



PHASE I: DESKTOP STUDY AND PRELIMINARY RISK ASSESSMENT REPORT FOR QUARMBY ROAD, HUDDERSFIELD.

For: Mr Stephen Peace

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

Tel: 01484 718707

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Quality Assurance

	Name	Position	Signature	Date
Prepared by:	Joe Frost	Geoenvironmental Engineer		January 2022
Reviewed by:	Andrew Dickinson	Associate Director		January 2022
Approved by:	Andrew Dickinson	Associate Director		January 2022

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1. Introduction

GeoEnviro Solutions Limited (GES) was instructed by Mr Stephen Peace (the Client) to produce a Phase I: Desktop Study and Preliminary Risk Assessment Report for the site located at Quarmby Road, Huddersfield, HD3 4EA.

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).

1.1 Objectives

The objectives of this Phase I report are to:

- 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.

1.2 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.

1.3 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 adjacent to 69a Quarmby Road, Huddersfield, at approximate National Grid Reference (NGR): 411571:416928 (centre of the site).

A site location plan is presented as Drawing No. GES 2112-21/01 in [Appendix 1](#).

2.2 Site Reconnaissance

A site reconnaissance was carried out on the 17th December 2021. All details from the site walkover are included in the site description below.

2.3 Site Description

The site is an irregular shaped piece of land with an approximate area of 0.1 Ha.

The topography of the site is generally flat.

The site is occupied by a new build property with a driveway. The land comprises a mix of hardstanding and landscaped areas.

An approximate distribution of the surface covering is given below in Table 2.1: Site Surface Covering.

Table 2.1: Site Surface Covering

Type of Surface Cover	Distribution (%)
Soft Ground (grassed and landscaped areas)	-
Hardstanding	80
Roadways	10
Buildings	10
Water (ponds, streams)	-

Access to the site is via Quarmby Road.

A selection of photographs from the site walkover are presented in [Appendix 2](#).

Surrounding Area

The current surrounding land use to the site is generally residential properties in all directions. A substation is noted on the boundary.

The topography of the surrounding area is generally flat.

2.4 Site Usage

A new two storey dwelling has been constructed at the site which included a partial demolition of the adjacent private garage.

The proposed development plan, as provided to GES, drawn by the client referenced REV:28/8/2019-91038 and dated august 2019 is provided within **Appendix 1**.

This development plan has been utilised in the preparation of this risk assessment, if an alternative development is subsequently proposed this assessment may need revising and should not be relied upon in its present outcome.

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 3**.

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.

Artificial/Made Ground

There are no artificial or made ground deposits directly underlying the site. However, there are deposits considered to represent Made Ground, described as infilled ground, approximately 259m northwest of the site.

Superficial Ground and Drift Deposits

There are no superficial ground deposits directly underlying the site. However, there are deposits considered to represent Alluvium, comprised of clays, sands and gravels, approximately 320m southwest of the site.

Bedrock Geology

Underlying the superficial drift deposits is bedrock comprised of The Rough Rock Sandstone Formation.

Landslips

There are no records within 250 m.

Linear Features

There is record of a landform (Fossil horizon) 207 m northeast of the site and a fault 308 m southwest from the site.

Natural Ground Subsidence

The following hazard ratings applicable to the site and land within 50 m 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 Site 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.

Table 3.1: Aquifer Definitions, below, presents Environment Agency aquifer designations.

Table 3.1: Aquifer Designations

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 Superficial Deposits

As a consequence of the superficial geology underlying the site no aquifer has been identified within 50 m of the site. However, an aquifer within 500 m has been identified to south of the site and has been designated Secondary (A).

Permeability of Superficial Deposits

There are no superficial deposits underlying the site.

Aquifer within Bedrock Geology

As a result of the bedrock geology underlying the site, an aquifer has been identified and has been designated Secondary (A).

Permeability of Bedrock Deposits

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

Groundwater Vulnerability

Table 3.2: Groundwater Vulnerability Definitions, overleaf, presents Environment Agency groundwater vulnerability definitions:

Table 3.2: Groundwater Vulnerability Definitions

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.

The groundwater vulnerability in the vicinity of the site is classified as high.

Groundwater Abstraction Licences

There are no licensed ground water abstractions within 500 m of site. There is one licensed groundwater abstraction point between 500 and 2000 m of the site for general use relating to secondary category medium loss.

Potable Water Abstraction Licences

There are no potable abstractions within 500 m.

Source Protection Zones

There 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

An unnamed watercourse is recorded at 247 m to the west.

Surface Water Features

The unnamed watercourse is the only surface water features within 250 m of the site.

Water Framework Directive Surface Water Bodies and Catchments

There are no bodies of water reported under the directive within 250 m of the site.

Surface Water Abstraction Licences

There are no licensed surface water abstractions within 250 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 no environmental and habitat designations within 500 m of site.

Visual and Cultural Designations

There are four visual or cultural designations recorded within 250 m of the site. All four are designated as grade 2 listed buildings, the closest is 63 Cliffe End Road located 72 m to the west.

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 3**.

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 is one historical industrial land use on site recorded as a chemical works. With a further nine recorded historical industrial land uses within 250 m of the site. These potentially contaminative land uses presented below in Table 4.1: Summary of Historical Industrial Land Uses.

Table 4.1: Summary of Historical Industrial Land Uses.

