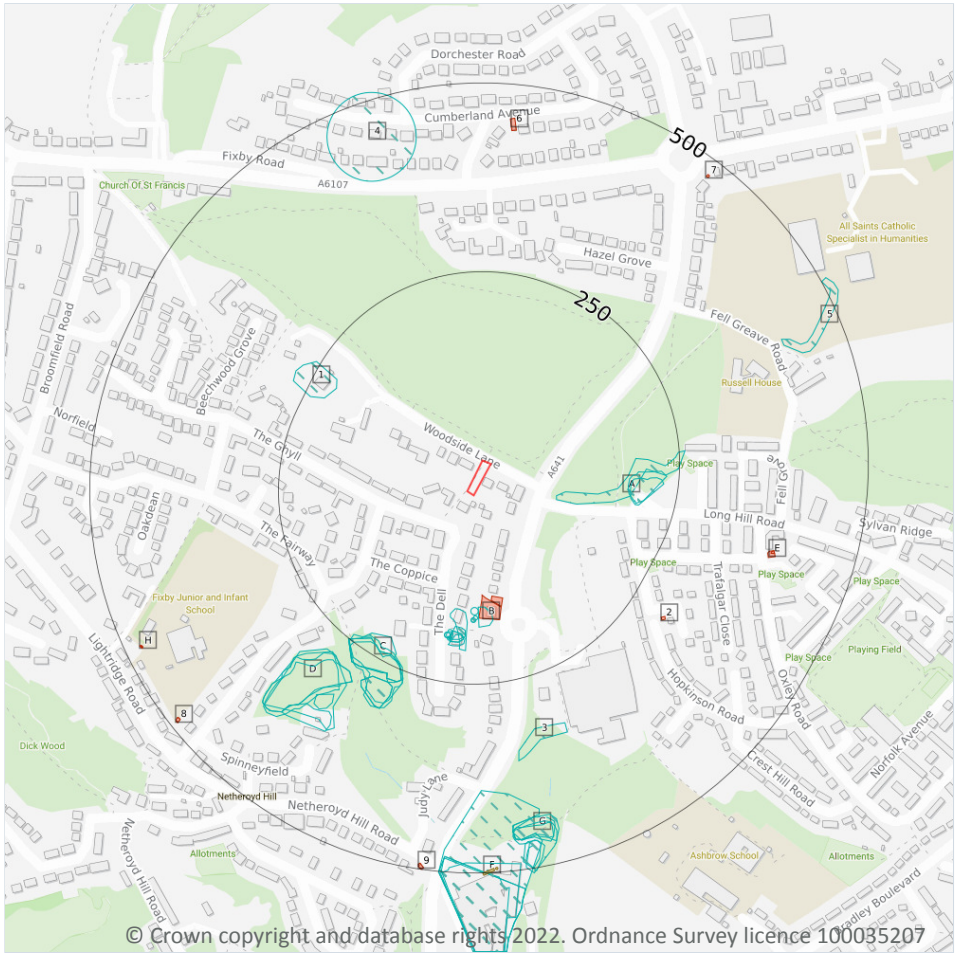
Capture Date: 25/08/2000

Site Area: 0.05ha

OS MasterMap site plan

Site Area: 0.05ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	44

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

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

ID	Location	Land use	Dates present	Group ID
A	97m E	Unspecified Ground Workings	1966 - 1985	1542720

ID	Location	Land use	Dates present	Group ID
B	148m S	Unspecified Heap	1905	1415091
B	149m S	Unspecified Disused Shaft	1975	1424765
B	152m S	Unspecified Ground Workings	1892	1412301
B	159m S	Unspecified Old Shafts	1948 - 1956	1515030
B	162m S	Unspecified Shafts	1905	1420551
B	175m S	Unspecified Heap	1956	1530096
B	180m S	Unspecified Old Shafts	1948 - 1956	1498207
B	182m S	Unspecified Heap	1905	1471321
B	182m S	Unspecified Heap	1948	1488524
B	183m S	Unspecified Disused Shaft	1966 - 1985	1518480
A	184m E	Unspecified Heap	1948 - 1956	1533565
B	184m S	Unspecified Shafts	1905	1420550
B	186m S	Unspecified Heap	1938	1510549
A	188m E	Unspecified Heap	1938	1511729
B	189m S	Unspecified Old Shaft	1938	1553012
1	216m NW	Unspecified Ground Workings	1892	1412300
C	217m SW	Unspecified Quarry	1892	1555750
C	230m SW	Unspecified Quarry	1956 - 1985	1501779
C	232m SW	Unspecified Quarry	1905	1467210
C	232m SW	Unspecified Quarry	1948	1529756
C	236m SW	Unspecified Quarry	1938	1475831
C	272m SW	Unspecified Heap	1948	1508275
C	272m SW	Unspecified Heap	1892 - 1905	1533477
D	278m SW	Unspecified Pit	1948 - 1956	1556897
D	279m SW	Unspecified Ground Workings	1966 - 1985	1530081
D	280m SW	Unspecified Pit	1892 - 1905	1532831
D	285m SW	Unspecified Pit	1938	1459457
3	319m S	Unspecified Ground Workings	1975 - 1985	1462148

ID	Location	Land use	Dates present	Group ID
D	322m SW	Unspecified Heap	1892	1415089
D	344m SW	Unspecified Heap	1892	1415088
F	391m S	Unspecified Mills	1892	1473984
4	394m N	Unspecified Shaft	1905	1425055
5	419m NE	Unspecified Ground Workings	1975 - 1985	1475791
G	433m S	Unspecified Pit	1948	1484839
G	434m S	Unspecified Pit	1956 - 1966	1556605
G	441m S	Unspecified Pit	1938	1523082
G	443m S	Unspecified Quarry	1892 - 1905	1483665
G	463m S	Unspecified Pit	1956	1508441
G	464m S	Unspecified Pit	1948	1507326
F	480m S	Unspecified Disused Mills	1905	1456849
F	480m S	Unspecified Mills	1948	1471387
F	482m S	Unspecified Mills	1938	1465712
F	487m S	Unspecified Mills	1956 - 1985	1541638

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**2**

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 13**

ID	Location	Land use	Dates present	Group ID
F	493m S	Unspecified Tank	1973	223095
F	495m S	Tanks	1973	230335

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	12

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 13**

ID	Location	Land use	Dates present	Group ID
B	132m S	Electricity Substation	1990	128970
B	136m S	Electricity Substation	1994	128969
2	296m SE	Electricity Substation	1979 - 1989	141083
E	385m E	Electricity Substation	1993	143435
E	389m E	Electricity Substation	1974	139286
6	439m N	Electricity Substation	1971	128956
7	476m NE	Electricity Substation	1971	128968
H	477m SW	Gas Governor	1981	132867
H	477m SW	Gas Governor	1993	133880
H	477m SW	Gas Governor	1987	132655
8	485m SW	Electricity Substation	1981 - 1993	141349
9	492m S	Electricity Substation	1973 - 1979	135387

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	71

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

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

ID	Location	Land Use	Date	Group ID
A	97m E	Unspecified Ground Workings	1975	1542720
A	97m E	Unspecified Ground Workings	1985	1542720
A	97m E	Unspecified Ground Workings	1966	1542720

ID	Location	Land Use	Date	Group ID
B	148m S	Unspecified Heap	1905	1415091
B	149m S	Unspecified Disused Shaft	1975	1424765
B	152m S	Unspecified Ground Workings	1892	1412301
B	159m S	Unspecified Old Shafts	1956	1515030
B	162m S	Unspecified Old Shafts	1948	1515030
B	162m S	Unspecified Shafts	1905	1420551
B	175m S	Unspecified Heap	1956	1530096
B	180m S	Unspecified Old Shafts	1956	1498207
B	182m S	Unspecified Heap	1948	1488524
B	182m S	Unspecified Heap	1905	1471321
B	183m S	Unspecified Disused Shaft	1975	1518480
B	183m S	Unspecified Disused Shaft	1985	1518480
B	183m S	Unspecified Disused Shaft	1966	1518480
A	184m E	Unspecified Heap	1948	1533565
B	184m S	Unspecified Old Shafts	1948	1498207
B	184m S	Unspecified Shafts	1905	1420550
B	186m S	Unspecified Heap	1938	1510549
B	186m S	Unspecified Heap	1938	1510549
A	188m E	Unspecified Heap	1938	1511729
A	188m E	Unspecified Heap	1938	1511729
A	188m E	Unspecified Heap	1956	1533565
B	189m S	Unspecified Old Shaft	1938	1553012
B	189m S	Unspecified Old Shaft	1938	1553012
1	216m NW	Unspecified Ground Workings	1892	1412300
C	217m SW	Unspecified Quarry	1892	1555750
C	230m SW	Unspecified Quarry	1975	1501779
C	230m SW	Unspecified Quarry	1956	1501779
C	230m SW	Unspecified Quarry	1985	1501779

ID	Location	Land Use	Date	Group ID
C	230m SW	Unspecified Quarry	1966	1501779
C	232m SW	Unspecified Quarry	1948	1529756
C	232m SW	Unspecified Quarry	1905	1467210
C	236m SW	Unspecified Quarry	1938	1475831
C	272m SW	Unspecified Heap	1948	1508275
C	272m SW	Unspecified Heap	1892	1533477
C	272m SW	Unspecified Heap	1905	1533477
D	278m SW	Unspecified Pit	1956	1556897
D	279m SW	Unspecified Ground Workings	1975	1530081
D	279m SW	Unspecified Ground Workings	1985	1530081
D	279m SW	Unspecified Ground Workings	1966	1530081
D	280m SW	Unspecified Pit	1948	1556897
D	280m SW	Unspecified Pit	1892	1532831
D	280m SW	Unspecified Pit	1905	1532831
D	285m SW	Unspecified Pit	1938	1459457
D	285m SW	Unspecified Pit	1938	1459457
F	319m S	Unspecified Ground Workings	1975	1462148
F	319m S	Unspecified Ground Workings	1985	1462148
D	322m SW	Unspecified Heap	1892	1415089
D	344m SW	Unspecified Heap	1892	1415088
H	391m S	Unspecified Mills	1892	1473984
2	394m N	Unspecified Shaft	1905	1425055
I	419m NE	Unspecified Ground Workings	1985	1475791
I	419m NE	Unspecified Ground Workings	1975	1475791
J	433m S	Unspecified Pit	1948	1484839
J	434m S	Unspecified Pit	1956	1556605
J	434m S	Unspecified Pit	1966	1556605
J	441m S	Unspecified Pit	1938	1523082

ID	Location	Land Use	Date	Group ID
J	441m S	Unspecified Pit	1938	1523082
J	443m S	Unspecified Quarry	1892	1483665
J	443m S	Unspecified Quarry	1905	1483665
J	463m S	Unspecified Pit	1956	1508441
J	464m S	Unspecified Pit	1948	1507326
H	480m S	Unspecified Mills	1948	1471387
H	480m S	Unspecified Disused Mills	1905	1456849
H	482m S	Unspecified Mills	1938	1465712
H	487m S	Unspecified Mills	1975	1541638
H	487m S	Unspecified Mills	1985	1541638
H	489m S	Unspecified Mills	1956	1541638
H	489m S	Unspecified Mills	1966	1541638

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**2**

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

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

ID	Location	Land Use	Date	Group ID
H	493m S	Unspecified Tank	1973	223095
H	495m S	Tanks	1973	230335

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	16

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

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

ID	Location	Land Use	Date	Group ID
B	132m S	Electricity Substation	1990	128970
B	136m S	Electricity Substation	1994	128969
E	296m SE	Electricity Substation	1979	141083
E	296m SE	Electricity Substation	1989	141083
G	385m E	Electricity Substation	1993	143435
G	389m E	Electricity Substation	1974	139286
3	439m N	Electricity Substation	1971	128956
4	476m NE	Electricity Substation	1971	128968
K	477m SW	Gas Governor	1981	132867
K	477m SW	Gas Governor	1993	133880
K	477m SW	Gas Governor	1987	132655
L	485m SW	Electricity Substation	1981	141349
L	486m SW	Electricity Substation	1993	141349
L	486m SW	Electricity Substation	1987	141349
M	492m S	Electricity Substation	1973	135387
M	493m S	Electricity Substation	1979	135387

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

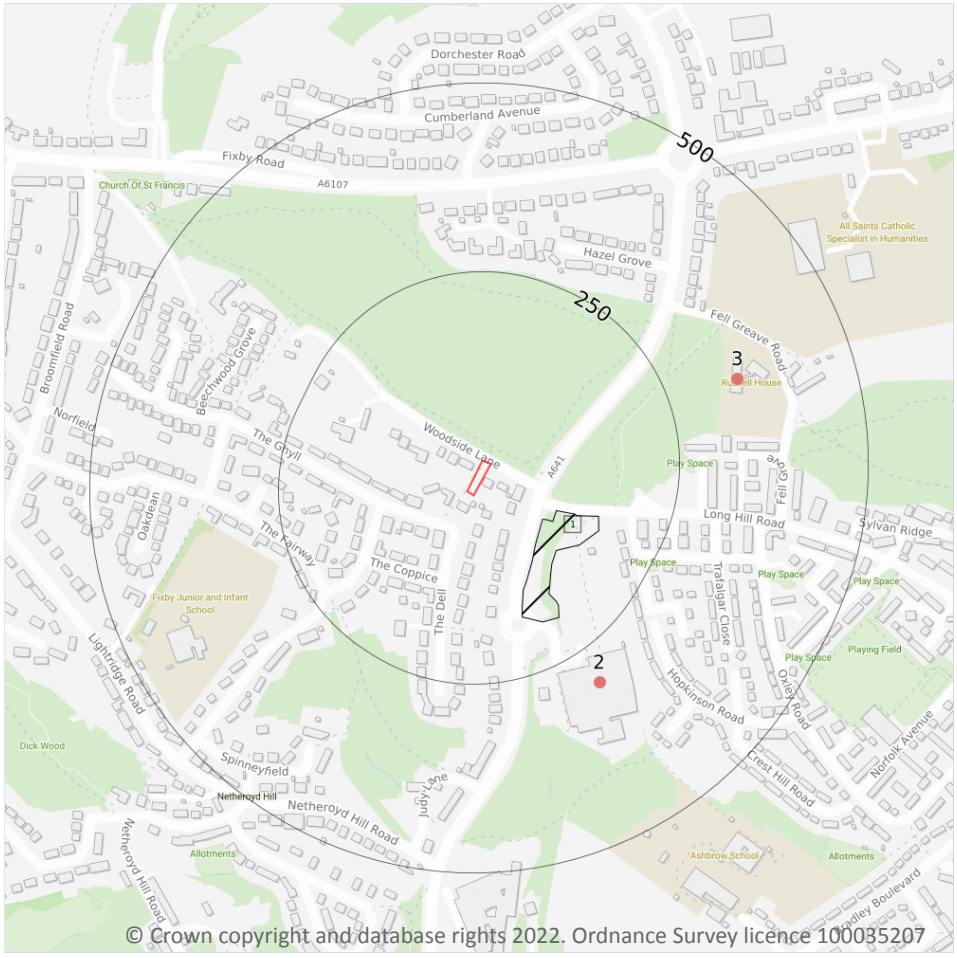
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	1

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

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

ID	Location	Details		
1	95m SE	Site Address: Brackenhall Dam, Bradford Road, Huddersfield Licence Holder Address: Civic Centre, Huddersfield	Waste Licence: Yes Site Reference: 4700/0455 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 16/08/1984 Licence Surrender: 30/04/1994	Operator: - Licence Holder: Kirklees Metropolitan Borough Council First Recorded 31/12/1984 Last Recorded: 31/12/1986

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

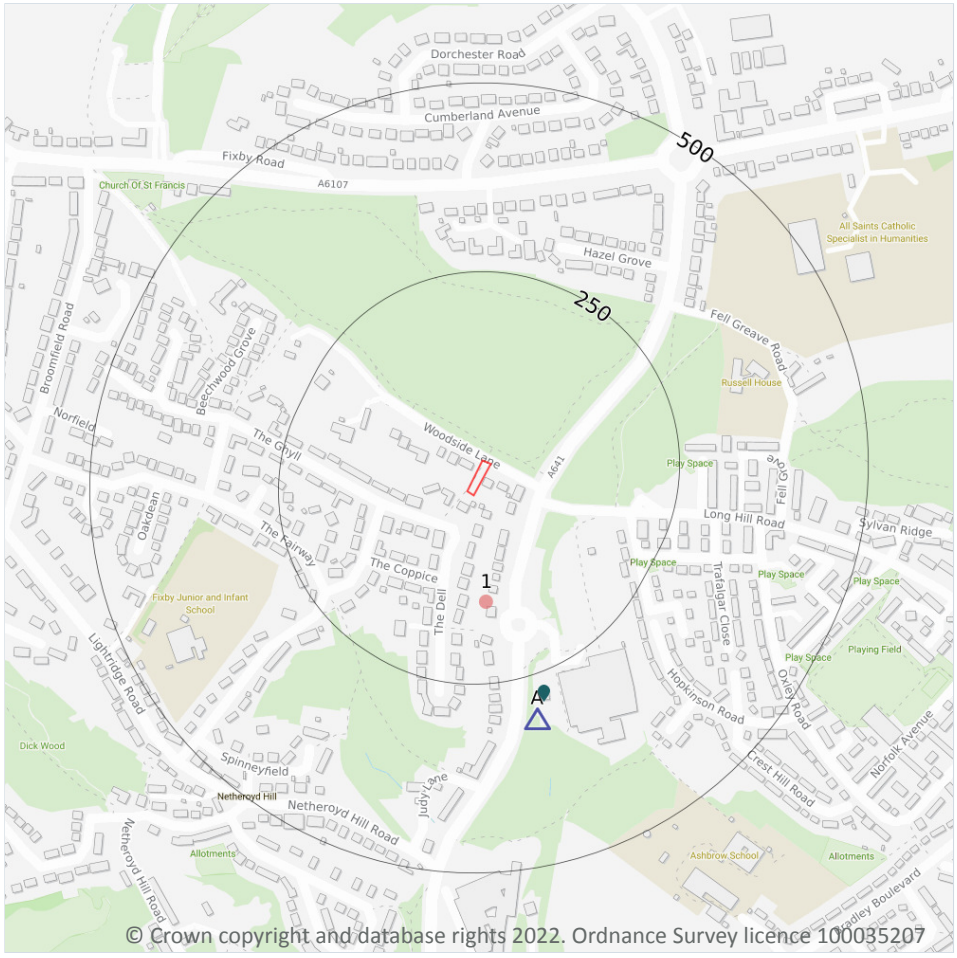
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

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

ID	Location	Site	Reference	Category	Sub-Category	Description
2	299m SE	Long Hill Bradford Road HUDDERSFIELD HD2 2LQ	EPR/NF0305GW/A001	Treating waste exemption	Non-Agricultural Waste Only	Crushing waste fluorescent tubes
3	345m E	RUSSELL HOUSE, FELL GREAVE ROAD, HUDDERSFIELD, HD2 1NH	WEX231125	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



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	1

Current potentially contaminative industrial sites.