Distance	Direction	Land Use	Dates Recorded
1 m	Southwest	Unspecified Mill	1938
3 m	Southwest	Unspecified Mill	1956
3 m	Southwest	Unspecified Commercial/Industrial	1966 - 1975
66 m	Southeast	Unspecified Mill	1948
118 m	North	Unspecified Ground Workings	1905
118 m	North	Unspecified Ground Workings	1948
232 m	South	Unspecified Pit	1890
241 m	Northwest	Unspecified Mill	1890
248 m	Northwest	Unspecified Mills	1905

A further 87 potentially contaminative land uses were recorded within 500 m of the site. These comprise similar uses to those on site and in addition include uses such as, a railway station, refuse heaps and gas works.

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

Historical Tanks

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

Historical Energy Features

There is one record of historical energy features within 250 m of the site.

There is one electric substation within influencing distance of the site which may be a source of Polychlorinated Biphenyls contamination (PCB's). Further details are given below.

- Substation located approximately 193 m to the south, first observed on the 1983 map.

This does not predate the 1981 ban on PCB's. Therefore, 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 seven records of historical garages within 500 m, the nearest is a garage approximately 256 m to the northwest and the furthest is shown 468 m to the southwest of the site.

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 usage within 250 m. This land use is an electrical sub-station, 205 m to the southwest.

Current or Recent Petrol Stations

There are no records of current or recent petrol stations within 500 m.

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 two records within 500 m of the site

- 416 m southwest, dated 22nd September 2005. Pollutant of inert materials and wastes.
- 473 m south, dated 19th October 2001. Pollutant of general biodegradable materials and wastes.

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

There are two records within 500 m of the site.

- 41 m northeast, site address: Royds Hall Playing fields, Reinwood Road, Quarmby.
- 296 m northwest, site address: Haughs Road Quarry, Haughs Road Quarmby.

Non-Landfill Waste Records

There are six historical non-landfill waste records within 500 m of the site.

- 437 m south, site address: N/A. Type of site: Scrapyard.
- 448 m south, site address: George Street, Milnsbridge. Type of site: Waste Transfer Station.
- 448 m south, site address: Bankhouse Lane / George Street, Milnsbridge. Type of site: Waste Transfer Station.
- 465 m site address: George Street, Milnsbridge. Type of site: Waste Transfer Station (Change of use).
- 484 m south, site address: Golcar Skip Hire LTD, George Street, Milnsbridge. Type of site: Waste Transfer Station.
- 486 m south, site address: Golcar Skip Hire LTD, George Street, Milnsbridge. Type of site: Waste Transfer Station (Conversion / New).

Waste exemptions are made available for certain specified activities considered to pose a low risk to the environment and allowable waste types and quantities are limited. There are two waste exemption records within 500 m of site, both being the use of treating waste, located 409 m to the southwest.

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 are no records within 250 m of the site.

BritPits Data (Surface and Underground Mineral Workings)

There are no records within 250 m of the site.

However, there are records of ceased surface mineral workings 330 m to the southeast, 401 m to the northwest and 440 m to the west.

Historical Mineral Planning Areas

There are no records within 250 m of the site.

Surface Ground Workings

There are three records within 250 m of the site. Two unspecified ground workings 118 m north of the site and an unspecified pit 232 m south.

Underground Workings

There are no records within 250 m of the site.

Coal Mining

There are no records within 250 m of the site.

Past Underground Mining

There are no records within 250 m of the site.

Probable Unrecorded Shallow Workings

There are no records within 250 m of the site.

Spine Roadways at Shallow Depth

There are no records within 250 m of the site.

Mine Entries

There are no records within 250 m of the site.

Outcrops

There are no records within 250 m of the site.

Non-Coal Mining

There is one record within 250 m for vein mineral commodity.

4.5 Radon and Background Soil Chemistry

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.

Radon

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.

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: 60-90 mg/kg.
- Nickel: 15-30 mg/kg.

These values are not considered to be elevated with respect to guideline values for residential.

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 the mid to late 19th Century to the present day, and Getmapping PLC aerial photography dating from the late 1990s 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 100m 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 4](#).

Table 5.1: Historical Mapping Review reports that the historical ordnance surveys maps indicated no discernible changes to the site area between the years 1948 and 2020. However, it is likely that improvements and subtle changes were made to the infrastructure within the site within this period.

Table 5.1: Historical Mapping Review

Date	Scale	On-Site	Off-site
1854	1:10,560	At this scale details cannot be made out; however, the site is located within an agricultural area with the road already in place.	Within in 500 m lies; Two (Firs and Nab End) Sandstone Quarries as well as three small to medium sized Woods and a large fishpond.
1888 - 1891	1:10,560	At this scale details cannot be made out; however, the site is located within an agricultural area with a structure as well as the road already in place.	Firs Quarry appears to have been infilled, six small to medium sized reservoirs or lakes now distinguishable. Railway station to the South.
1893	1:2,500	The site is surrounded on the north to southwest sides by dwellings as well as some larger buildings.	Predominately housing with accompanying road networks and small to large agricultural fields.
1905	1:10,560	There is no significant variation to the previous edition.	Nab End quarry no longer visible, Woodland shrinking and a developed Railway line to the South.
1907	1:2,500	Quarmby Chemical Works now on site.	There is no significant variation to the previous edition.
1918	1:2,500	Quarmby Chemical Works no longer on site.	There is no significant variation to the previous edition.

Date	Scale	On-Site	Off-site
1930 - 1931	1:10,560	There is no significant variation to the previous edition.	Moderate to vast housing developments in the area, Three unspecified Mills (Cliff End, Quarmby Clough and Crest). One small woodland remaining in the area.
1932	1:2,500	Wool (Crest Mill) Mill on site, further development of more properties in the vicinity.	Agricultural land shrinking.
1938	1:10,560	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1948	1:10,560	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1956	1:10,560	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1961	1:2,500	Developed housing on all sides of site. Two small structures in the middle of the site.	Largely developed into housing with diminished agricultural land becoming a large playing field to the east.
1962	1:2,500	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1961 - 1962	1:2,500	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1966	1:10,000	There is no significant variation to the previous edition.	Local area is predominantly developed into housing.
1975	1:10,000	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1975	1:1,250	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1976	1:1,250	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1978 - 1983	1:1,250	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1983 - 1984	1:1,250	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
1985	1:10,000	There is no significant variation to the previous edition.	Quarmby Clough Mill no longer existing.
1990 - 1993	1:1,250	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
2001	1:10,000	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
2003	1:1,250	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.
2010	1:10,000	There is no significant variation to the previous edition..	Cliff End Mill converted into a business centre.

Date	Scale	On-Site	Off-site
2022	1:10,000	There is no significant variation to the previous edition.	There is no significant variation to the previous edition.

5.2 Aerial Photography

Aerial Photo

The 1999 aerial photo is generally unclear; however, the site appears to be occupied by the existing residential properties. The surrounding area appears developed with residential and a playing field.

The 2000 aerial photo is generally unclear; however, the site appears to be occupied by the existing residential properties. The surrounding area appears developed with residential and a playing field.

The 2012 aerial photo appears to show the site to be occupied by the existing residential properties. The surrounding area appears developed with residential and a playing field.

Recent Aerial Photograph:

Recent aerial photography shows the site is still residential housing. The surrounding area is within an urban setting and is occupied by mixed residential and associated highway network.

The aerial photographs are included in the Groundsure Enviro + Geo Insight Report and are available for review within **Appendix 4**.

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

The following possible on-site sources have been identified from the historical study:

- Chemical Works.
- Unspecified Mills.
- Unspecified Commercial/Industrial activities.

The following possible on-site sources have been identified from the Enviro + Geo Insight data:

- Chemical Works.
- Unspecified Mills.
- Unspecified Commercial/Industrial activities

Off Site Sources

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

- Chemical Works.
- Unspecified Mills.
- Unspecified Commercial/Industrial.

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

Information provided by Groundsure indicates that there are no areas within 250 m of the site where the potential for infilling is possible. These include former ponds, quarries, reservoirs or other features that may have been infilled within unknown materials.

Information provided by Groundsure indicates that there are two areas within 250 m of the site where underground workings have taken place.

The historical mapping indicates that there are no areas within 250 m of the site where the potential for infilling is possible.

The following contaminants are potentially associated with the on-site sources:

- Heavy Metals and Metalloids
- Inorganics
- PAH
- TPH
- VOCs and SVOCs
- Asbestos

The following contaminants are potentially associated with the off-site sources.

- Heavy Metals and Metalloids
- Inorganics
- PAH
- TPH
- VOCs and SVOCs
- Asbestos
- 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: Pathways, overleaf.

Table 6.1: Pathways

Pathway	Medium	Properties
Direct Contact	Dust, solid and liquid phase	There may be direct contact with potentially impacted soil and Made Ground across the site. There is a possibility of dust fumes being produced during earthworks in the construction phase. Dermal contact and ingestion of potentially contaminated soils during construction or operational phase of the site.
Leaching through Made Ground	Unsaturated flow	Potential for leaching and migration of potential contaminants along preferential flow paths in the ground.
Foundations and Underground Infrastructure and Obstructions	Preferential flow	Contaminants will flow the path of least resistance which can be gaps around foundations, services, and floor construction
Migration of Ground Gas and Radon	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: Receptors, below:

Table 6.2: Receptors

Category	Receptor	Properties
Humans	End users (such as residents and visitors)	Potential contact with contaminated soils is likely limited given the commercial end use planned. Potential contact with ground gas within enclosed buildings
	Construction workers	Reworking of contaminant impacted materials in underlying soil during construction works can expose workers to contamination.
Property	Materials and site structures	Foundations and site services may be damaged by potentially aggressive compounds present in soils.
Controlled Waters	Underlying superficial / bedrock Aquifer and surface water	The site is recorded as having a Secondary (A) Aquifer within the superficial deposits and a Principal Aquifer within the bedrock underlying the site.
Plant (species and uptake) and Wildlife	Various	Attributes will be influenced by factors such as relative quality, scale, rarity and substitutability; however, it is understood that the site is proposed to be hard surfaced.

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 5**.