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

ID	Location	Company	Address	Activity	Category
1	142m S	Electricity Sub Station	West Yorkshire, HD2	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 27**

ID	Location	Company	Address	LPG	Status
A	307m S	ASDA	Bradford Road, Brackenhall, Huddersfield, West Yorkshire, HD2 2LQ	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	1

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 27**

ID	Location	Address	Details	
A	277m S	Asda Stores Ltd, Bradford Road, Huddersfield, HD2 2LQ	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements 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

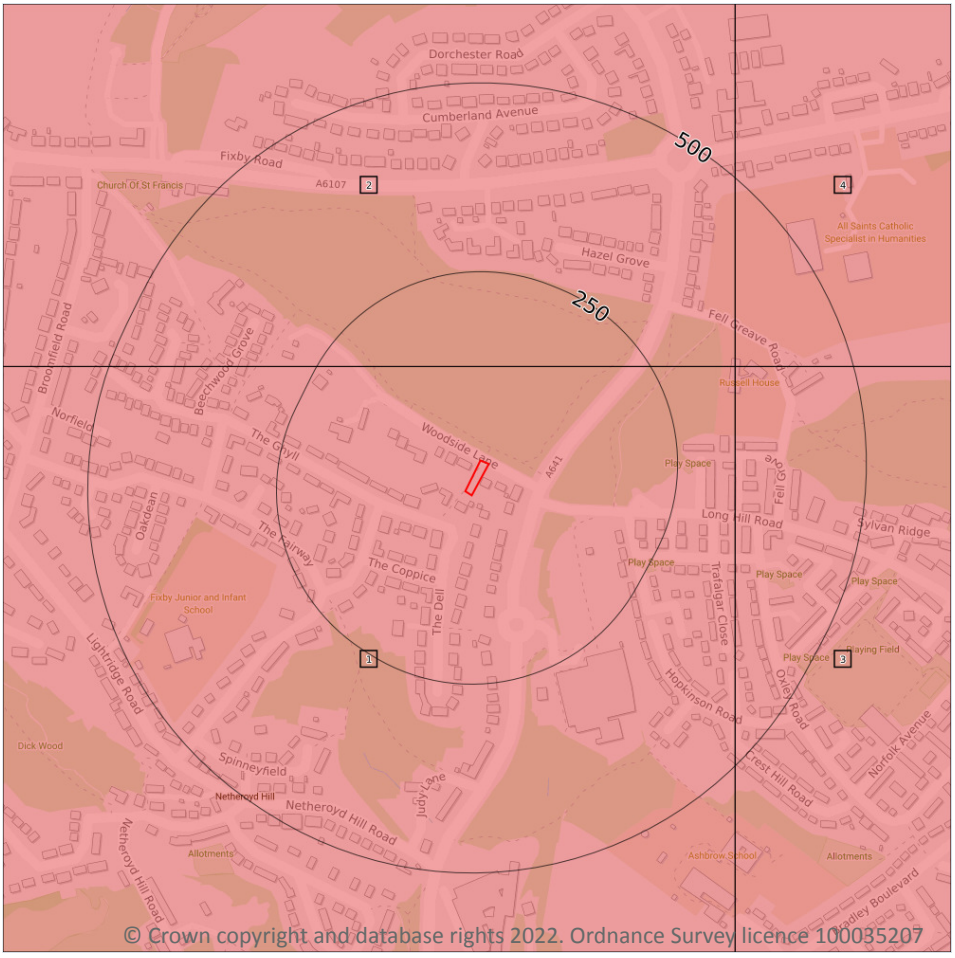
5.1 Superficial aquifer

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	4

Aquifer status of groundwater held within bedrock geology.

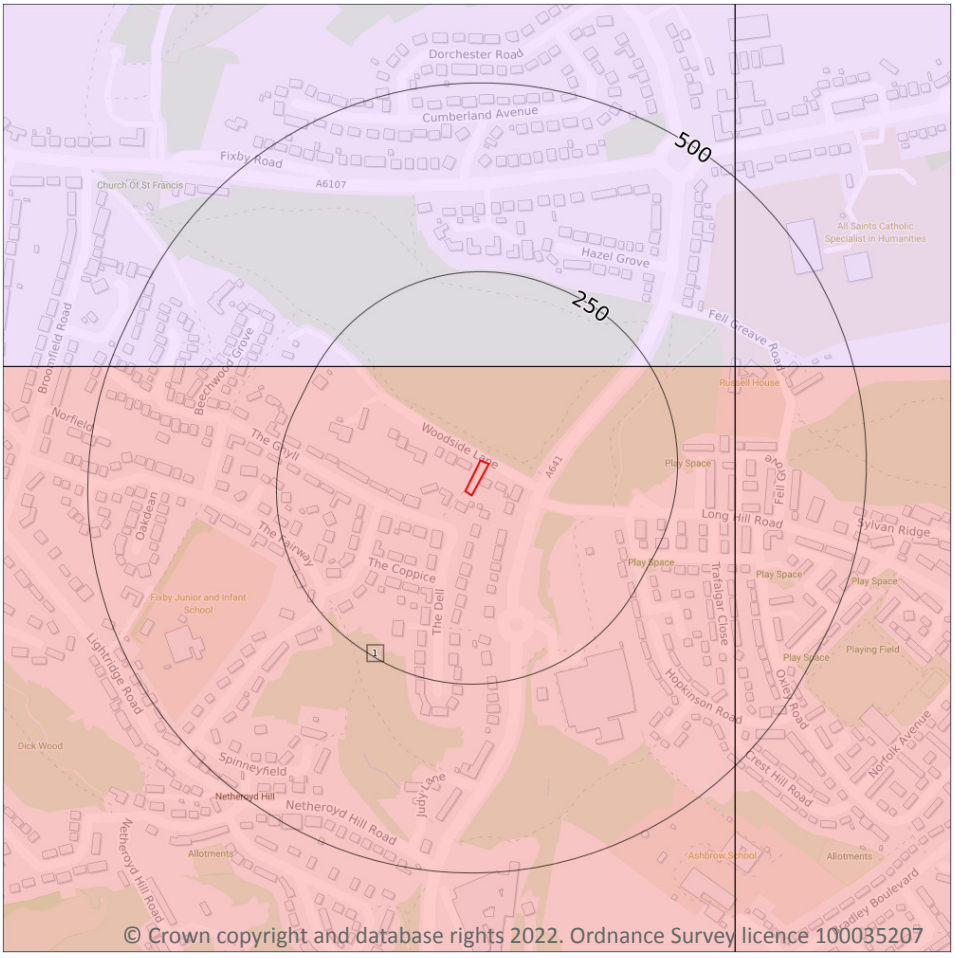
Features are displayed on the Bedrock aquifer map on **page 34**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	124m N	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

ID	Location	Designation	Description
3	326m E	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
4	351m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	1

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

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

Features are displayed on the Groundwater vulnerability map on **page 36**

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**

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	11

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 38**

ID	Location	Details	
-	1120m NE	Status: Historical Licence No: 2/27/12/322 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: KIRKLEES METROPOLITAN COUNCIL Easting: 415300 Northing: 420800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/09/1998 Expiry Date: 31/10/2007 Issue No: 100 Version Start Date: 10/09/1998 Version End Date: -
-	1120m NE	Status: Historical Licence No: 2/27/12/322 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - BRADLEY Data Type: Point Name: KIRKLEES METROPOLITAN COUNCIL Easting: 415300 Northing: 420800	Annual Volume (m^3): 7500 Max Daily Volume (m^3): 100 Original Application No: - Original Start Date: 10/09/1998 Expiry Date: 31/10/2007 Issue No: 100 Version Start Date: 10/09/1998 Version End Date: -
-	1120m NE	Status: Historical Licence No: 2/27/12/339 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - BRADLEY Data Type: Point Name: Kirklees Active Leisure Easting: 415300 Northing: 420800	Annual Volume (m^3): 7500 Max Daily Volume (m^3): 100 Original Application No: - Original Start Date: 05/12/2007 Expiry Date: 31/03/2015 Issue No: 2 Version Start Date: 25/09/2014 Version End Date: -
-	1120m NE	Status: Active Licence No: 2/27/12/339/R01 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - BRADLEY Data Type: Point Name: Kirklees Active Leisure Easting: 415300 Northing: 420800	Annual Volume (m^3): 7,500 Max Daily Volume (m^3): 100 Original Application No: NPS/WR/017362 Original Start Date: 01/04/2015 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/04/2015 Version End Date: -
-	1430m W	Status: Historical Licence No: 2/27/11/159 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-HUDDERSFIELD GOLF CLUB Data Type: Point Name: HUDDERSFIELD GOLF CLUB LTD Easting: 413260 Northing: 419470	Annual Volume (m^3): 9500 Max Daily Volume (m^3): 60 Original Application No: - Original Start Date: 27/10/1972 Expiry Date: 30/11/2010 Issue No: 102 Version Start Date: 17/01/2005 Version End Date: -

ID	Location	Details	
-	1513m W	Status: Historical Licence No: 2/27/11/159 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: HUDDERSFIELD GOLF CLUB LIMITED Easting: 413130 Northing: 419890	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/10/1972 Expiry Date: - Issue No: 100 Version Start Date: 27/05/1998 Version End Date: -
-	1862m S	Status: Historical Licence No: 2/27/11/171 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: HUDDERSFIELD DYEING CO LTD Easting: 415000 Northing: 418000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 24/05/1990 Expiry Date: - Issue No: 100 Version Start Date: 24/05/1990 Version End Date: -
-	1862m S	Status: Active Licence No: 2/27/11/171 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT - HUDDERSFIELD Data Type: Point Name: HUDDERSFIELD DYEING CO LTD Easting: 415000 Northing: 418000	Annual Volume (m^3): 136,410 Max Daily Volume (m^3): 637.07 Original Application No: 6256 Original Start Date: 24/05/1990 Expiry Date: - Issue No: 100 Version Start Date: 24/05/1990 Version End Date: -
-	1935m S	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: BENJAMIN SHAW & SONS LTD Easting: 414500 Northing: 417900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 26/03/1999 Version End Date: -
-	1935m S	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT Data Type: Point Name: BENJAMIN SHAW & SONS LTD Easting: 414500 Northing: 417900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 26/03/1999 Version End Date: -

ID	Location	Details	
-	1970m S	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-MILLSTONE GRIT-HUDDERSFIELD Data Type: Point Name: BRITVIC SOFT DRINKS PLC Easting: 414250 Northing: 417900	Annual Volume (m^3): 90920 Max Daily Volume (m^3): 636.4 Original Application No: - Original Start Date: 14/12/1965 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2009 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**4**

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 38**

ID	Location	Details	
-	1862m S	Status: Historical Licence No: 2/27/11/131 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: HUDDERSFIELD CANAL Data Type: Point Name: BRITISH WATERWAYS Easting: 415000 Northing: 418000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 26/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1993 Version End Date: -
-	1862m S	Status: Historical Licence No: 2/27/11/131 Details: General use relating to Secondary Category (Very Low Loss) Direct Source: SURFACE WATER Point: HUDDERSFIELD CANAL Data Type: Point Name: BRITISH WATERWAYS Easting: 415000 Northing: 418000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 26/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1993 Version End Date: -

ID	Location	Details	
-	1862m S	Status: Active Licence No: 2/27/11/131 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: HUDDERSFIELD CANAL Data Type: Point Name: Canal and River Trust Easting: 415000 Northing: 418000	Annual Volume (m^3): 400,000 Max Daily Volume (m^3): 1,800 Original Application No: 2266 Original Start Date: 26/05/1966 Expiry Date: - Issue No: 101 Version Start Date: 21/01/2008 Version End Date: -
-	1862m S	Status: Active Licence No: 2/27/11/131 Details: Process Water Direct Source: SURFACE WATER Point: HUDDERSFIELD CANAL Data Type: Point Name: Canal and River Trust Easting: 415000 Northing: 418000	Annual Volume (m^3): 400,000 Max Daily Volume (m^3): 1,800 Original Application No: 2266 Original Start Date: 26/05/1966 Expiry Date: - Issue No: 101 Version Start Date: 21/01/2008 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**3**

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 38**

ID	Location	Details	
-	1935m S	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: BENJAMIN SHAW & SONS LTD Easting: 414500 Northing: 417900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 26/03/1999 Version End Date: -

ID	Location	Details	
-	1935m S	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT Data Type: Point Name: BENJAMIN SHAW & SONS LTD Easting: 414500 Northing: 417900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 26/03/1999 Version End Date: -
-	1970m S	Status: Historical Licence No: 2/27/11/023 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-MILLSTONE GRIT-HUDDERSFIELD Data Type: Point Name: BRITVIC SOFT DRINKS PLC Easting: 414250 Northing: 417900	Annual Volume (m^3): 90920 Max Daily Volume (m^3): 636.4 Original Application No: - Original Start Date: 14/12/1965 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2009 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.

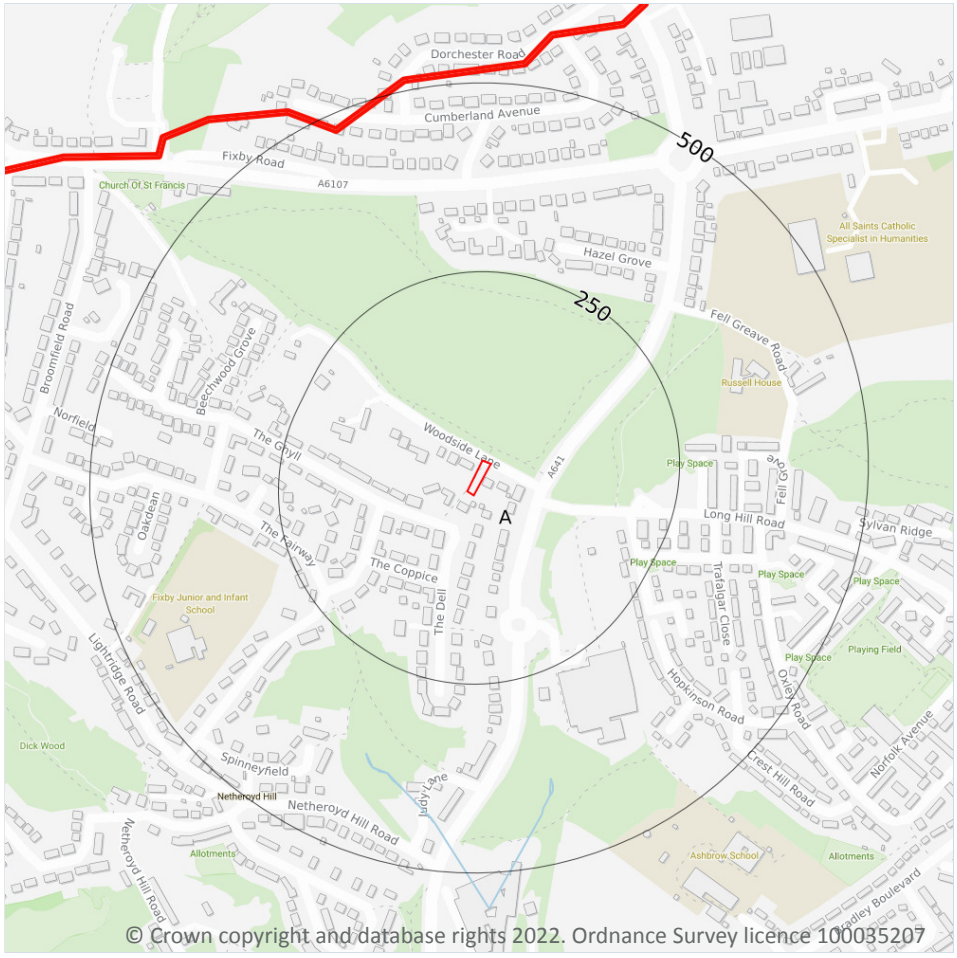
5.10 Source Protection Zones (confined aquifer)

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	0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	0

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.

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 44**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Colne from River Holme to River Calder**	**GB104027062550**	**Colne and Holme**	**Aire and Calder**

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 44**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1540m SW	River	Colne from River Holme to River Calder	GB104027062550	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 44**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Aire & Calder Carb Limestone / Millstone Grit / Coal Measures.**	**GB40402G700400**	**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	**Negligible**
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 50**

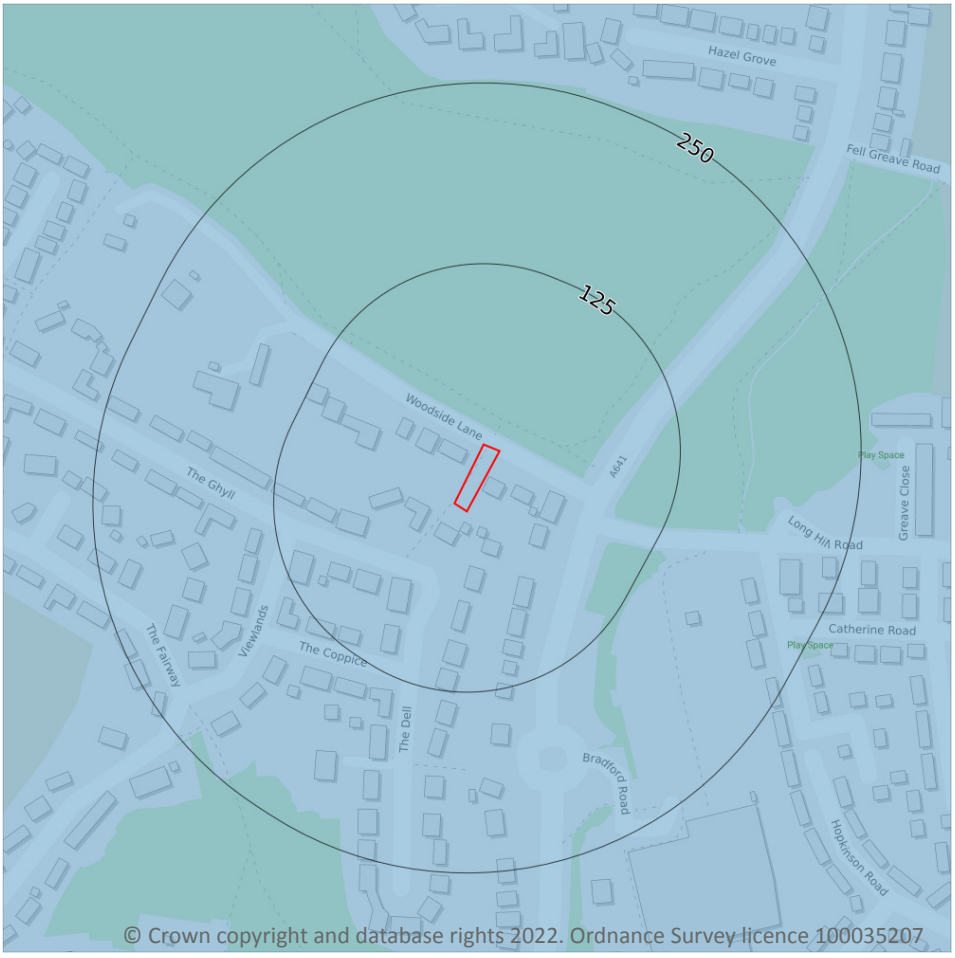
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

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

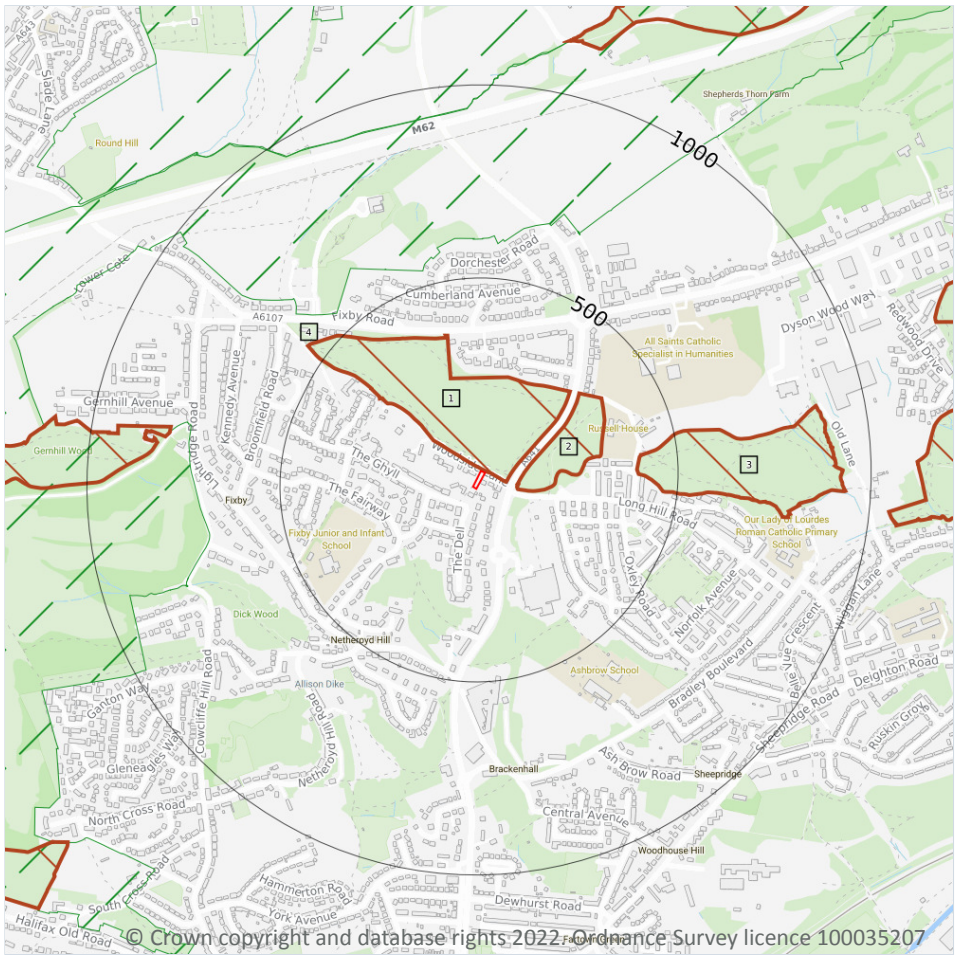
Highest risk on site	**Negligible**
Highest risk within 50m	**Negligible**

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 52**

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	10

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 53**

ID	Location	Name	Woodland Type
1	5m NE	Upper Fell Greave	Ancient Replanted Woodland
2	89m E	Upper Fell Greave	Ancient Replanted Woodland
3	394m E	Lower Fell Greave	Ancient & Semi-Natural Woodland
5	798m W	Gernhill Wood	Ancient Replanted Woodland
7	1051m E	Dyson/screamer Woods	Ancient Replanted Woodland
8	1136m N	Bradley Wood	Ancient Replanted Woodland
9	1232m E	Dyson/screamer Woods	Ancient Replanted Woodland
10	1396m SW	Grimescar Wood	Ancient Replanted Woodland
-	1694m E	Dyson/screamer Woods	Ancient Replanted Woodland
-	1741m SW	Grimescar Wood	Ancient Replanted 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	3

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

Features are displayed on the Environmental designations map on **page 53**

ID	Location	Name	Local Authority name
4	540m N	South and West Yorkshire	Kirklees
6	923m N	South and West Yorkshire	Calderdale
-	1650m W	South and West Yorkshire	Calderdale

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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

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

SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site	0

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.