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 'Commercial'. 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 potentially active	Likely	Medium	Moderate ●	A moderate risk rating has been assessed due to the historical chemical works use and history of potentially contaminative land uses on site. Contact is likely limited between future occupiers/visitors and contaminants due to the Residential end use.
		Construction Workers	Considered potentially active	Likely	Medium	Moderate ●	Construction workers are likely to come into direct contact with soils during groundworks. Safe working practices should be implemented, and appropriate personal protective equipment (PPE) should be used to mitigate any potential risk from contact with soils and shallow/perched groundwater.
	Leaching through soils and migration via groundwater or soil pore moisture	Controlled Waters	Considered potentially active	Likely	Mild	Moderate/Low ●	A moderate risk rating has been assessed due to the presence of potentially contaminative sources on site and the presence of a high vulnerability Secondary (A) Aquifer within the bedrock.
	Permeation of water pipes	Construction materials, future end users and site visitors	Considered potentially active	Low Likelihood	Medium	Moderate/Low ●	Hydrocarbons, especially aromatics are known to permeate plastic pipes. Provision of water supply pipes and connectors formed from proprietary "barrier pipe" materials (e.g., polyethylene-aluminium-polyethylene) may be required by the water supply company.
	Uptake	Plant and Wildlife	Considered potentially active	Low Likelihood	Medium	Moderate/Low ●	A moderate / low risk rating has been assessed due to the limited history of potentially contaminative land uses on site. Contact is likely limited between future occupiers/visitors and contaminants due to the Residential end use.

Contaminant Source	Pathways	Receptor	Pollutant Linkage	Classification of Probability	Classification of Consequence	Level of Risk	Justification
On Site: Asbestos at/near ground surface in Made Ground soils.	Inhalation of fibres in airborne dust	Future end users and site visitors	Considered potentially active	Low Likelihood	Medium	Moderate/Low ●	A moderate risk rating has been assessed due to the previous Chemical Works on the site.
		Construction Workers	Considered potentially active	Low Likelihood	Medium	Moderate ●	A moderate risk rating has been assessed due to the historical Chemical Works on the site.
On Site: Ground Gases (CH ₄ , CO ₂ , CO, H ₂ S) from on-site Made Ground.	Gas migration and build up within buildings (explosion/asphyxiation risk)	Future end users and building structures.	Considered potentially active	Low Likelihood	Low	Moderate/Low ●	A moderate/low risk rating has been assessed given the made ground potential on site as well as historical landfill sites being within 250 m of the site. Current guidance indicates that Made Ground is generally classified as low risk in terms of potential for gas generation. However, the previous land uses on site and presence of tanks may give potential for ground gases.
Off Site: Historical land uses and activities, Made Ground/infilled material possibly containing elevated metals, other inorganics, TPH, PAH, PCBs, phenols, VOC and SVOCs.	Leaching through soils and migration via groundwater or soil pore moisture	Future end users and site visitors	Considered potentially active	Likely	Medium	Moderate ●	Given the variable permeability of the underlying geology and hydrogeology, there is a moderate risk for the leaching and migration of contaminants. This combined with the presence of potentially contaminative historic land uses and tanks within 500m of the site.
	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Considered potentially active	Likely	Medium	Moderate ●	Given the variable permeability of the underlying geology and hydrogeology, there is a moderate risk for the leaching and migration of contaminants. This combined with the presence of potentially contaminative historic land uses and tanks within 500m of the site.



Contaminant Source	Pathways	Receptor	Pollutant Linkage	Classification of Probability	Classification of Consequence	Level of Risk	Justification
Off Site: Ground Gases (CH ₄ , CO ₂ , CO, H ₂ S) 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	Medium	Moderate/ Low ●	Due to a historical landfill site being within 250 m a potential for risk of ground gases and possible gravel pits that may have been infilled, hence a level of risk deemed moderate/low.

9. Recommendations

9.1 Proposed Site Investigation

Based on the information obtained for the formation of this report it is recommended that a suitable phase II environmental site investigation is carried out at the site to establish the presence of any contamination.

The intrusive investigation may reveal on-site sources of contamination that were not established by the Phase I Desk Study, thus requiring modification of the conceptual site model.

The proposed scope of investigation is outlined below.

Scope of Proposed Investigation

Testing Regime

The testing regime has been devised in accordance with BS10175:2017 Guidelines for the Code of Practice for Contaminated Land and CLR Report No. 4 Sampling Strategies. The objective at this stage of the report is to attempt to identify the extent of any possible contamination that may exist at the site by using intrusive soil sampling and testing techniques.

Sampling Strategy

A service search should be completed prior to any subsequent investigation to determine the service locations by lifting any manhole/drain covers; therefore, locations may be subject to change depending upon these results.

As the development is completed and with limited landscaped areas available to test for pollutant linkages. Two, hand excavated trial holes should be advanced to 1.20 mbgl, refusal or where ground water is encountered, within the garden areas to obtain suitable soil samples for appropriate soil contamination testing to highlight the pollutant linkage risk.

It is also recommended that two gas spikes should be installed in these areas to be monitored over a period of time to establish any ground gas and groundwater levels in accordance with CIRIA C665.

All positions should be logged, and samples removed in accordance with current protocol. In addition, groundwater conditions, if encountered, shall be logged and visual/olfactory observations noted.

We would recommend that the test locations be based on the findings contained with this report, to enable a combination of targeted testing along with a broad coverage of the site.

Laboratory Analysis

An appropriate and consistent analytical suite of contaminants should be applied to any soil samples retrieved from the site.

Based on the findings contained within this report, we would recommend that a comprehensive range of testing should be undertaken to comprise of heavy metals, metalloids, inorganics, speciated Total Petroleum Hydrocarbons (TPH CWG Aromatic/aliphatic split) and speciated Polycyclic Aromatic Hydrocarbons (PAH) including the more carcinogenic benzo(a)pyrene (BaP) and naphthalene, soil organic matter (SOM) content, VOCs, SVOCs, pH and sulphates and Asbestos.

In addition, selected samples retrieved from the Made Ground, if encountered, will also be submitted for a screen to determine the presence, or otherwise, of Asbestos.

It should be noted that not all samples retrieved from the proposed investigative works will be laboratory analysed and a UKAS and MCERTS accredited laboratory testing organisation should carry out all analysis.

Guidance

The results from the proposed SI shall be compared against standards, such as the revised LQM/CIEH S4UL criteria¹ where available.

Groundwater analysis, if encountered, would be compared against the Drinking Water Standards (DWS) or Environmental Quality Standards (EQS) for the United Kingdom (UK).

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.

9.4 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.

9.5 Invasive Plant Survey

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

9.6 Asbestos Survey

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

¹ Nathanail et al. (2015) The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, 2015. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3495

10. Limitations and Uncertainties

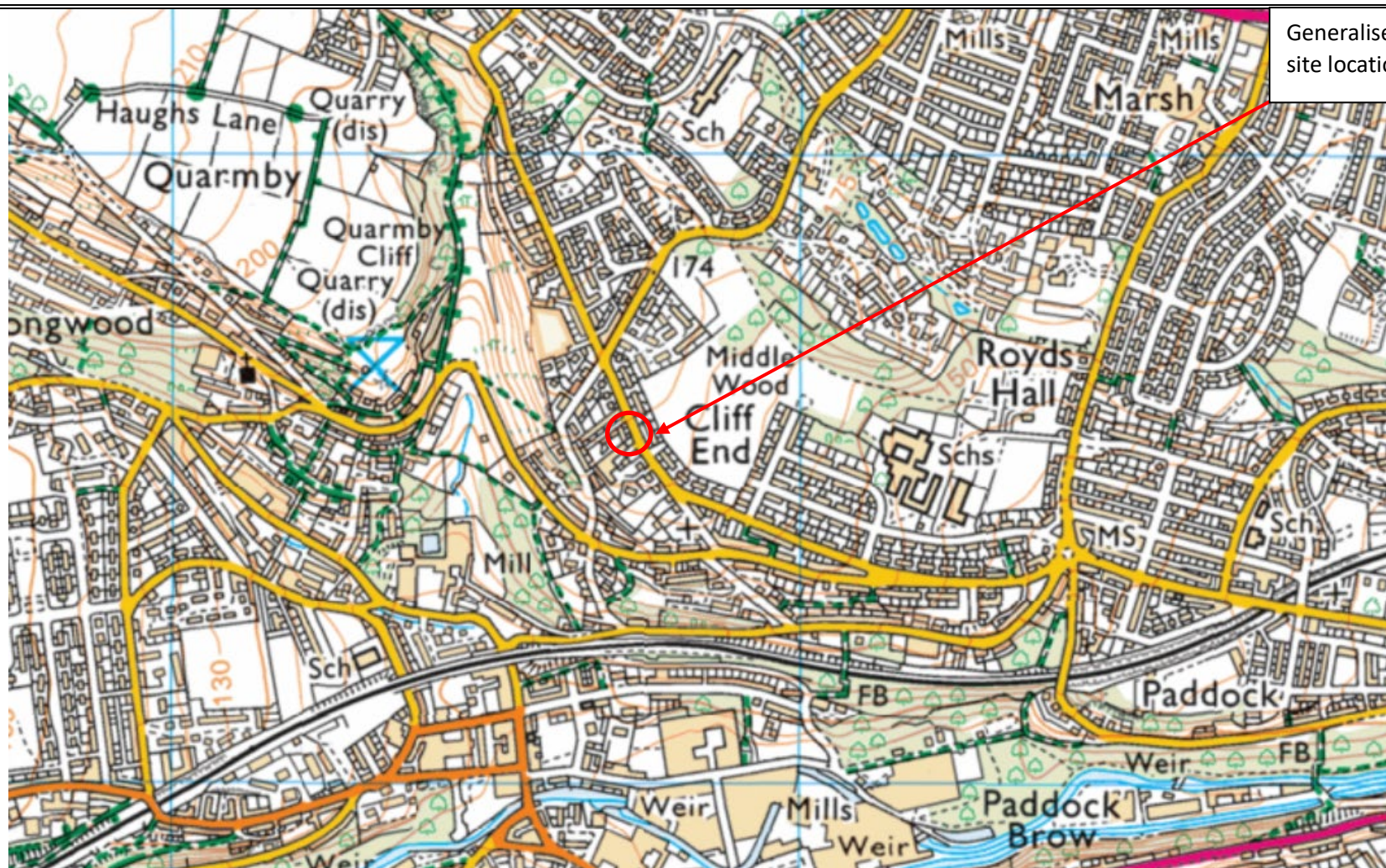
This report has been prepared by GES with all reasonable skill, care and diligence. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources, together with a site walkover inspection of the site.