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 60**

ID	Location	Name	Grade	Reference Number	Listed date
1	148m S	Milestone Opposite Number 523, Ashbrow, Kirklees, HD2	II	1134361	29/09/1978

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.

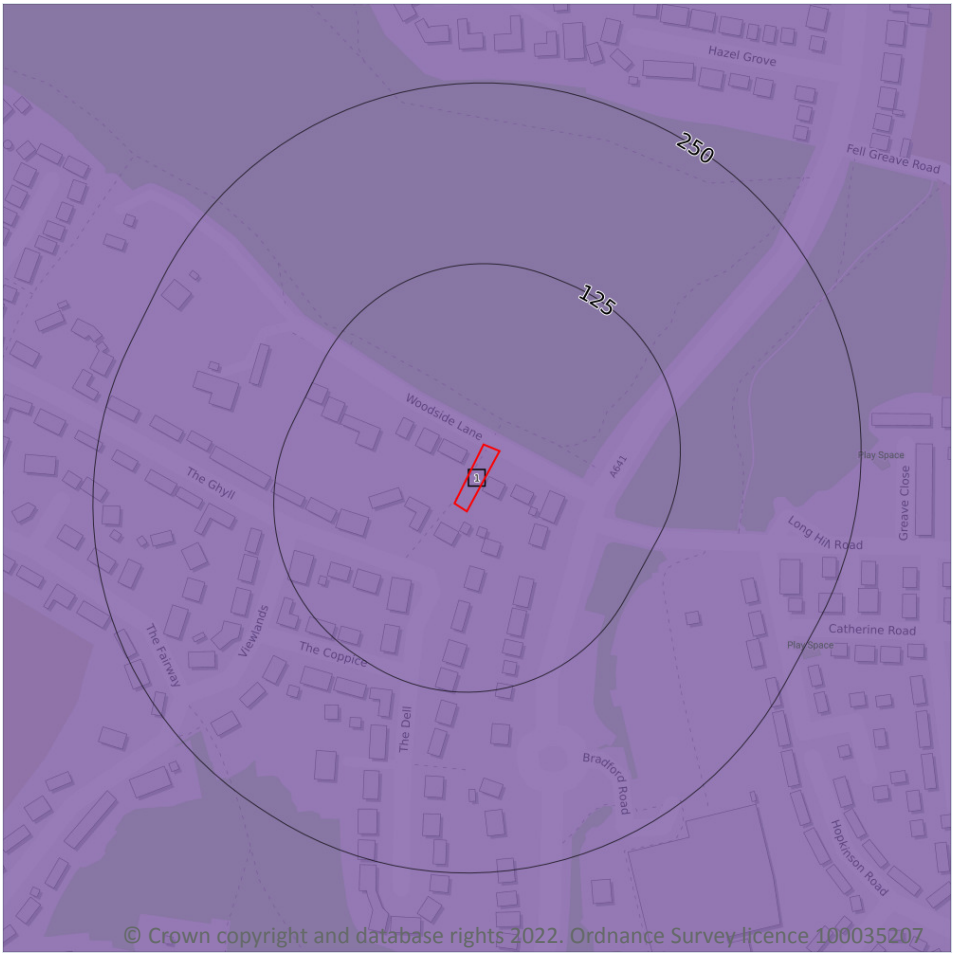
11.7 Registered Parks and Gardens

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	1

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

Features are displayed on the Agricultural designations map on **page 63**

ID	Location	Classification	Description
1	**On site**	**Urban**	-

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.

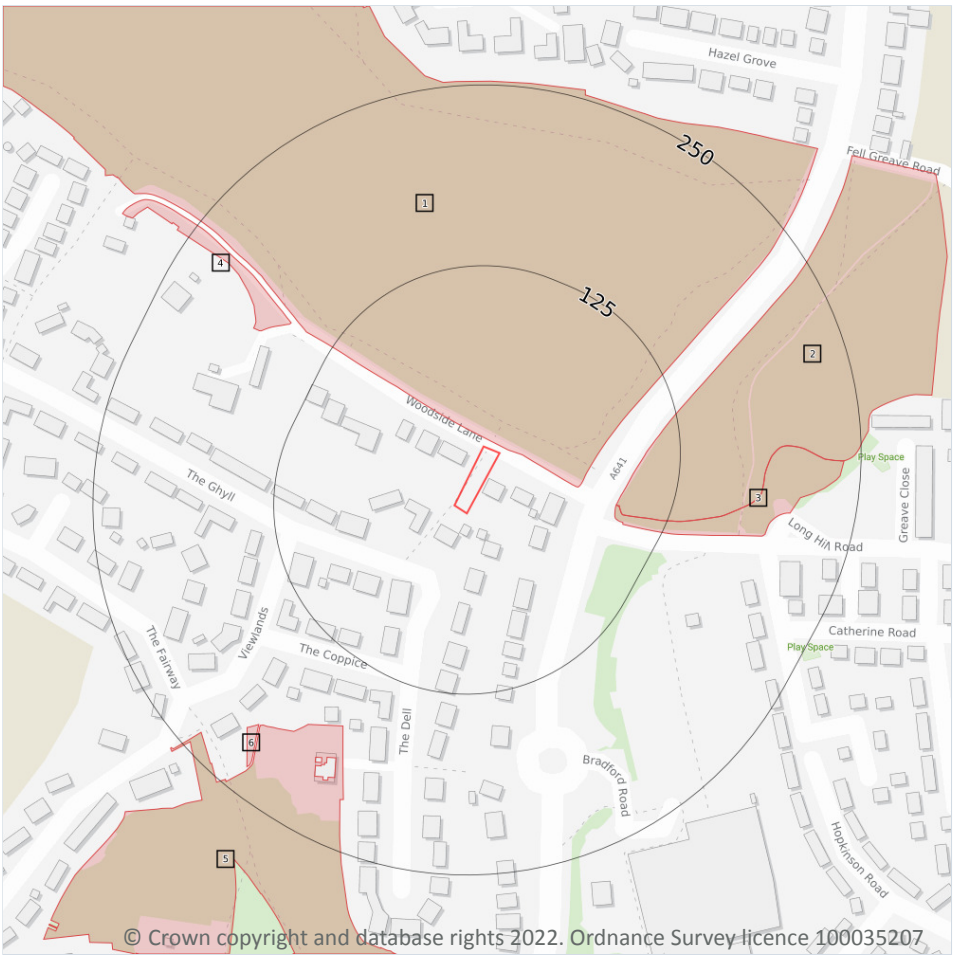
12.5 Countryside Stewardship Schemes

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	6

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 65**

ID	Location	Main Habitat	Other habitats
1	5m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	88m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	88m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	158m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	170m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	203m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m	4

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 67**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SE11NW**
2	124m N	Full	Full	Full	Full	SE12SW
3	326m E	Full	Full	Full	Full	SE11NE
4	351m NE	Full	Full	Full	Full	SE12SE

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	8

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 69**

ID	Location	LEX Code	Description	Rock description
A	120m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	136m SE	WGR-VOID	Worked Ground (Undivided)	Void
B	229m SW	WGR-VOID	Worked Ground (Undivided)	Void
B	241m SW	WMGR-ARTDP	Infilled Ground	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
1	402m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
C	426m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
C	450m NW	WGR-VOID	Worked Ground (Undivided)	Void
2	494m E	MGR-ARTDP	Made Ground (Undivided)	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.

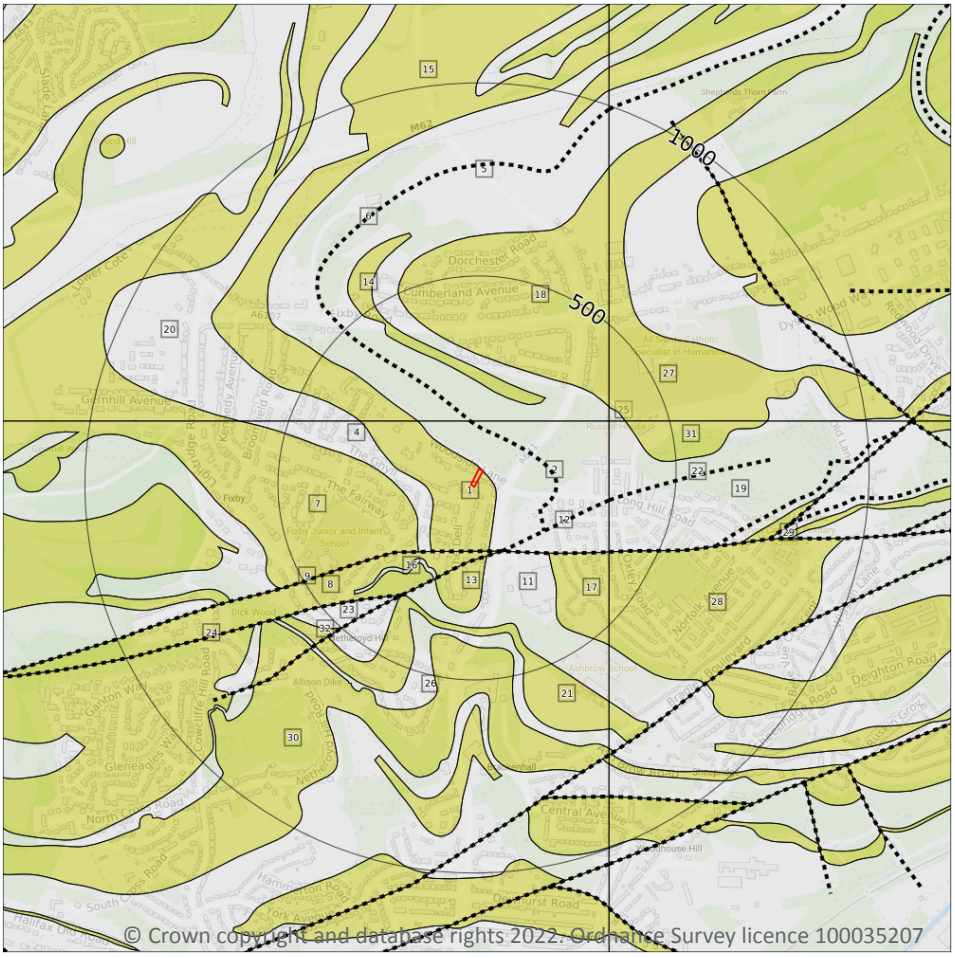
14.4 Landslip (10k)

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 **24**

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 72**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**GR-SDST**	**Grenoside Sandstone - Sandstone**	**Langsettian Sub-age**
2	**On site**	**PLCM-MDSS**	**Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone**	**Langsettian Sub-age**
4	106m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
5	124m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
7	160m SW	GM-SDST	Greenmoor Rock - Sandstone	Langsettian Sub-age
8	167m S	EF-SDST	Elland Flags - Sandstone	Langsettian Sub-age
11	180m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
13	182m S	GM-SDST	Greenmoor Rock - Sandstone	Langsettian Sub-age
14	199m N	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
15	201m NW	GR-SDST	Grenoside Sandstone - Sandstone	Langsettian Sub-age
16	229m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
17	258m SE	GM-SDST	Greenmoor Rock - Sandstone	Langsettian Sub-age
18	279m N	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
19	326m E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
20	331m NW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
21	333m SW	EF-SDST	Elland Flags - Sandstone	Langsettian Sub-age
23	338m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
25	351m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
26	355m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
27	366m NE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
28	387m SE	GM-SDST	Greenmoor Rock - Sandstone	Langsettian Sub-age
30	389m S	EF-SDST	Elland Flags - Sandstone	Langsettian Sub-age
31	390m E	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
32	497m SW	EF-SDST	Elland Flags - 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	**8**

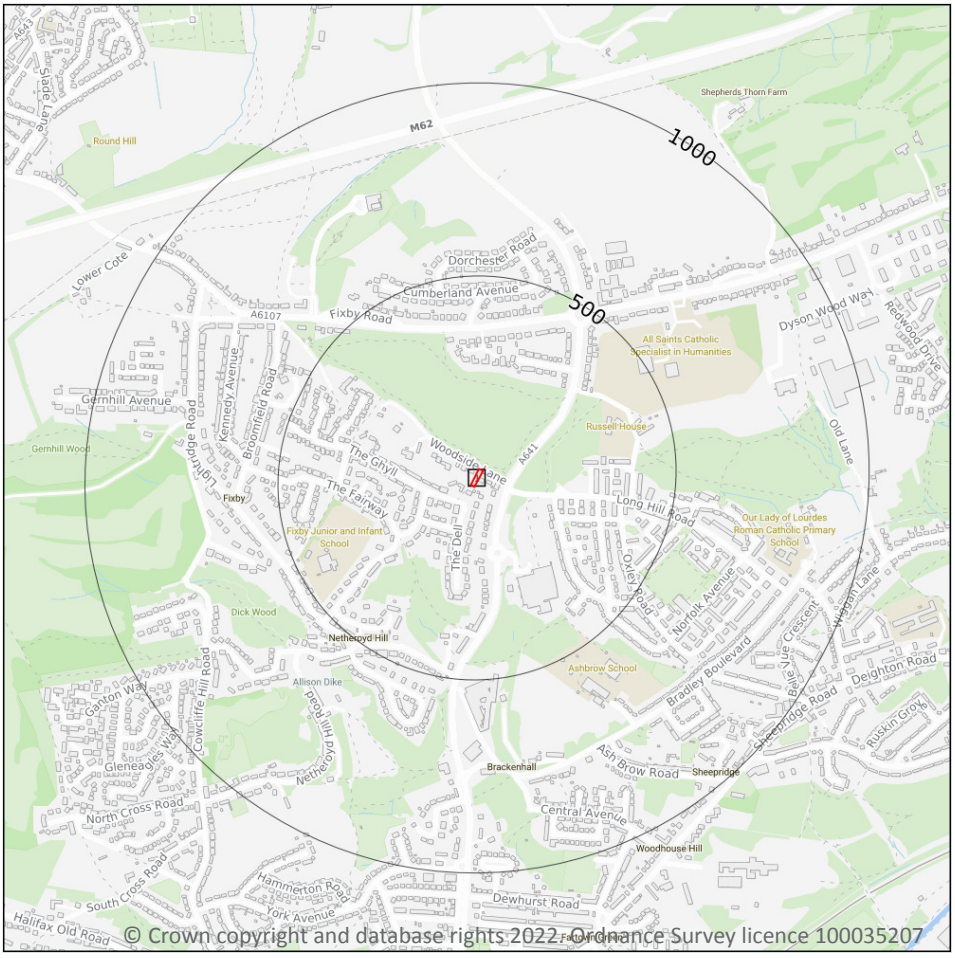
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 72**

ID	Location	Category	Description
3	98m NE	ROCK	Coal seam, inferred
6	126m N	ROCK	Coal seam, inferred
9	167m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
10	180m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
12	181m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
22	335m E	FAULT	Normal fault, inferred; crossmarks on downthrow side
24	338m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
29	387m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side

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 75**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW077_huddersfield_v4**

This data is sourced from the British Geological Survey.

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

Site Outline

Search buffers in metres (m)

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

15.2 Artificial and made ground (50k)

Records within 500m	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 76**

ID	Location	LEX Code	Description	Rock description
1	123m SE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	413m NE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	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.

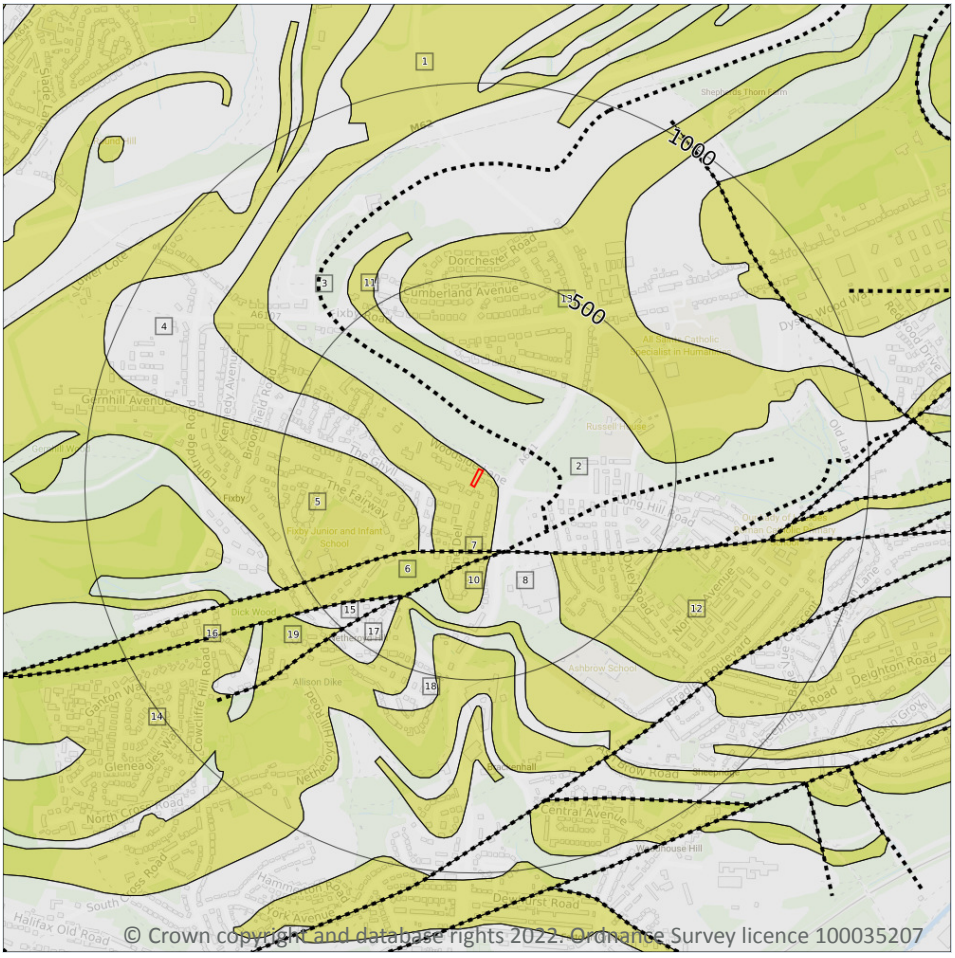
15.7 Landslip permeability (50k)

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 **15**

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 79**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**GR-SDST**	**GRENOSIDE SANDSTONE - SANDSTONE**	**WESTPHALIAN**
2	5m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	100m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
5	155m SW	GM-SDST	GREENMOOR ROCK - SANDSTONE	WESTPHALIAN
6	167m S	EF-SDST	ELLAND FLAGS - SANDSTONE	WESTPHALIAN
8	184m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	185m S	GM-SDST	GREENMOOR ROCK - SANDSTONE	WESTPHALIAN
11	195m NE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
12	261m SE	GM-SDST	GREENMOOR ROCK - SANDSTONE	WESTPHALIAN
13	277m N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
14	332m SW	EF-SDST	ELLAND FLAGS - SANDSTONE	WESTPHALIAN
15	341m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
17	345m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
18	353m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
19	492m SW	EF-SDST	ELLAND FLAGS - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**2**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**High**	**Moderate**
5m NE	Fracture	Moderate	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	4

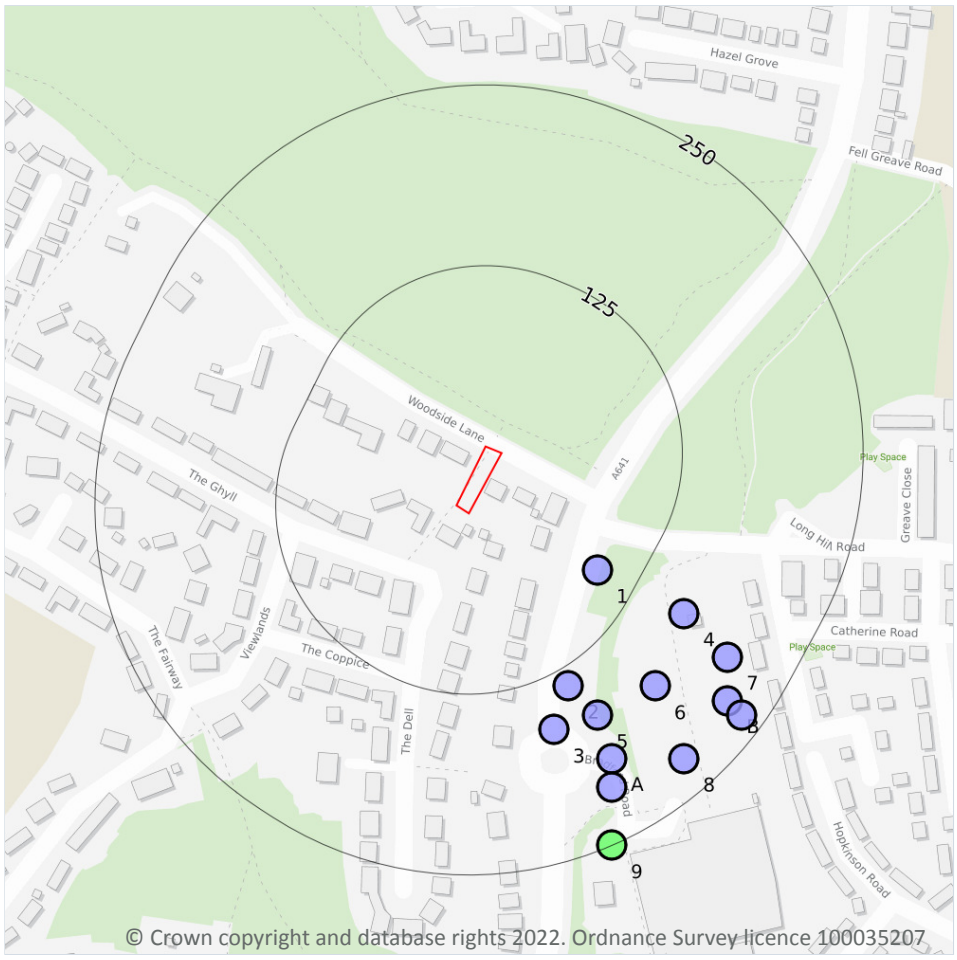
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

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

ID	Location	Category	Description
3	98m NE	ROCK	Coal seam, inferred
7	167m S	FAULT	Fault, inferred
9	184m S	FAULT	Fault, inferred
16	341m SW	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	13

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.