The opinions given in this report have been dictated by the finite data on which they are 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 report is an environmental Phase I 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 & PLANS



Generalised
site location



GeoEnviro Solutions Ltd
Unit 7 Springvale Works
Brighouse
West Yorkshire
HD6 2RA

Tel: 01484 986010
Email: info@geoenvirosolutions.com
Web: www.geoenvirosolutions.com

PROJECT NAME

Quarmby Road, Huddersfield

PROJECT NUMBER

2112-21

TITLE

Site location Plan

DRAWING NO.

1678-21/01

SCALE

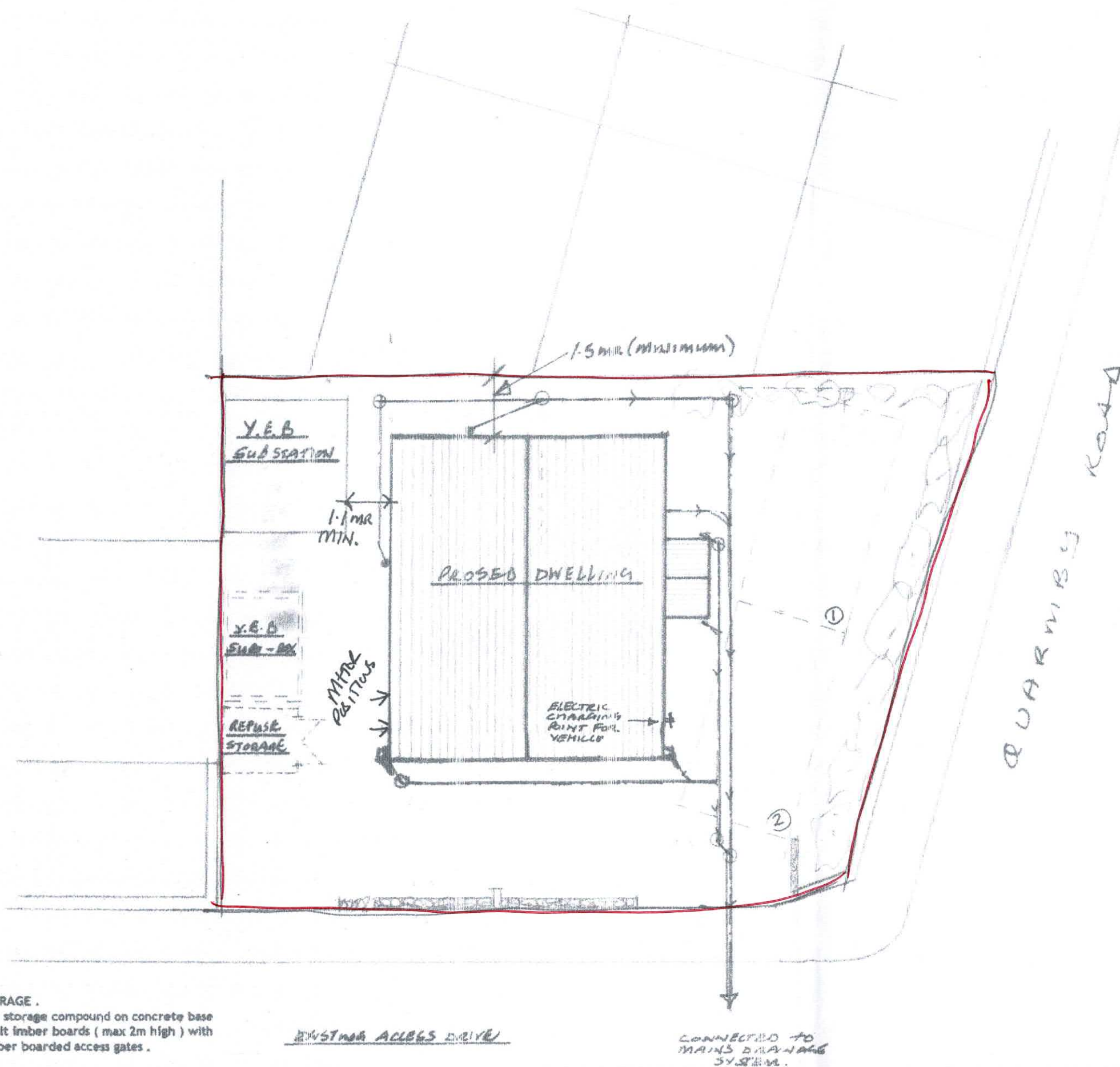
N.T.S

DATE

JANUARY 2022

DRAWN BY

JF



Form parking areas as shown with sandstone chippings .
Drives access to be in tarmac finish .
Paths to be formed in art . stone flagging and gardens
to be top soiled with grass / flower beds as clients
requirements .

GROUND WORKS .
Remove existing garages , concrete bases , top soil ,
vegetation and excavate to reduced level for new
house and drive .

Full structural details of retaining walls and foundations
to be submitted and agreed on site with building inspector
after/during excavation for new houses.

ACCESS / DROP CROSSING.
Utilise existing drop crossing to form access for new parking area.

PROPOSED DETACHED DWELLING .

AT

LAND OFF QUARMBY ROAD .
QUARMBY .
HUDDERSFIELD .

REV 28/8/2019

PROPOSED SITE PLAN 1:100 .

EXISTING ACCESS DRIVE

CONNECTED TO
MAINS DRAINAGE
SYSTEM .

REFUSE STORAGE .
Form refuse storage compound on concrete base
with vertical timber boards (max 2m high) with
vertical timber boarded access gates .

A green rounded rectangle with a thin black border, centered on the page. It contains the text "APPENDIX 2" and "SITE PHOTOGRAPHS" in black, uppercase letters.

APPENDIX 2
SITE PHOTOGRAPHS



A.



B.



C.



D.



A.



B.



C.



D.



APPENDIX 3

GROUNDSURE ENVIRO & GEO
INSIGHT REPORT

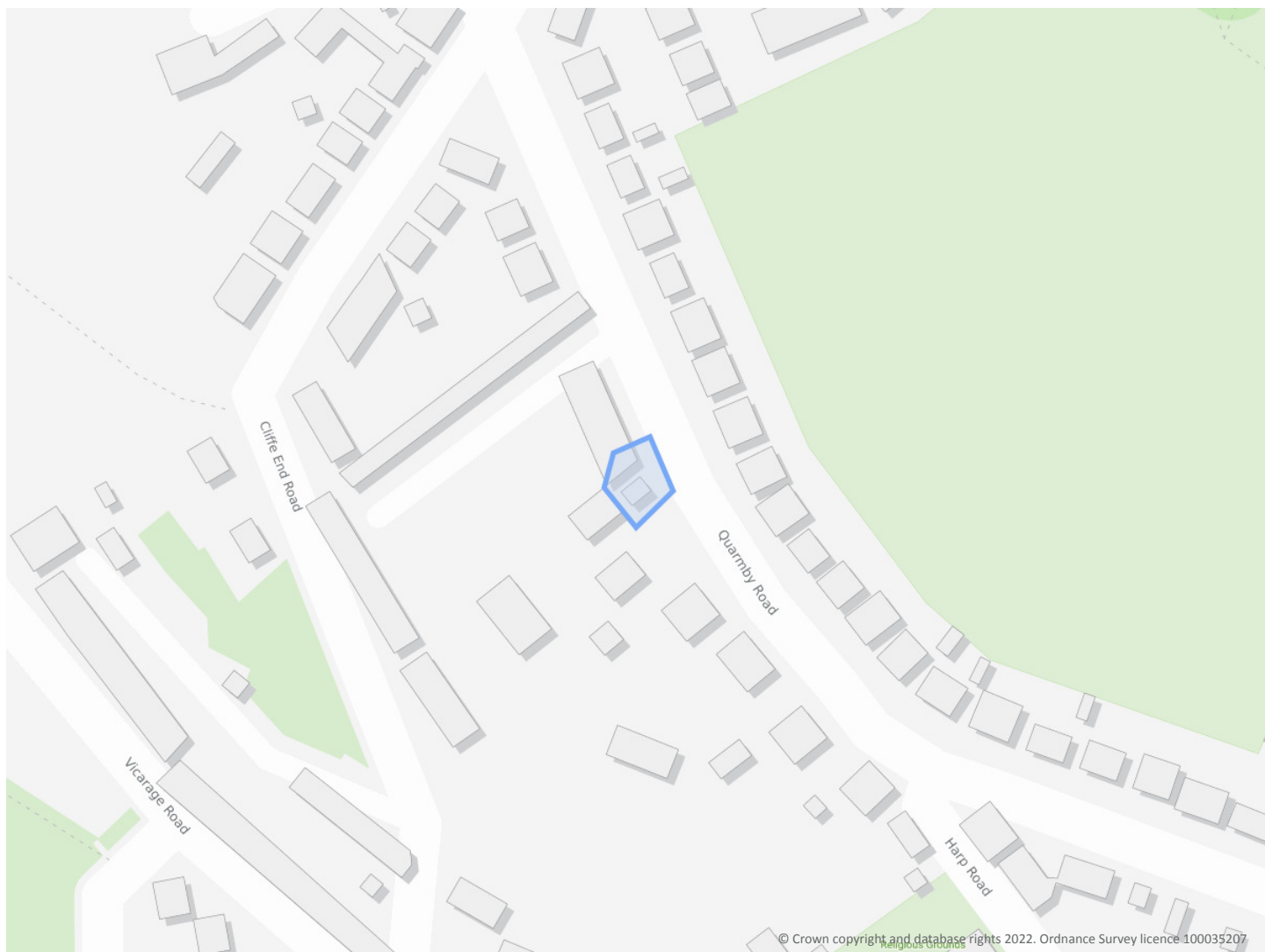
71, QUARMBY ROAD, QUARMBY, HUDDERSFIELD, HD3 4EA

Order Details

Date: 19/01/2022
Your ref: 2112-21
Our Ref: GS-8457953
Client: GeoEnviro Solutions Ltd

Site Details

Location: 411733 416544
Area: 0.03 ha
Authority: [Kirklees Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.12