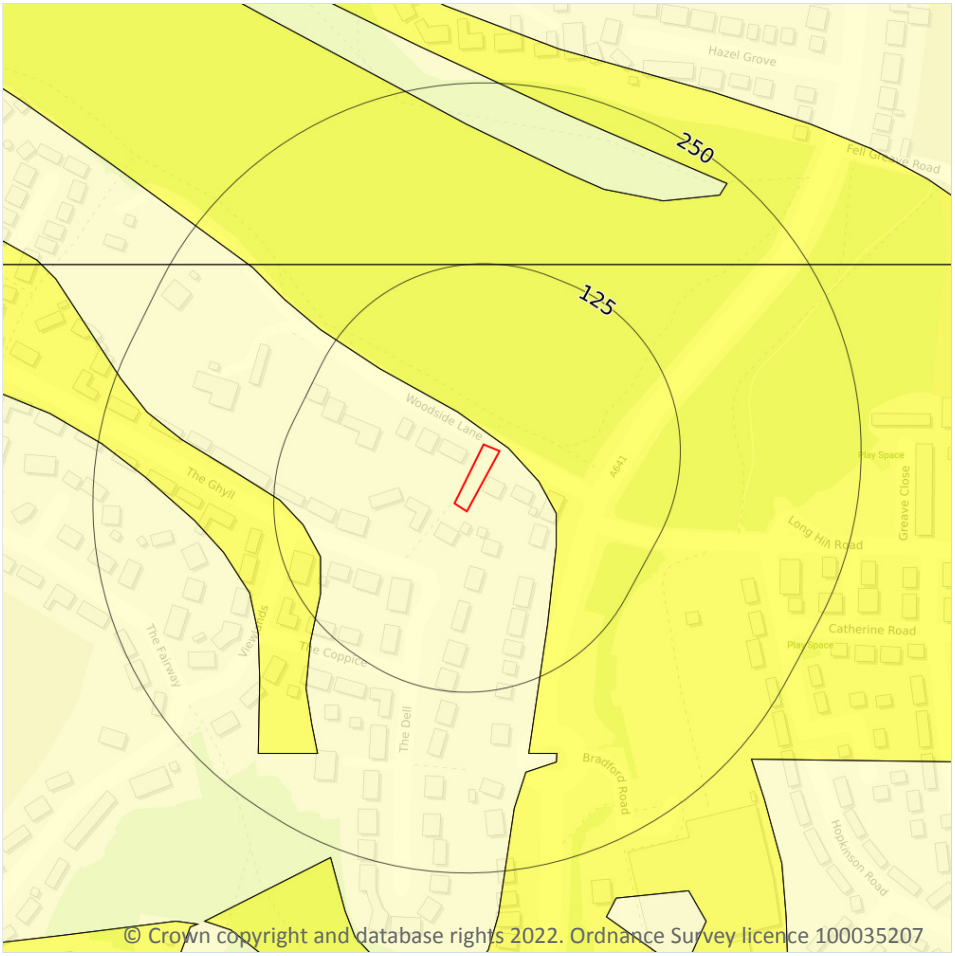
Features are displayed on the Boreholes map on **page 82**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	97m SE	414740 419790	IMPROVEMENT OF BRADFORD ROAD S5	3.05	N	15631196
2	138m SE	414720 419710	IMPROVEMENT OF BRADFORD ROAD 6	2.9	N	15631195
3	161m S	414710 419680	IMPROVEMENT OF BRADFORD ROAD 5	4.57	N	15631194

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	164m SE	414800 419760	BRADFORD ROAD HUDDERSFIELD TP1	3.4	N	41429
5	165m SE	414740 419690	BRADFORD ROAD HUDDERSFIELD TP6	6.5	N	41434
6	176m SE	414780 419710	BRADFORD ROAD HUDDERSFIELD TP2	2.2	N	41430
A	196m SE	414750 419660	BRADFORD ROAD HUDDERSFIELD TP7	1.9	N	41435
7	205m SE	414830 419730	BRADFORD ROAD HUDDERSFIELD 8	10.0	N	41428
A	214m SE	414750 419640	BRADFORD ROAD HUDDERSFIELD TP8	5.0	N	41436
B	221m SE	414830 419700	BRADFORD ROAD HUDDERSFIELD TP3	1.6	N	41431
8	225m SE	414800 419660	BRADFORD ROAD HUDDERSFIELD TP4	2.0	N	41432
B	235m SE	414840 419690	BRADFORD ROAD HUDDERSFIELD 7	10.0	N	41427
9	250m S	414750 419600	BRADFORD ROAD HUDDERSFIELD 6	30.0	N	41426

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	2

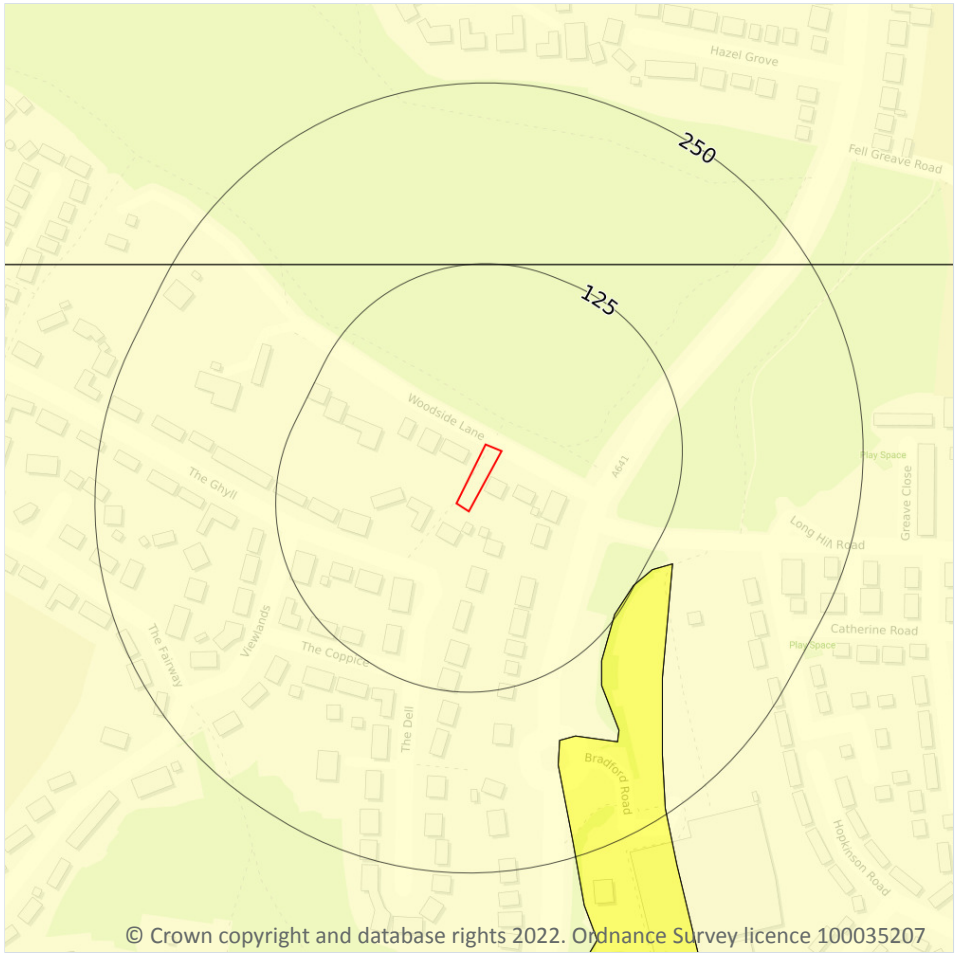
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 84**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
5m NE	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

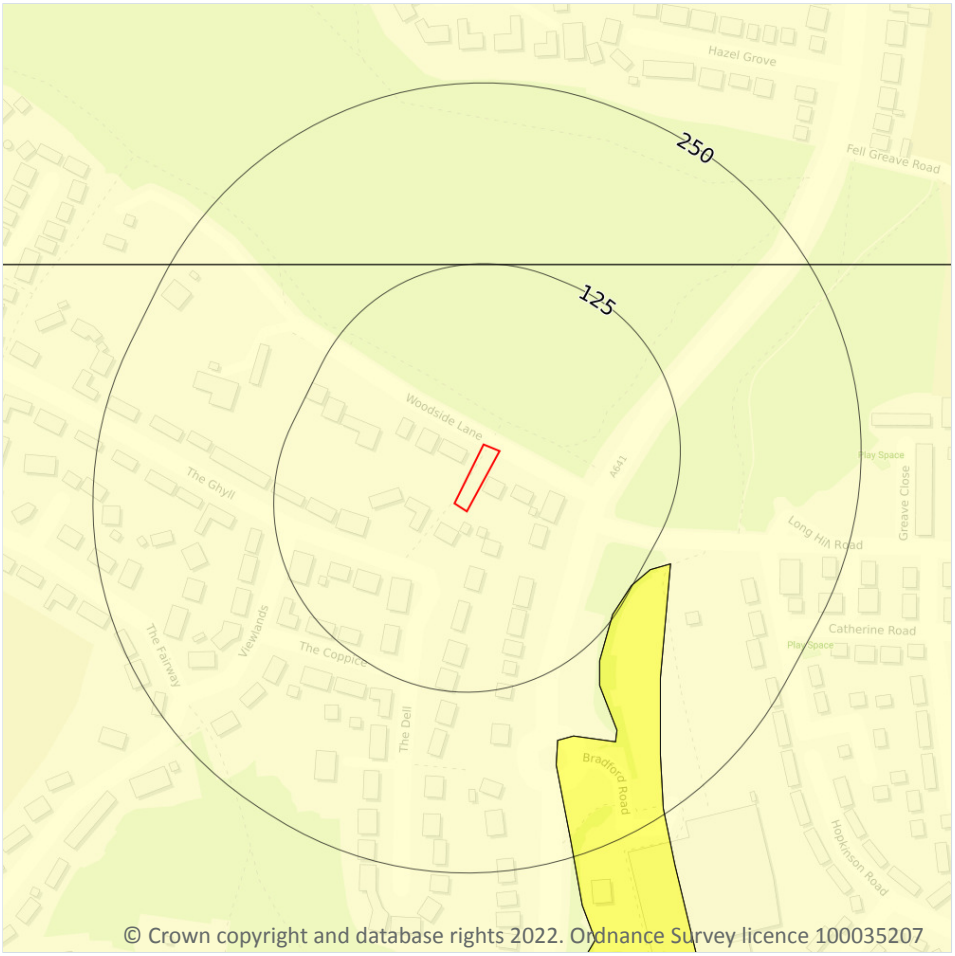
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 85**

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

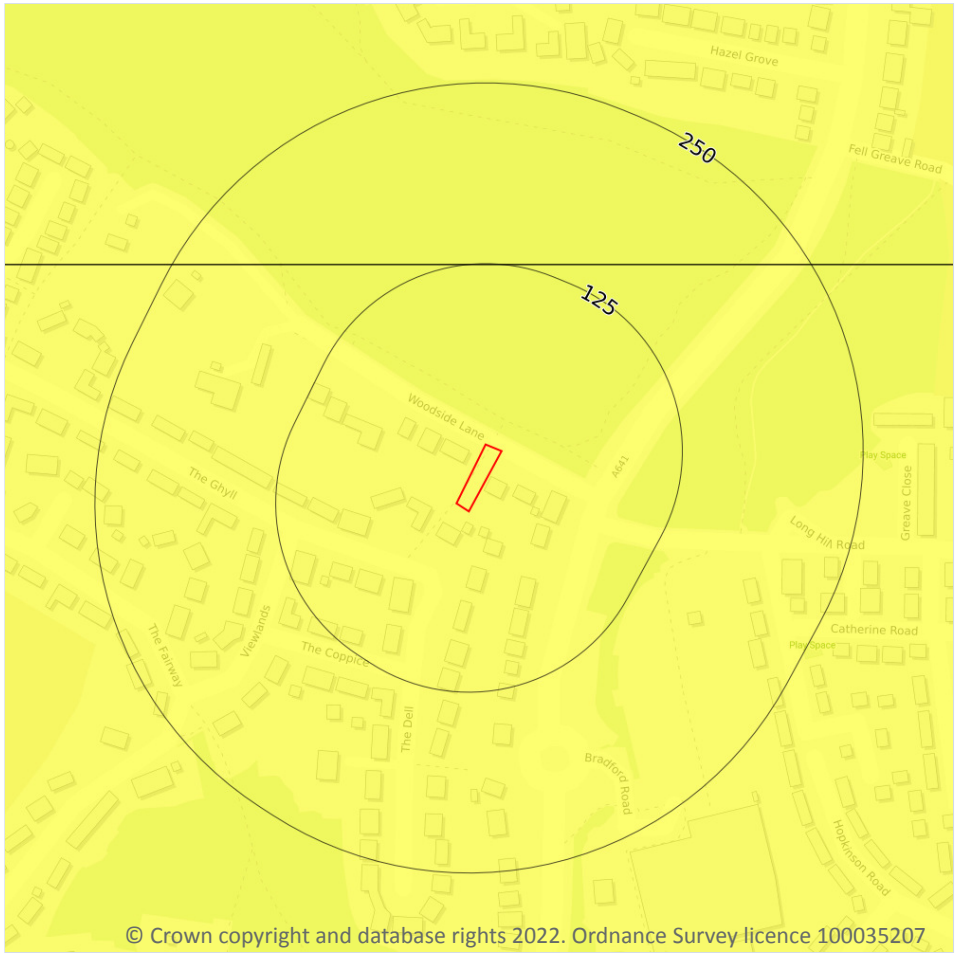
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 86**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

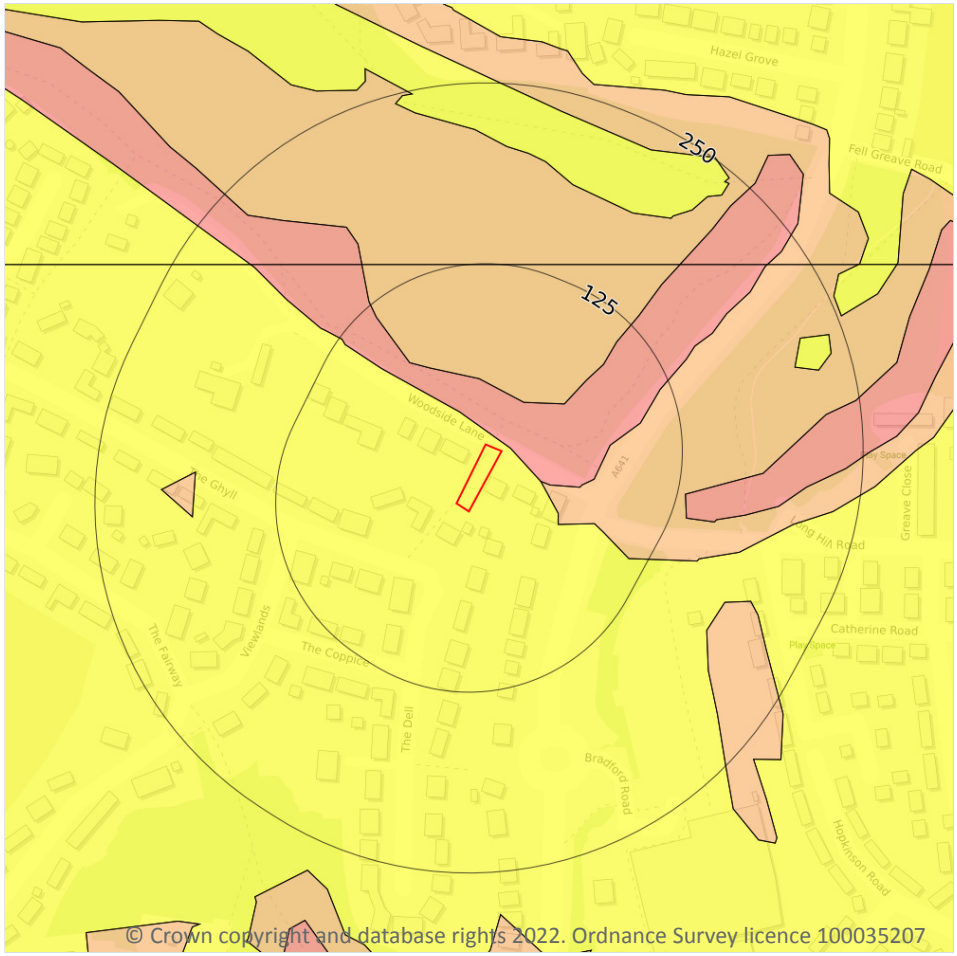
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 87**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	4

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

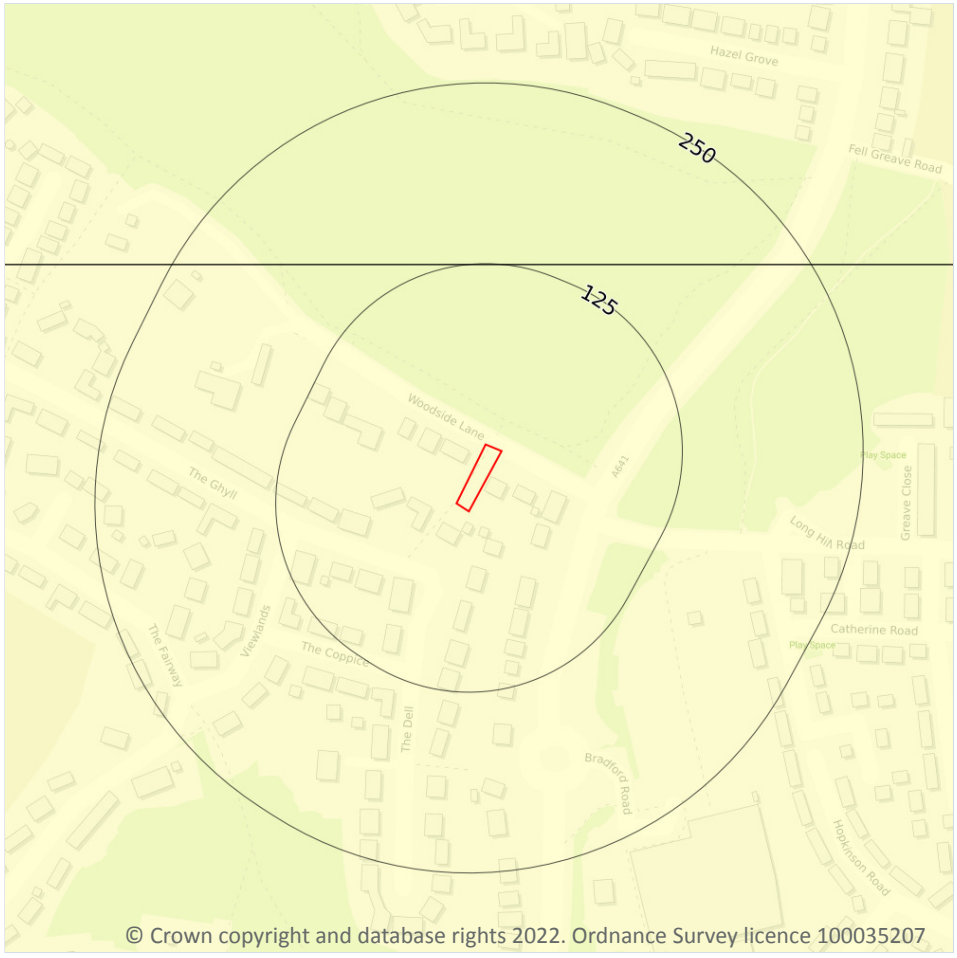
Features are displayed on the Natural ground subsidence - Landslides map on **page 88**

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

Location	Hazard rating	Details
5m NE	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
34m E	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
37m NE	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

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

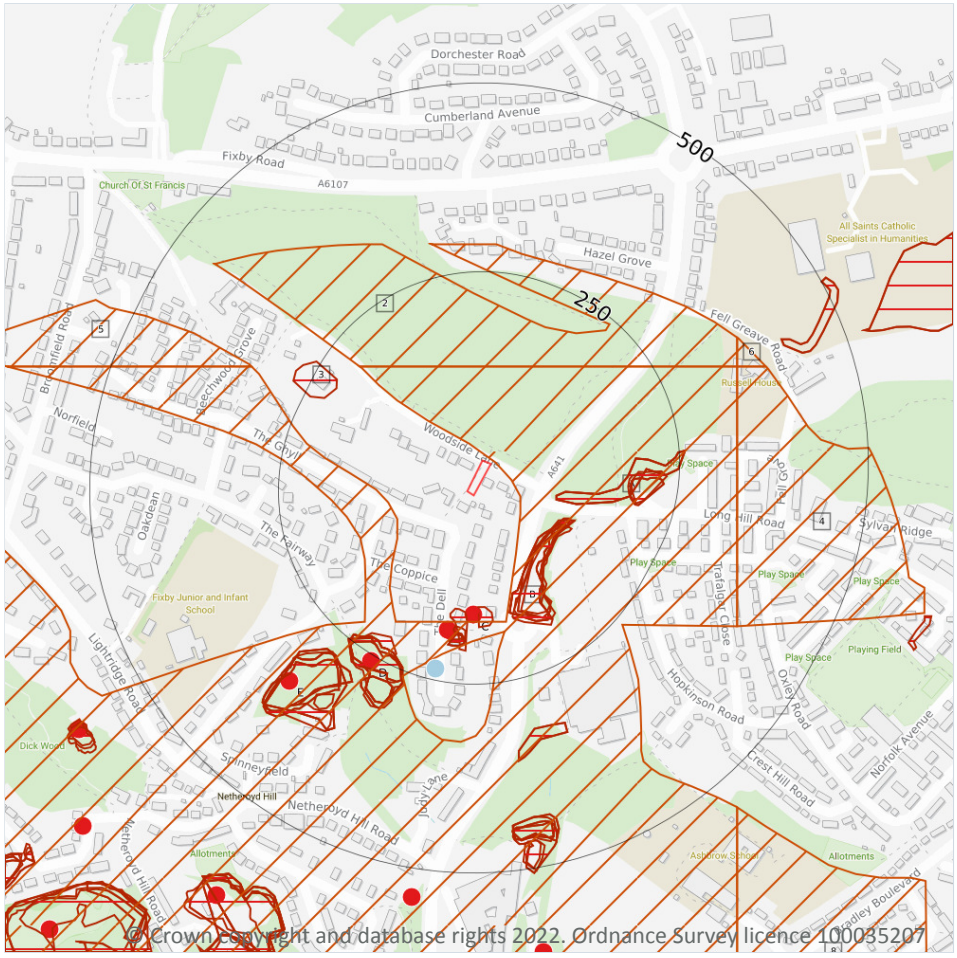
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 90**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	4

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 91**

ID	Location	Details	Description
C	157m S	Name: Woodside Mine Address: Netheroyd Hill, HUDDERSFIELD, West Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
C	181m S	Name: Woodside Mine Address: Netheroyd Hill, HUDDERSFIELD, West Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
D	258m SW	Name: Netheroyd Hill Address: Netheroyd Hill, HUDDERSFIELD, West Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
E	344m SW	Name: Netheroyd Hill Address: Netheroyd Hill, HUDDERSFIELD, West Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	31

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 91**

ID	Location	Land Use	Year of mapping	Mapping scale
A	97m E	Unspecified Ground Workings	1985	1:10000
A	97m E	Unspecified Ground Workings	1966	1:10560
A	97m E	Unspecified Ground Workings	1975	1:10000
B	102m SE	Reservoir	1948	1:10560
B	102m SE	Water Body	1892	1:10560
B	102m SE	Reservoir	1905	1:10560
B	107m SE	Pond	1985	1:10000
B	108m SE	Reservoir	1956	1:10560
B	110m SE	Pond	1966	1:10560
B	110m SE	Pond	1975	1:10000
B	113m SE	Reservoir	1938	1:10560
C	148m S	Unspecified Heap	1905	1:10560
C	152m S	Unspecified Ground Workings	1892	1:10560
C	175m S	Unspecified Heap	1956	1:10560
C	182m S	Unspecified Heap	1948	1:10560
C	182m S	Unspecified Heap	1905	1:10560
A	184m E	Unspecified Heap	1948	1:10560
C	186m S	Unspecified Heap	1938	1:10560
C	186m S	Unspecified Heap	1938	1:10560
A	188m E	Unspecified Heap	1938	1:10560
A	188m E	Unspecified Heap	1938	1:10560
A	188m E	Unspecified Heap	1956	1:10560
3	216m NW	Unspecified Ground Workings	1892	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
D	217m SW	Unspecified Quarry	1892	1:10560
D	230m SW	Unspecified Quarry	1985	1:10000
D	230m SW	Unspecified Quarry	1966	1:10560
D	230m SW	Unspecified Quarry	1975	1:10000
D	230m SW	Unspecified Quarry	1956	1:10560
D	232m SW	Unspecified Quarry	1948	1:10560
D	232m SW	Unspecified Quarry	1905	1:10560
D	236m SW	Unspecified Quarry	1938	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**10**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 91**

ID	Location	Land Use	Year of mapping	Mapping scale
C	149m S	Unspecified Disused Shaft	1975	1:10000
C	159m S	Unspecified Old Shafts	1951	1:10560
C	162m S	Unspecified Old Shafts	1948	1:10560
C	162m S	Unspecified Shafts	1905	1:10560
C	180m S	Unspecified Old Shafts	1951	1:10560
C	183m S	Unspecified Disused Shaft	1975	1:10000
C	183m S	Unspecified Disused Shaft	1985	1:10000
C	183m S	Unspecified Disused Shaft	1966	1:10560
C	184m S	Unspecified Old Shafts	1948	1:10560
C	184m S	Unspecified Shafts	1905	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	9

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).

Features are displayed on the Mining, ground workings and natural cavities map on **page 91**

ID	Location	Name	Commodity	Class	Likelihood
1	5m NE	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
2	124m N	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
4	326m E	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
5	329m NW	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
6	351m NE	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
8	541m SE	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered

ID	Location	Name	Commodity	Class	Likelihood
-	803m SE	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	833m NW	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	928m NW	Elland Flag Mines	Sandstone - Elland Flags	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	**1**

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 91**

ID	Location	Mine Address	Mineral	Data source	Publisher
C	235m S	Woodside, Huddersfield, West Yorkshire	Flagstone	MINING IN THE ELLAND FLAGS:A FORGOTTEN YORKSHIRE INDUSTRY BGS REPORT VOL16 NO4	NATURAL ENVIRONMENT RESEARCH COUNCIL

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	**0**

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	1

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

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

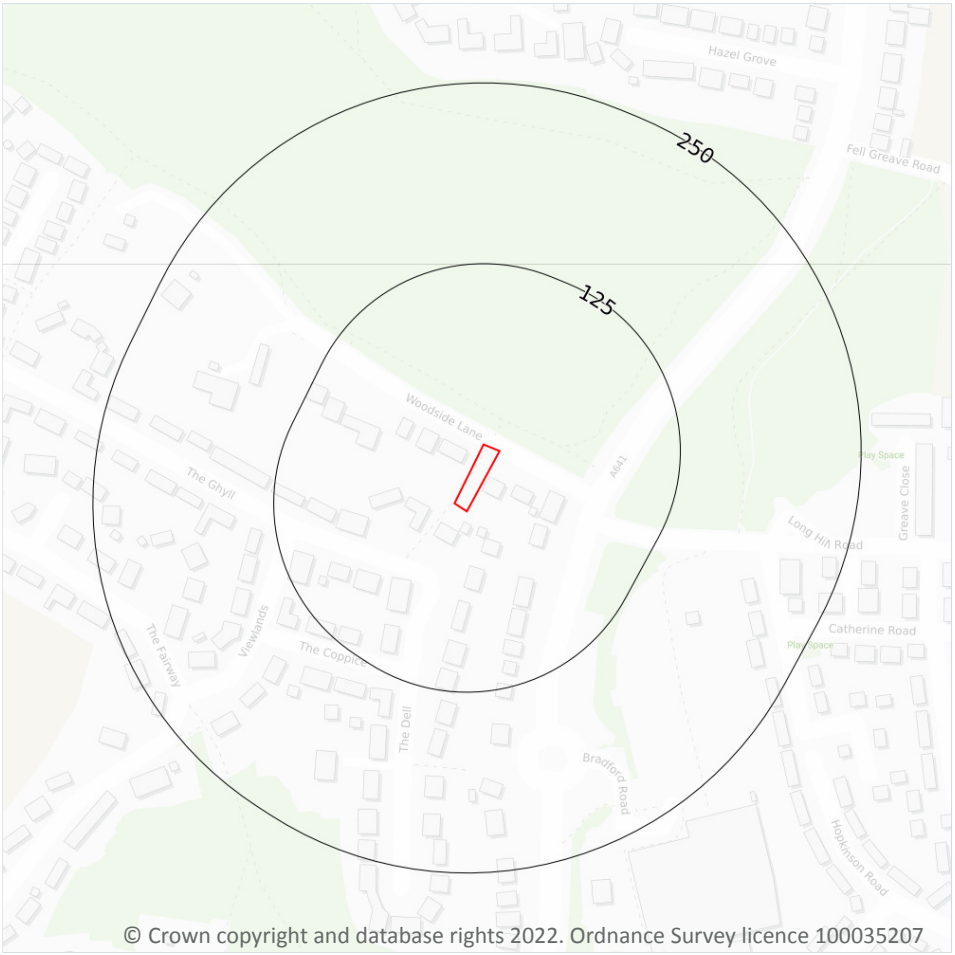
18.13 Clay mining

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 Radon



Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 98**

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	2

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	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
5m NE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	>180 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	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.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

Terms and conditions

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

APPENDIX 3

HISTORICAL ORDNANCE SURVEY MAPS

Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: County Series

Map date: **1854**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

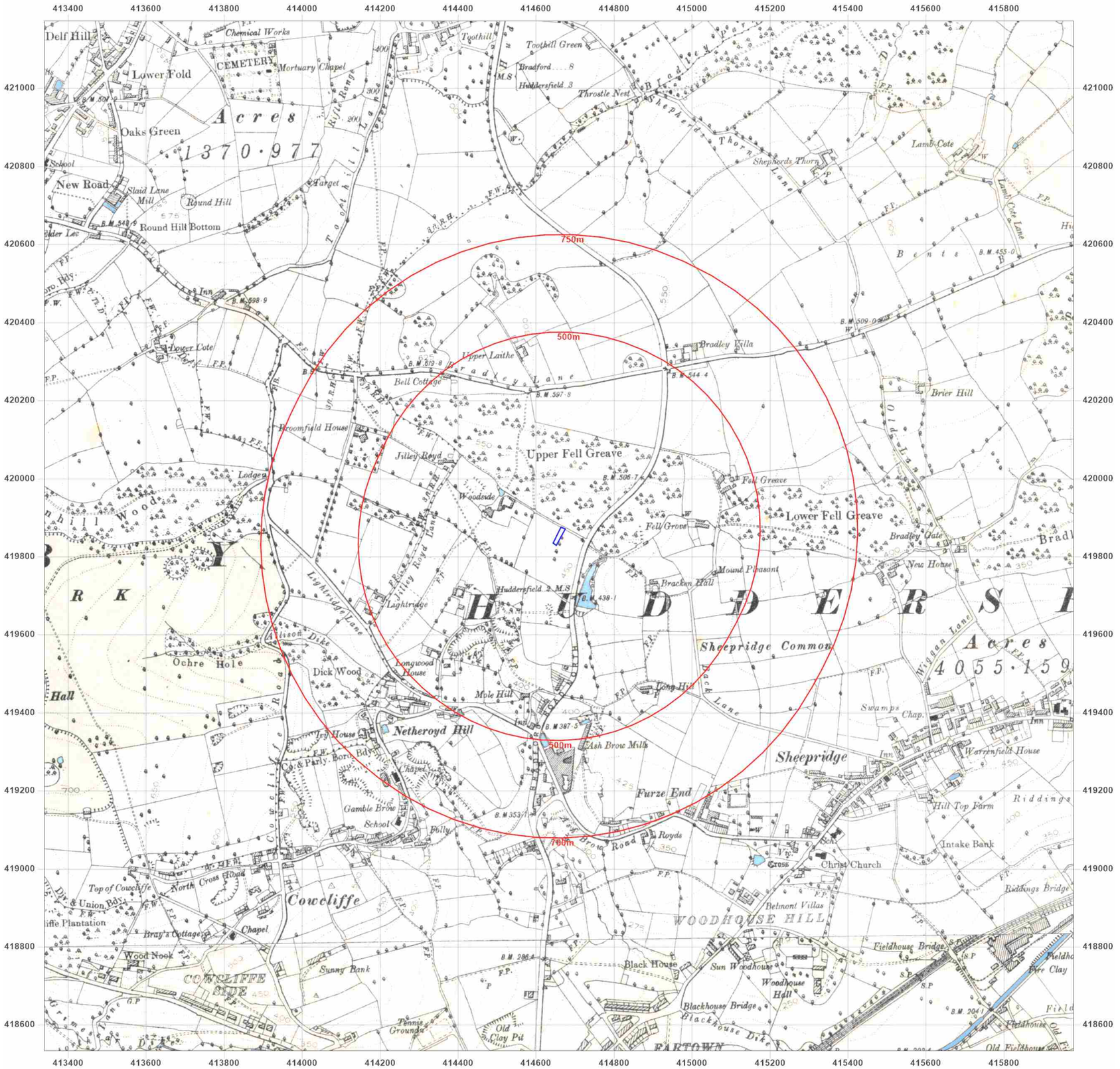
Surveyed 1850
Revised N/A
Edition 1854
Copyright N/A
Levelled 1853

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: County Series

Map date: **1889-1892**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

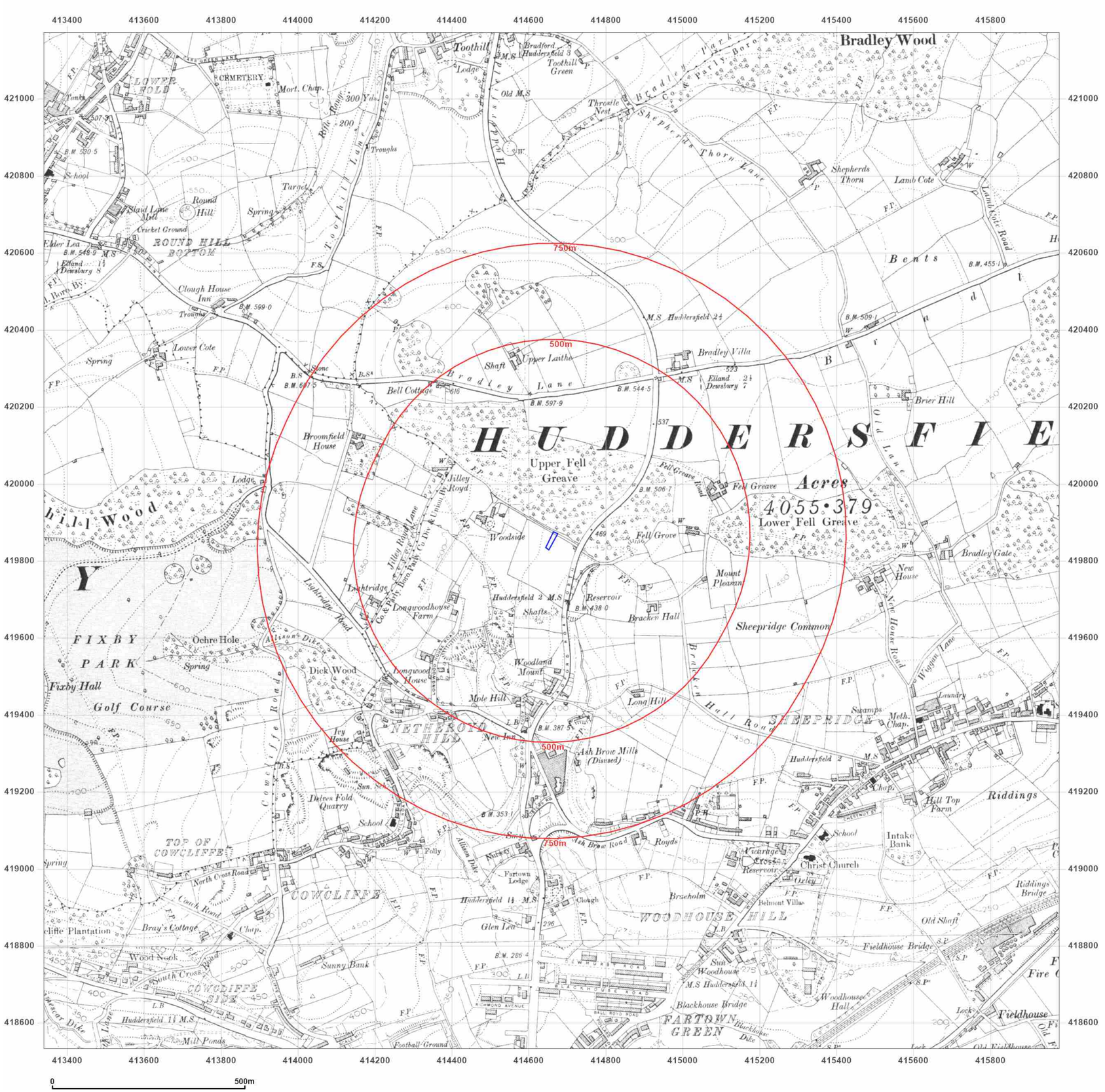
Surveyed 1889
Revised 1889
Edition N/A
Copyright N/A
Levelled N/A

Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: County Series

Map date: **1905**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1892
Revised 1905
Edition N/A
Copyright N/A
Levelled N/A

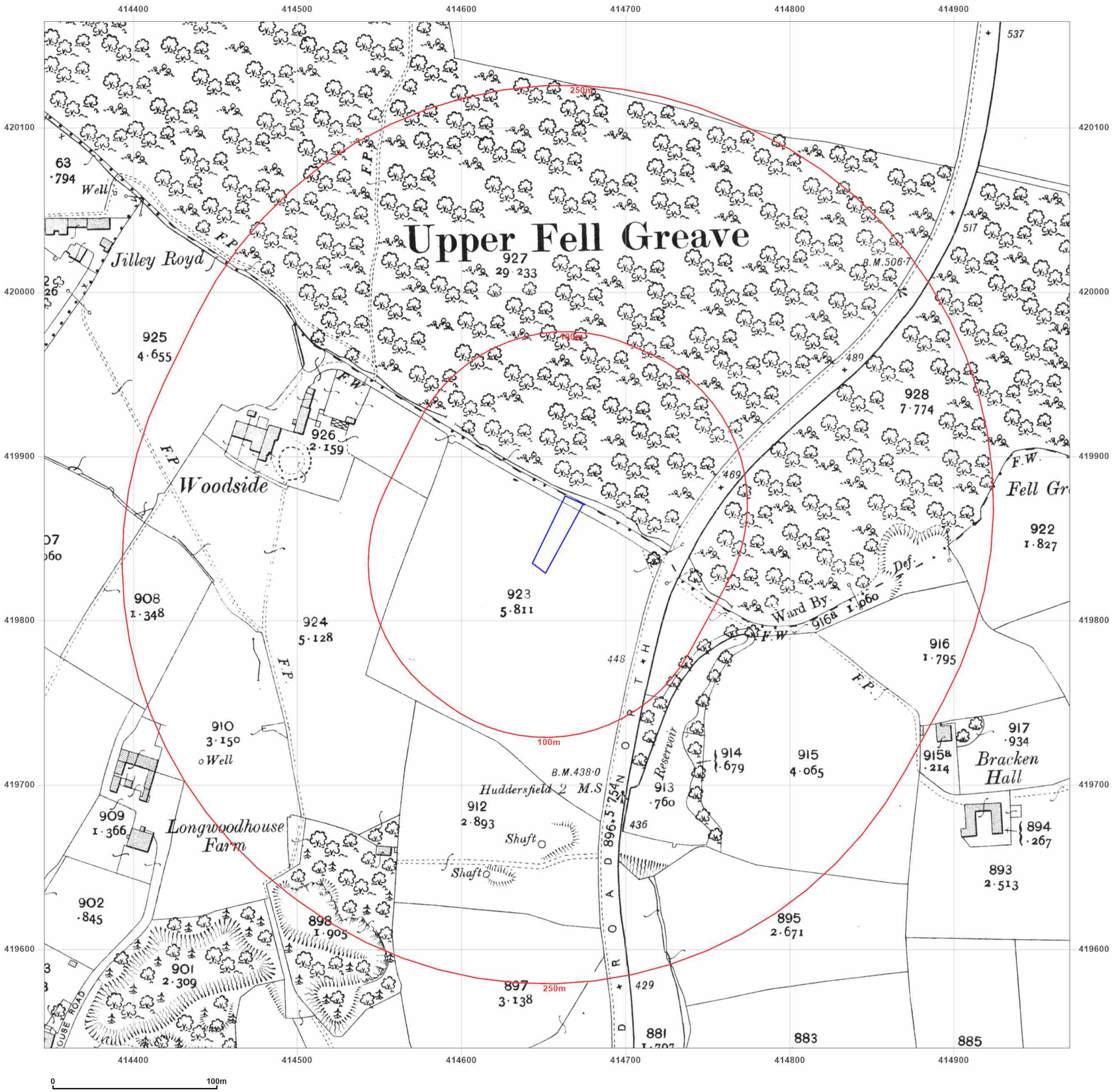
Surveyed 1889
Revised 1905
Edition N/A
Copyright N/A
Levelled N/A

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: County Series

Map date: **1906**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

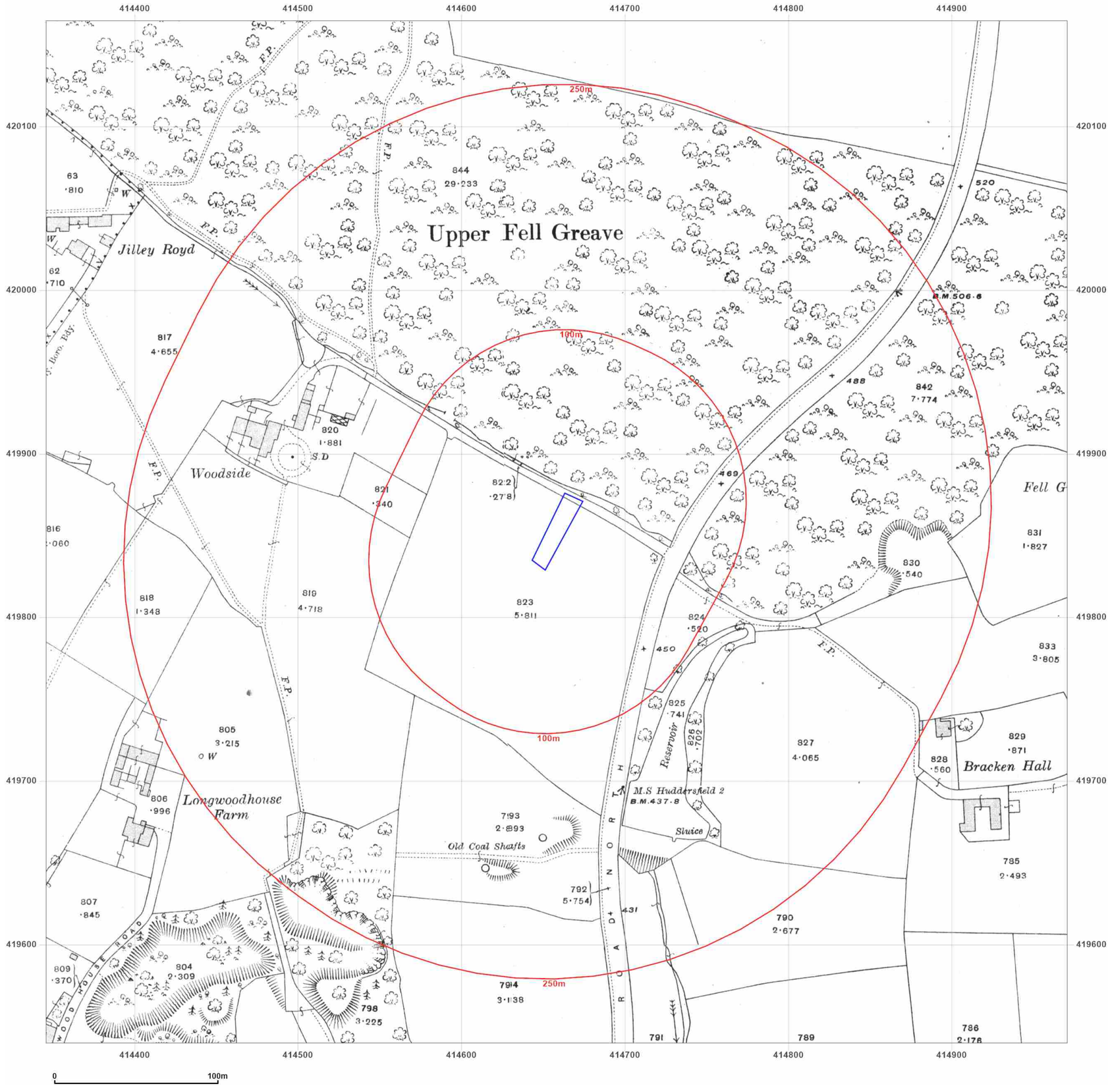
Surveyed 1906
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: County Series

Map date: **1918**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

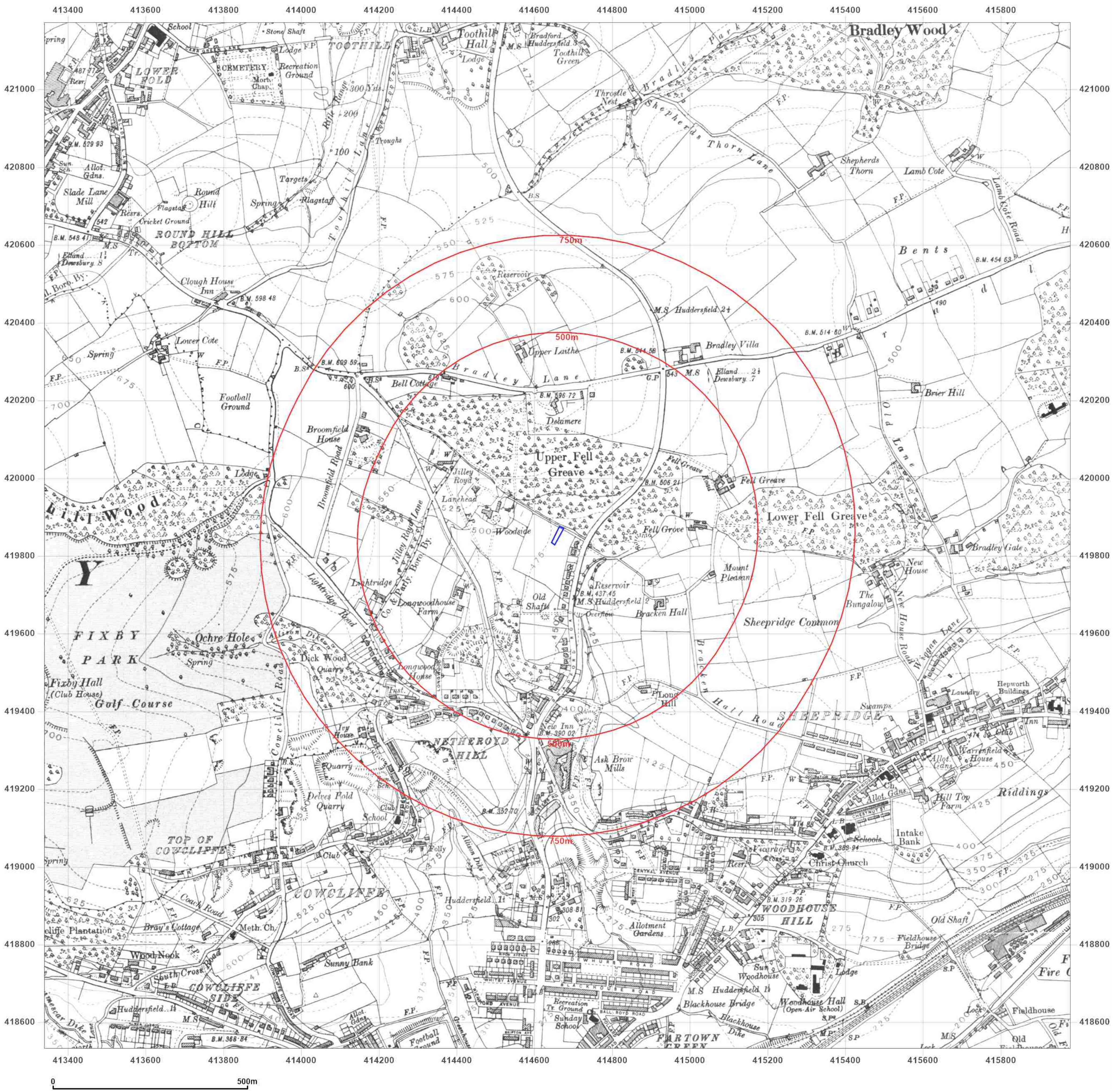
Surveyed 1918
Revised 1918
Edition N/A
Copyright N/A
Levelled N/A

Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: County Series

Map date: **1930-1931**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1850
Revised 1930
Edition N/A
Copyright N/A
Levelled N/A

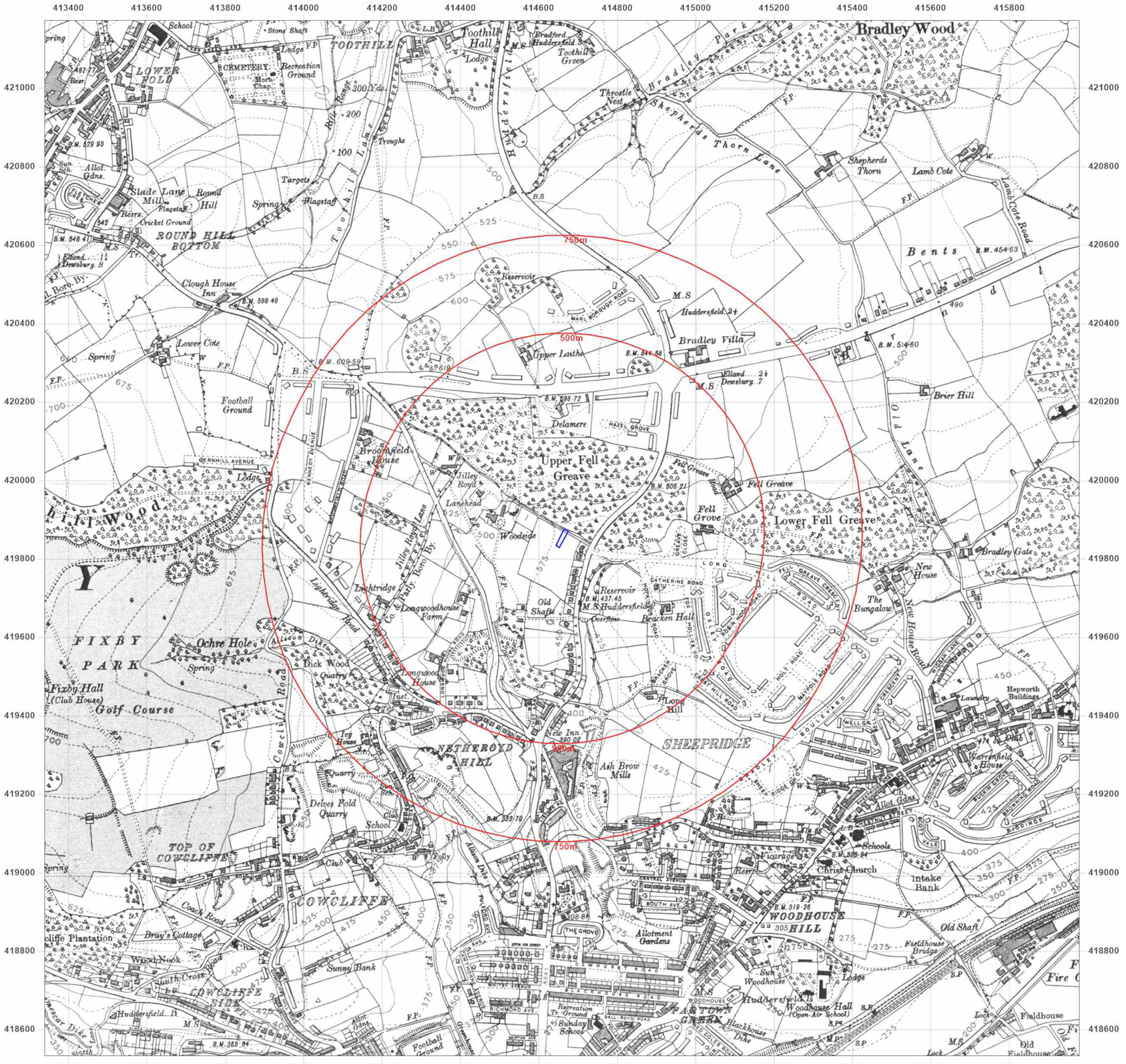
Surveyed 1851
Revised 1930
Edition 1930
Copyright N/A
Levelled 1931

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1850
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

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

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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

Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: County Series

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1850
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

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

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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

Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

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

N
W E
S

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

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

Surveyed 1951
Revised 1951
Edition N/A
Copyright 1956
Levelled N/A

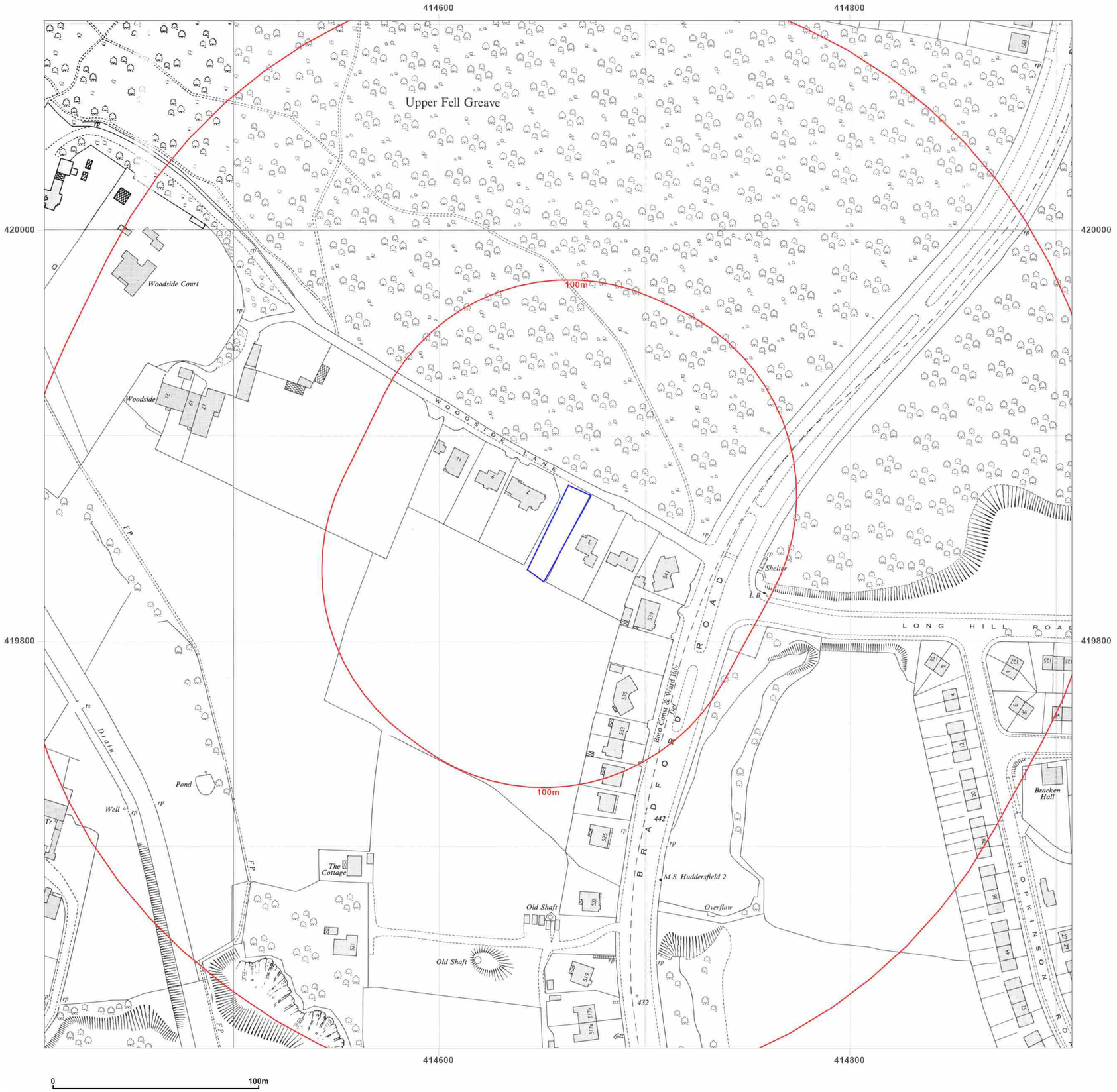
Surveyed 1951
Revised 1951
Edition N/A
Copyright 1956
Levelled N/A

Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **1958-1959**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

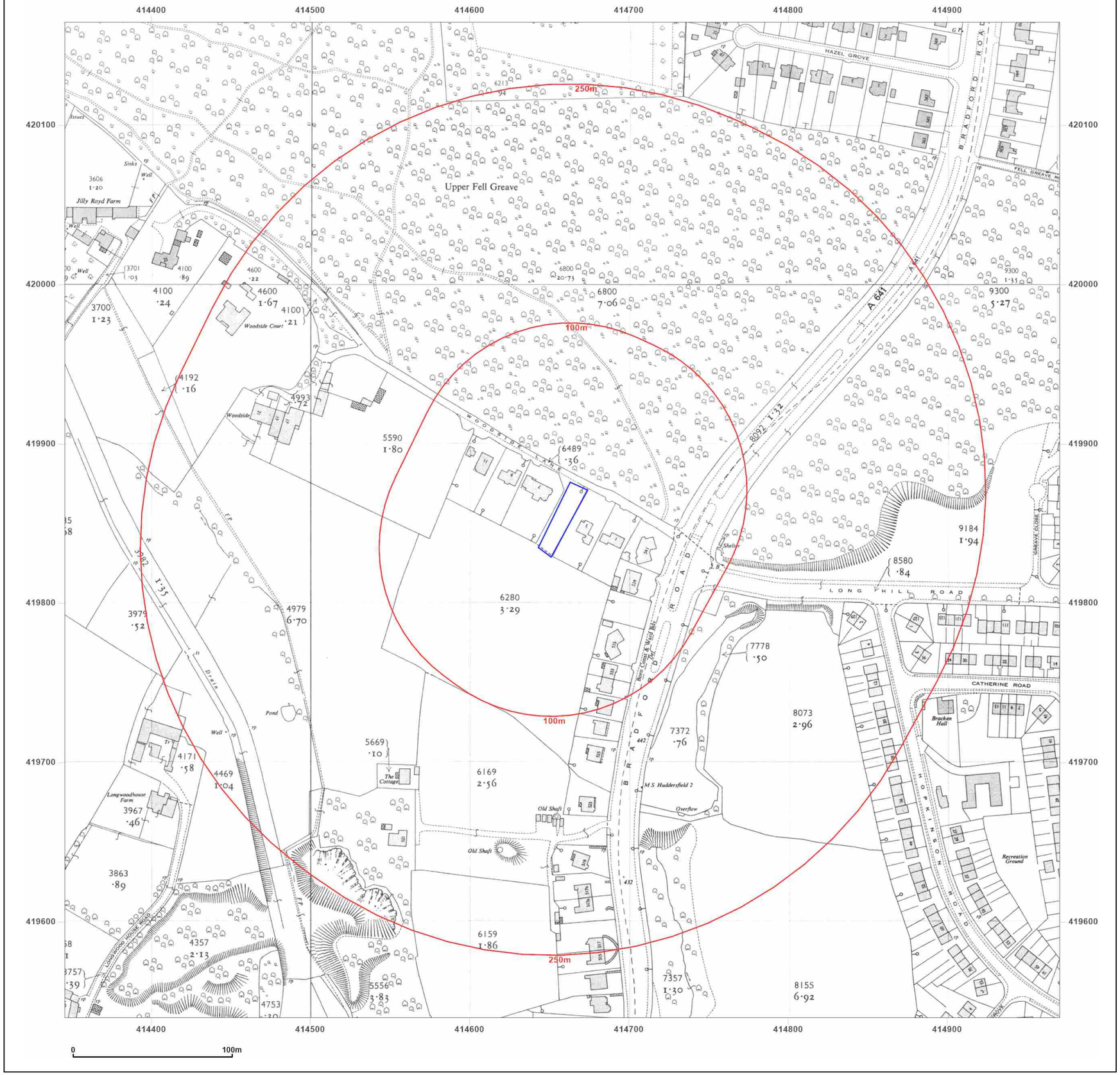
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed 1958 Revised 1958 Edition N/A Copyright 1959 Levelled 1931
Surveyed 1958 Revised 1958 Edition N/A Copyright 1959 Levelled 1931	Surveyed 1958 Revised 1958 Edition N/A Copyright 1959 Levelled 1931

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **1959**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1958
Revised 1958
Edition 1959
Copyright N/A
Levelled 1931

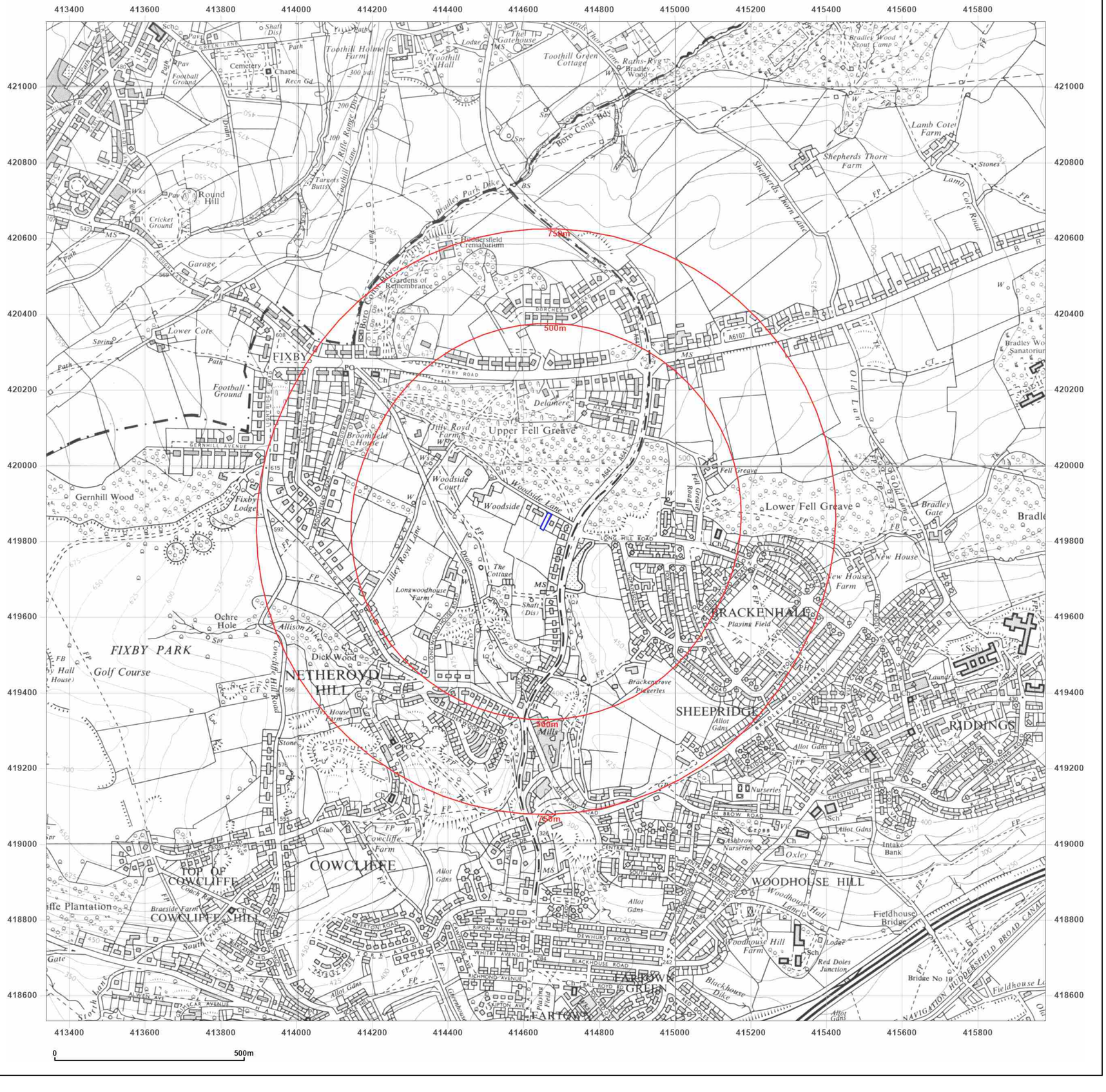
Surveyed 1958
Revised 1958
Edition 1959
Copyright 1959
Levelled 1931

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: Provisional
Map date: **1965-1969**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S

Surveyed 1969
Revised 1969
Edition N/A
Copyright N/A
Levelled N/A

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

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

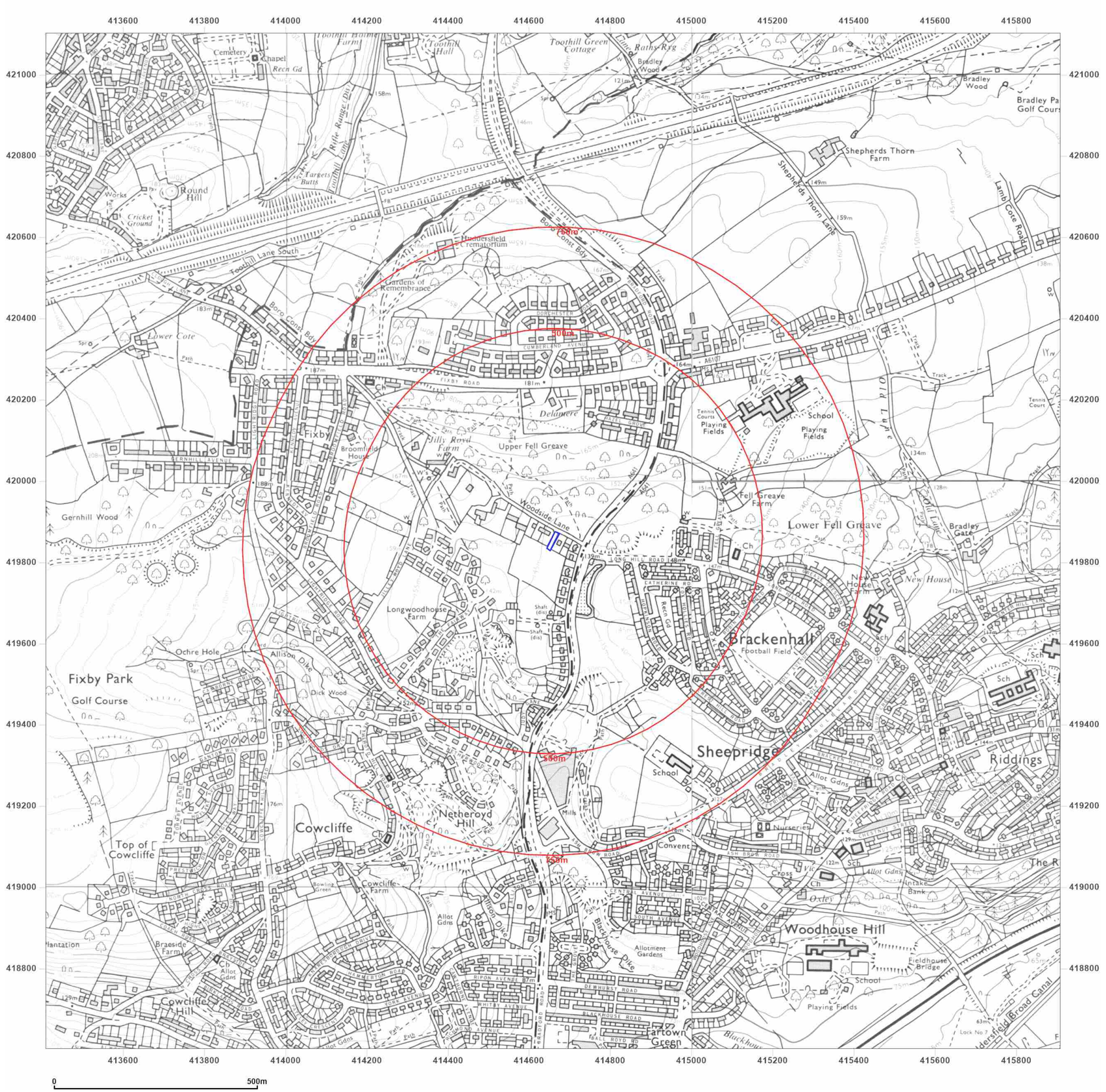
Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **1975-1976**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

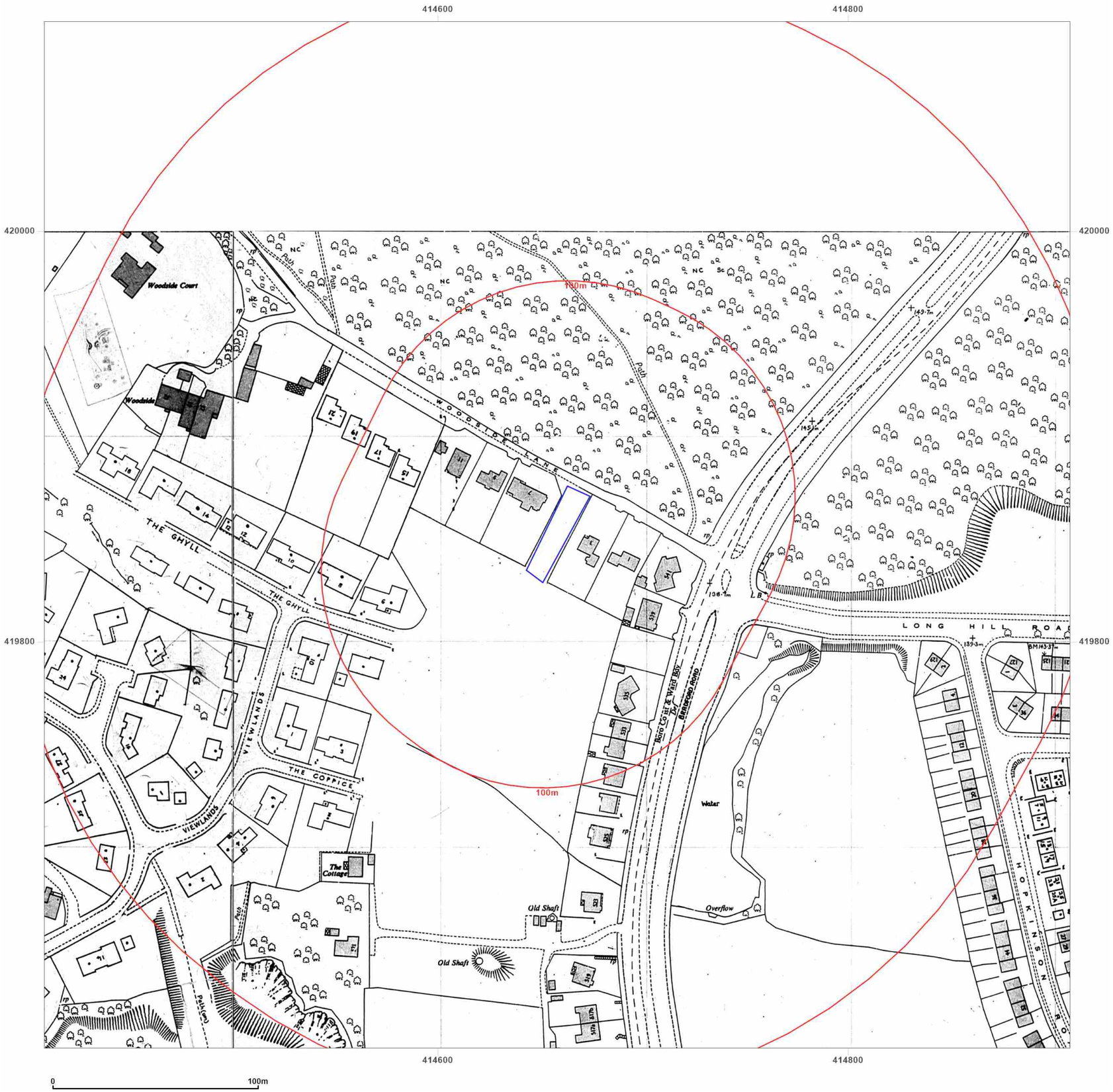
Surveyed 1975 Revised 1976 Edition N/A Copyright N/A Levelled N/A	Surveyed 1974 Revised 1975 Edition N/A Copyright N/A Levelled N/A
Surveyed 1974 Revised 1975 Edition N/A Copyright N/A Levelled N/A	Surveyed 1974 Revised 1975 Edition N/A Copyright N/A Levelled N/A

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **1979**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

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

Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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

Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **1981-1985**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

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

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

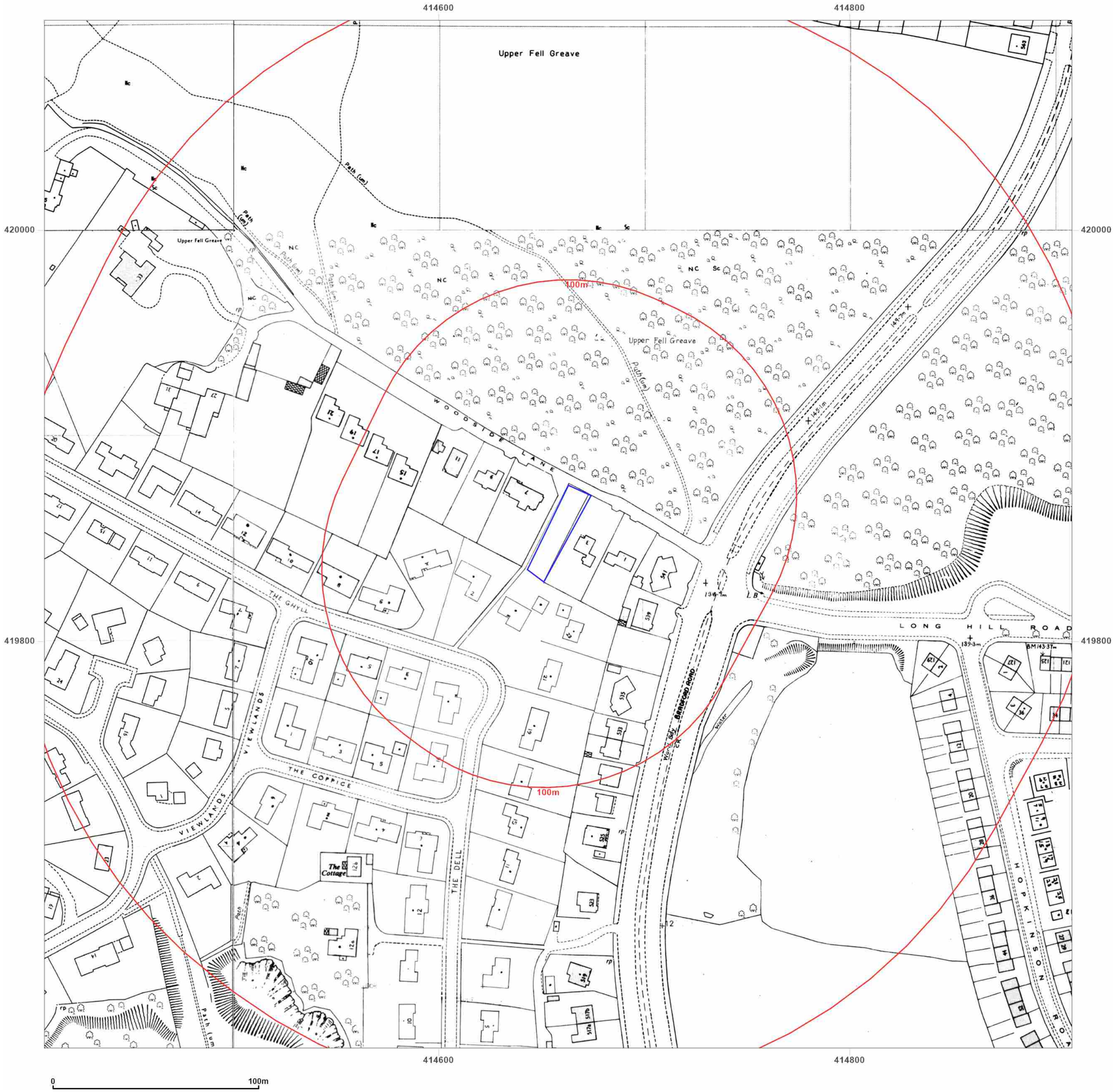
Surveyed 1984
Revised 1985
Edition N/A
Copyright N/A
Levelled N/A

Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **1987-1992**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

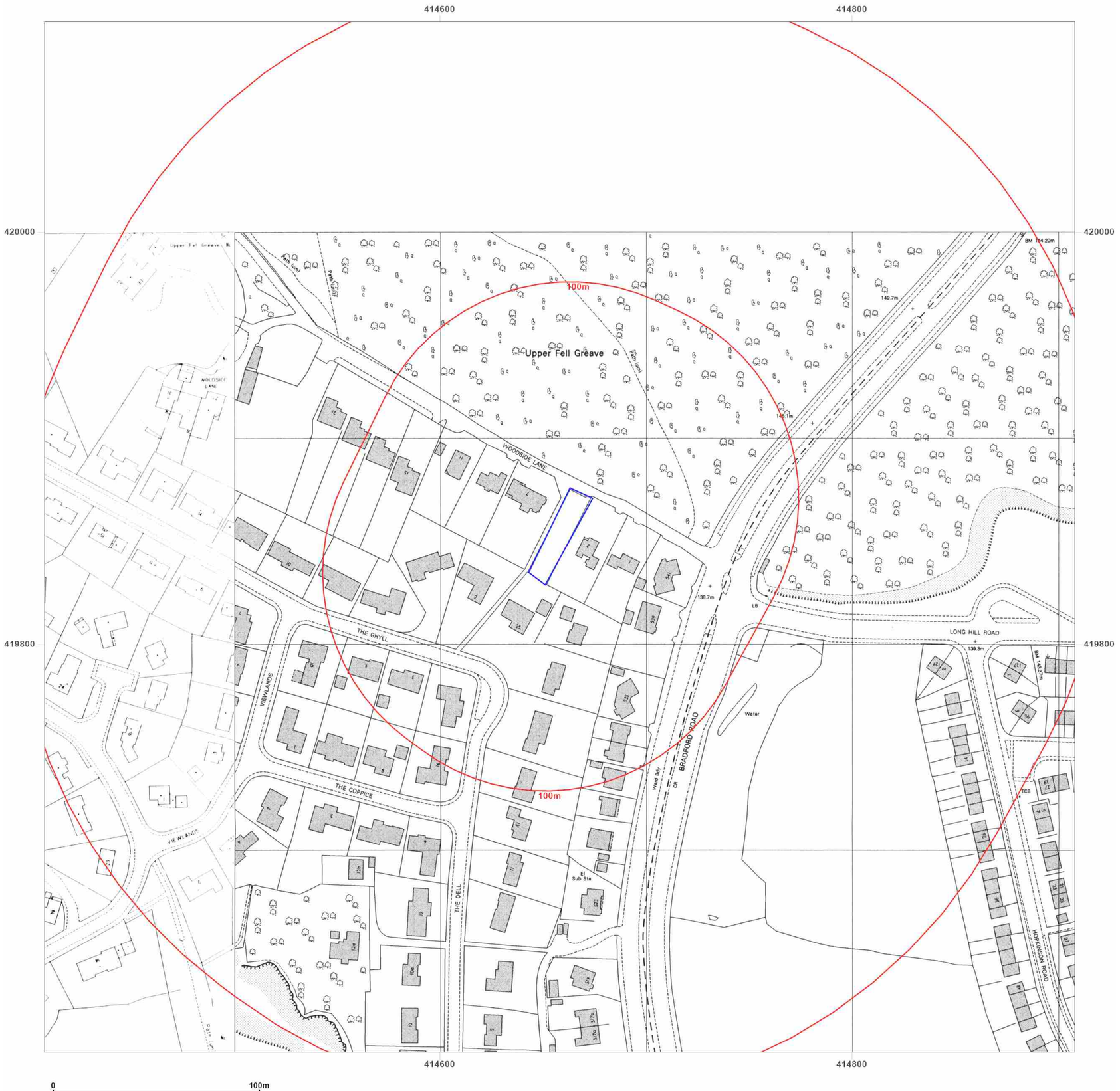
Surveyed N/A Revised N/A Edition N/A Copyright 1992 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1992 Levelled N/A
Surveyed 1959 Revised 1987 Edition N/A Copyright 1987 Levelled 1959	Surveyed 1989 Revised 1989 Edition N/A Copyright 1989 Levelled N/A

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **1990-1993**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

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

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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

Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

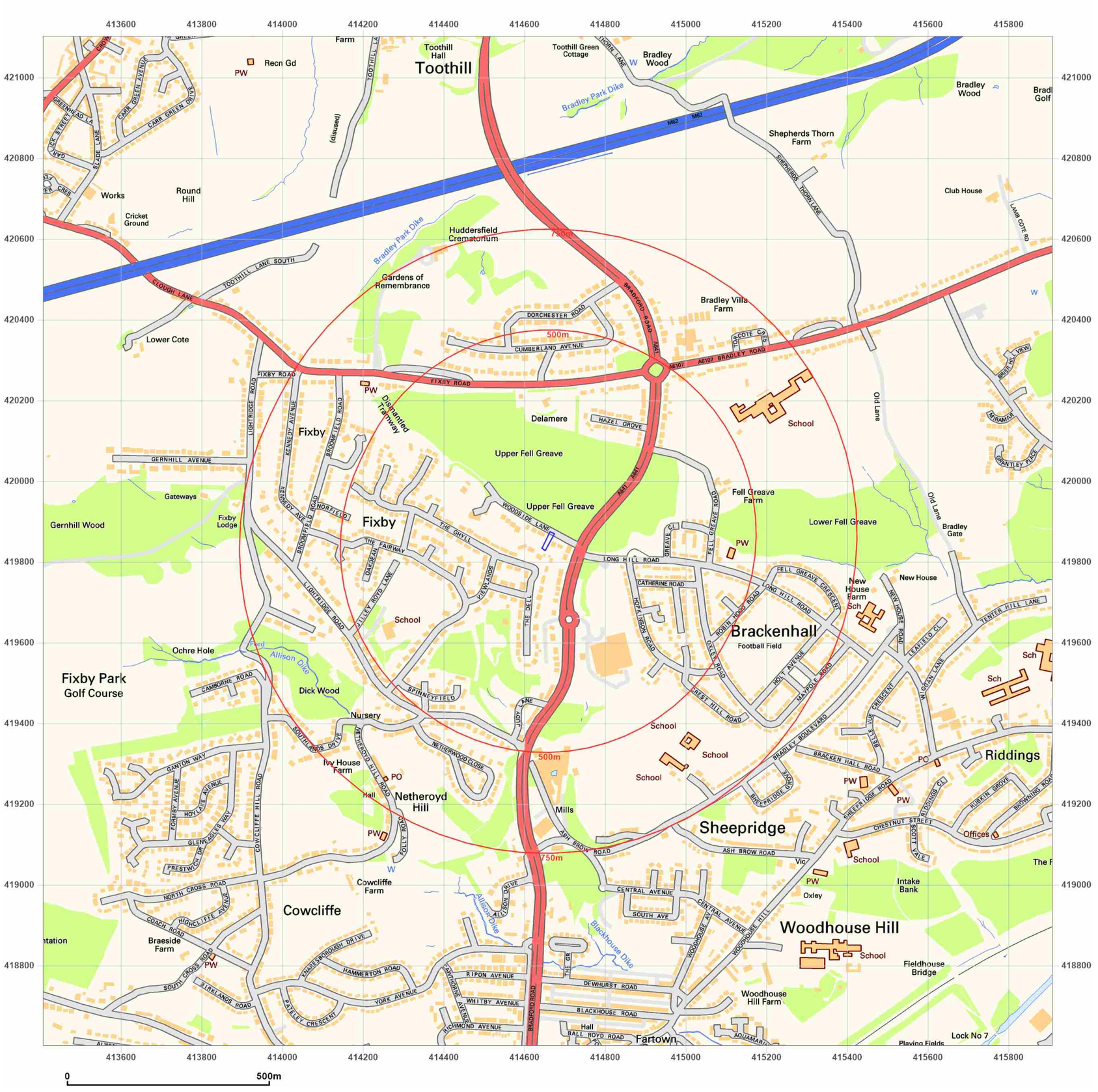
Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
Levelled N/A

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2001

Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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

Groundsure INSIGHTS

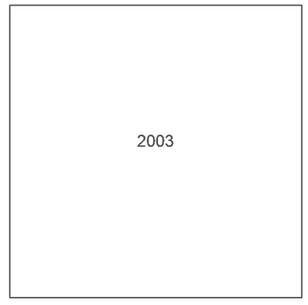
Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

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

N
W E
S

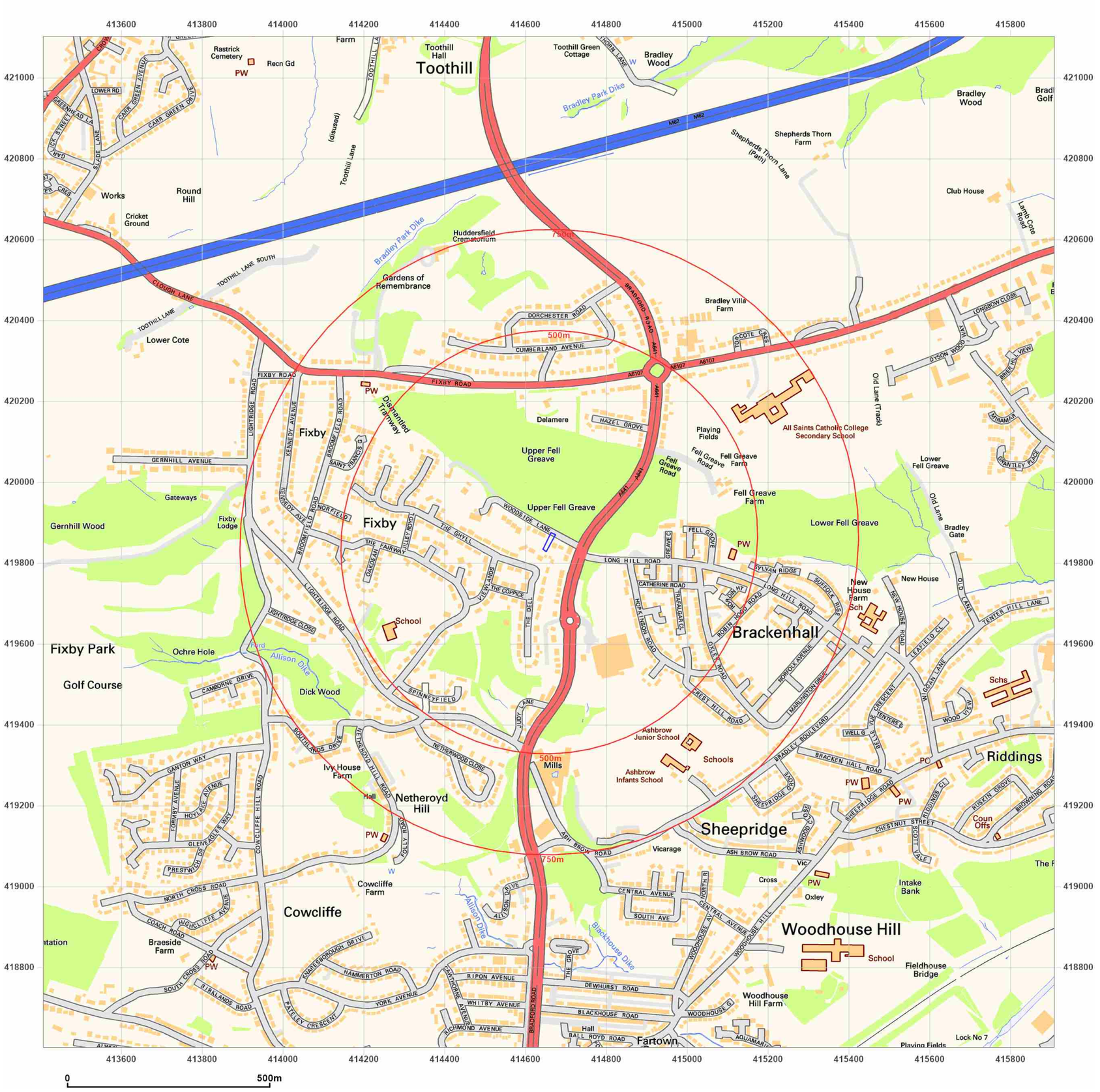


Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

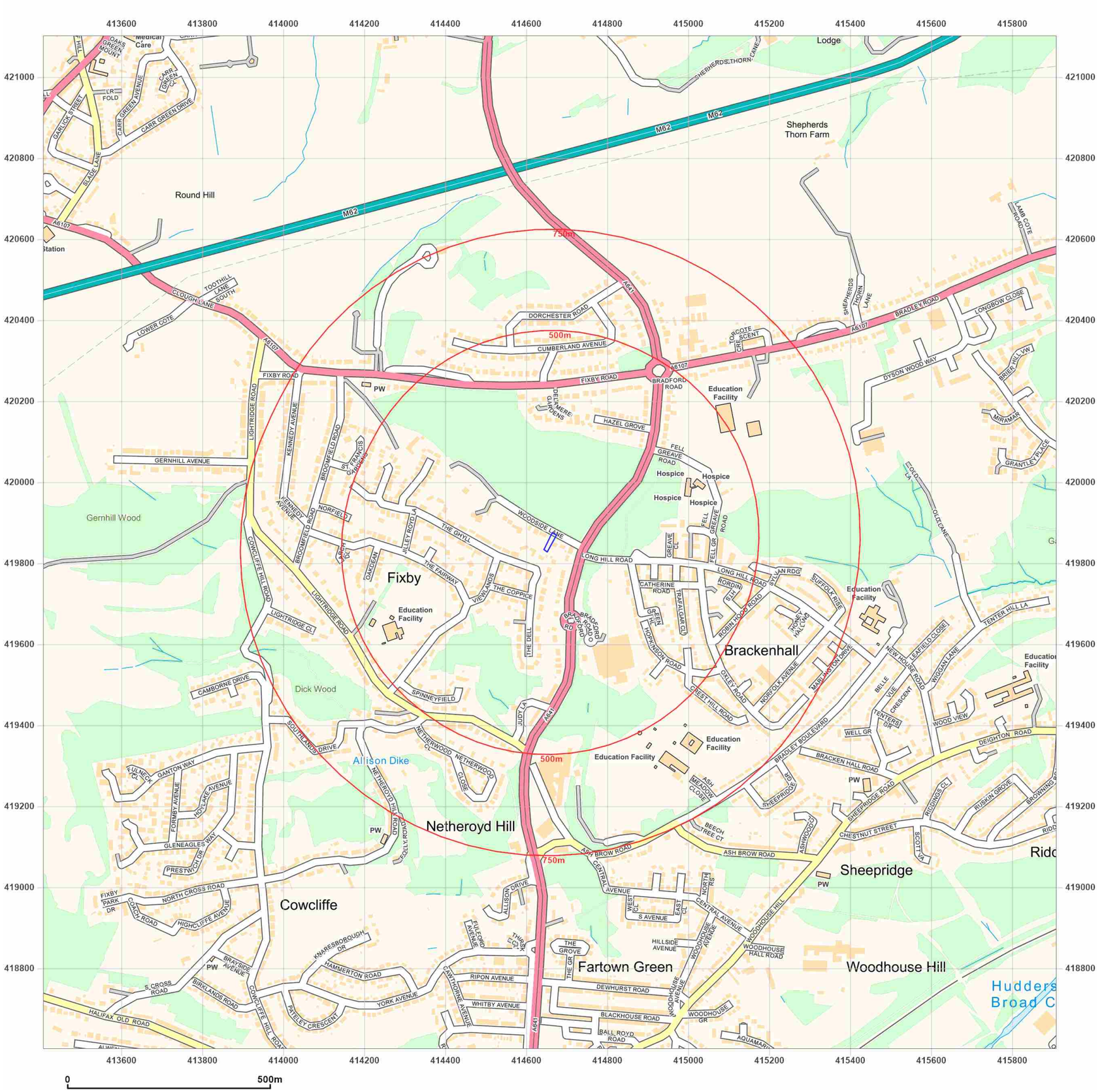
2010

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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



Groundsure INSIGHTS

Site Details:

25, THE DELL, FIXBY,
HUDDERSFIELD, HD2 2FD

Client Ref: 2825-22_Woodside_Lane
Report Ref: GS-9192740
Grid Ref: 414658, 419852

Map Name: National Grid

Map date: **2022**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2022

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 11 November 2022

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

APPENDIX 4

RISK ASSESSMENT MATRIX

Preliminary Risk Assessment Methodology (After NHBC Guidance for the Safe Development of Housing on Land Affected by Contamination (2008))

NHBC Guidance for the Safe Development of Housing on Land Affected by Contamination (2008) sets out a methodology for the estimation of risk.

At Phase I the risk estimation will take the form of a qualitative risk assessment, which will be entirely based on the conceptual model for each potential end-use of the site. Comments on level of uncertainty will also need to be included for each source-pathway-target linkage to allow the confidence in the assessed risks to be understood. The results of the qualitative risk assessment will allow the risk evaluation to be concisely described in the following chapters.

The methodology for risk evaluation is a qualitative method for interpreting the output for the risk estimation stage of the assessment. It involves the classification of the:

The magnitude of probability (i.e. likelihood).
[takes into account both the presence of the hazard and receptor and the integrity of the pathway]

The magnitude of the potential consequence (i.e. severity).
[takes into account both the potential severity of the hazard and the sensitivity of the receptor]

Classification of Probability

Classification	Definition	Examples
High likelihood (Hi)	There is a pollutant linkage and an event that either appears very likely in the short term and almost inevitable in the long term, or there is evidence at the receptor of harm or pollution.	*A) Elevated concentrations of toxic contaminants are present in soils in the top 0.5m in a residential garden.* *B) Ground/groundwater contamination could be present from chemical works, containing a number of USTs, having been in operation on the same site for over 50 years*
Likely (Li)	There is a pollutant linkage, and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.	*A) Elevated concentrations of toxic contaminants are present in soils at depths of 0.5-1.0m in a residential garden, or the top 0.5m in public open space.* *B) Ground/groundwater contamination could be present from an industrial site containing a UST present between 1970 and 1990. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.*
Low likelihood (Lw)	There is a pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the short term.	*A) Elevated concentrations of toxic contaminants are present in soils at depths >1m in a residential garden, or 0.5-1.0m in public open space.* *B) Ground/groundwater contamination could be present on a light industrial unit constructed in the 1990s containing a UST in operation over the last 10 years – the tank is double skinned but there is no integrity testing or evidence of leakage.*
Unlikely (Ul)	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.	*A) Elevated concentrations of toxic contaminants are present below hardstanding.* *B) Light industrial unit <10 yrs old containing a double skinned UST with annual integrity testing results available.*

Preliminary Risk Assessment Methodology (After NHBC Guidance for the Safe Development of Housing on Land Affected by Contamination (2008))

Classification of Consequence

	Definition	Examples
Severe (Sv)	Highly elevated concentrations likely to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs. A Category 1: Human Health risk is present. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long - term maintenance of the population. Catastrophic damage to crops, buildings or property.	*Significant harm to humans is defined in circular 01/2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.* *Major fish kill in surface water from large spillage of contaminants from site.* *Highly elevated concentrations of List I and substances present in groundwater close to small potable abstraction (high sensitivity).* *Explosion, causing building collapse (can also equate to immediate human health risk if buildings are occupied).*
Medium (Md)	Elevated concentrations which could result in "significant harm" to human health as defined by the EPA 1990, Part 2A if exposure occurs. A Category 2: Human Health risk is present. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.	*Significant harm to humans is defined in circular 01/2006 as death, disease* serious injury, genetic mutation, birth defects or the impairment of reproductive functions.* *Damage to building rendering it unsafe to occupy e.g. foundation damage resulting in instability.* *Ingress of contaminants through plastic potable water pipes.*
Mild (Ml)	Exposure to human health unlikely to lead to "significant harm". A Category 3 Human Health risk is present. Equivalent to EA Category 3 pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population Minor damage to crops, buildings or property.	*Exposure could lead to slight short - term effects (e.g. mild skin rash).* *Surface spalling of concrete.*
Minor (Mr)	No measurable effect on humans.A Category 4: Human Health risk is present. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.	*The presence of contaminants at such concentrations that protective equipment is required during site works.* *The loss of plants in a landscaping scheme.* *Discoloration of concrete.*

* For these purposes, disease is to be taken to mean an unhealthy condition of the body or a part of it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only insofar as it is attributable to the effects of a pollutant on the body of the person concerned.

The classification of consequence does not take into account the probability of the consequence being realized. Therefore, there may be more than one consequence for a particular pollutant linkage. Both a severe and medium classification can result in death. Severe relates to short term (acute) risk while medium relates to long

Preliminary Risk Assessment Methodology (After NHBC Guidance for the Safe Development of Housing on Land Affected by Contamination (2008))

term (chronic) risk. Mild relates to significant harm but to less sensitive receptors. Minor classification relates to harm which is not significant but could have a financial cost.

The classification gives a guide as to the severity and consequence of identified risk when compared with other risk presented on the site. It should be noted that if a risk is identified it cannot be classified as “no risk” but as “very low risk”. Differing stakeholders may have a different view on the acceptability of a risk.

Risk Evaluation Matrix

		Consequence			
		Severe (Sv)	Medium (Md)	Mild (Mi)	Minor (Mr)
Probability	High likelihood (Hi)	Very high risk (VH)	High Risk (H)	Moderate Risk (M)	Mod/low risk (M/L)
	Likely (Li)	High risk (H)	Moderate risk (M)	Mod/low risk (M/L)	Low risk (L)
	Low likelihood (Lw)	Moderate risk (M)	Mod/low risk (M/L)	Low risk (L)	Very low risk (VL)
	Unlikely (Ul)	Mod/low risk (M/L)	Low risk (L)	Very low risk (VL)	Very low risk (VL)

Risk Categorizations

Very high risk (VH)	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realized, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High risk (H)	Harm is likely to arise to a designated receptor from an identified hazard. Realization of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer-term.
Moderate risk (M)	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer-term.
Low risk (L)	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realized, would at worst normally be mild.
Very low risk (VL)	There is a low possibility that harm could arise to a receptor. In the event of such harm being realized it is not likely to be severe.

Reference

Rudland, D J, Lancefield, R M, Mayell, P N; 2001; Contaminated land Risk Assessment. A guide to Good Practice; CIRIA Report C552.

The NHBC (National House-Building Council) the Environment Agency and the Chartered Institute of Environmental Health, 2008, Guidance for the Safe Development of Housing on Land Affected by Contamination R&D66.