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
<u>13</u>	<u>1.1</u>	<u>Historical industrial land uses</u>	1	3	6	87	-
<u>17</u>	<u>1.2</u>	<u>Historical tanks</u>	0	0	0	34	-
<u>19</u>	<u>1.3</u>	<u>Historical energy features</u>	0	0	1	13	-
19	1.4	Historical petrol stations	0	0	0	0	-
<u>20</u>	<u>1.5</u>	<u>Historical garages</u>	0	0	0	7	-
20	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
<u>21</u>	<u>2.1</u>	<u>Historical industrial land uses</u>	1	4	6	118	-
<u>26</u>	<u>2.2</u>	<u>Historical tanks</u>	0	0	0	44	-
<u>28</u>	<u>2.3</u>	<u>Historical energy features</u>	0	0	2	20	-
29	2.4	Historical petrol stations	0	0	0	0	-
<u>29</u>	<u>2.5</u>	<u>Historical garages</u>	0	0	0	9	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
31	3.1	Active or recent landfill	0	0	0	0	-
31	3.2	Historical landfill (BGS records)	0	0	0	0	-
32	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
<u>32</u>	<u>3.4</u>	<u>Historical landfill (EA/NRW records)</u>	0	1	0	1	-
<u>32</u>	<u>3.5</u>	<u>Historical waste sites</u>	0	0	0	6	-
<u>34</u>	<u>3.6</u>	<u>Licensed waste sites</u>	0	0	0	3	-
<u>35</u>	<u>3.7</u>	<u>Waste exemptions</u>	0	0	0	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
<u>37</u>	<u>4.1</u>	<u>Recent industrial land uses</u>	0	0	1	-	-
38	4.2	Current or recent petrol stations	0	0	0	0	-
38	4.3	Electricity cables	0	0	0	0	-
38	4.4	Gas pipelines	0	0	0	0	-
38	4.5	Sites determined as Contaminated Land	0	0	0	0	-



38	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
39	4.7	Regulated explosive sites	0	0	0	0	-
39	4.8	Hazardous substance storage/usage	0	0	0	0	-
39	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
39	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
39	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
40	4.12	Radioactive Substance Authorisations	0	0	0	0	-
40	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	0	6	-
41	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
41	4.15	Pollutant release to public sewer	0	0	0	0	-
41	4.16	List 1 Dangerous Substances	0	0	0	0	-
42	4.17	List 2 Dangerous Substances	0	0	0	0	-
42	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	0	2	-
42	4.19	Pollution inventory substances	0	0	0	0	-
43	4.20	Pollution inventory waste transfers	0	0	0	0	-
43	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
44	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
45	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
46	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
47	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
47	5.5	Groundwater vulnerability- local information	None (within 0m)				
48	5.6	<u>Groundwater abstractions</u>	0	0	0	0	16
52	5.7	<u>Surface water abstractions</u>	0	0	0	1	16
57	5.8	<u>Potable abstractions</u>	0	0	0	0	1
57	5.9	Source Protection Zones	0	0	0	0	-
57	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
58	6.1	<u>Water Network (OS MasterMap)</u>	0	0	1	-	-



59	<u>6.2</u>	<u>Surface water features</u>	0	0	1	-	-
59	<u>6.3</u>	<u>WFD Surface water body catchments</u>	1	-	-	-	-
59	<u>6.4</u>	<u>WFD Surface water bodies</u>	0	0	0	-	-
60	<u>6.5</u>	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
61	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
61	7.2	Historical Flood Events	0	0	0	-	-
61	7.3	Flood Defences	0	0	0	-	-
62	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
62	7.5	Flood Storage Areas	0	0	0	-	-
63	7.6	Flood Zone 2	None (within 50m)				
63	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
64	8.1	Surface water flooding	Negligible (within 50m)				
Page	Section	Groundwater flooding					
65	<u>9.1</u>	<u>Groundwater flooding</u>	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
66	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
67	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
67	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
67	10.4	Special Protection Areas (SPA)	0	0	0	0	0
67	10.5	National Nature Reserves (NNR)	0	0	0	0	0
68	<u>10.6</u>	<u>Local Nature Reserves (LNR)</u>	0	0	0	0	1
68	10.7	Designated Ancient Woodland	0	0	0	0	0
68	10.8	Biosphere Reserves	0	0	0	0	0
68	10.9	Forest Parks	0	0	0	0	0
69	10.10	Marine Conservation Zones	0	0	0	0	0
69	<u>10.11</u>	<u>Green Belt</u>	0	0	0	0	1
69	10.12	Proposed Ramsar sites	0	0	0	0	0



69	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
70	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
70	10.15	Nitrate Sensitive Areas	0	0	0	0	0
70	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
71	<u>10.17</u>	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
72	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
73	11.1	World Heritage Sites	0	0	0	-	-
74	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
74	11.3	National Parks	0	0	0	-	-
74	<u>11.4</u>	<u>Listed Buildings</u>	0	0	4	-	-
75	11.5	Conservation Areas	0	0	0	-	-
75	11.6	Scheduled Ancient Monuments	0	0	0	-	-
75	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
76	<u>12.1</u>	<u>Agricultural Land Classification</u>	Urban (within 250m)				
77	<u>12.2</u>	<u>Open Access Land</u>	0	0	1	-	-
77	12.3	Tree Felling Licences	0	0	0	-	-
77	12.4	Environmental Stewardship Schemes	0	0	0	-	-
77	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
78	<u>13.1</u>	<u>Priority Habitat Inventory</u>	0	1	0	-	-
79	13.2	Habitat Networks	0	0	0	-	-
79	<u>13.3</u>	<u>Open Mosaic Habitat</u>	0	0	1	-	-
79	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
80	<u>14.1</u>	<u>10k Availability</u>	Identified (within 500m)				
81	<u>14.2</u>	<u>Artificial and made ground (10k)</u>	0	0	1	13	-
83	<u>14.3</u>	<u>Superficial geology (10k)</u>	0	0	0	1	-

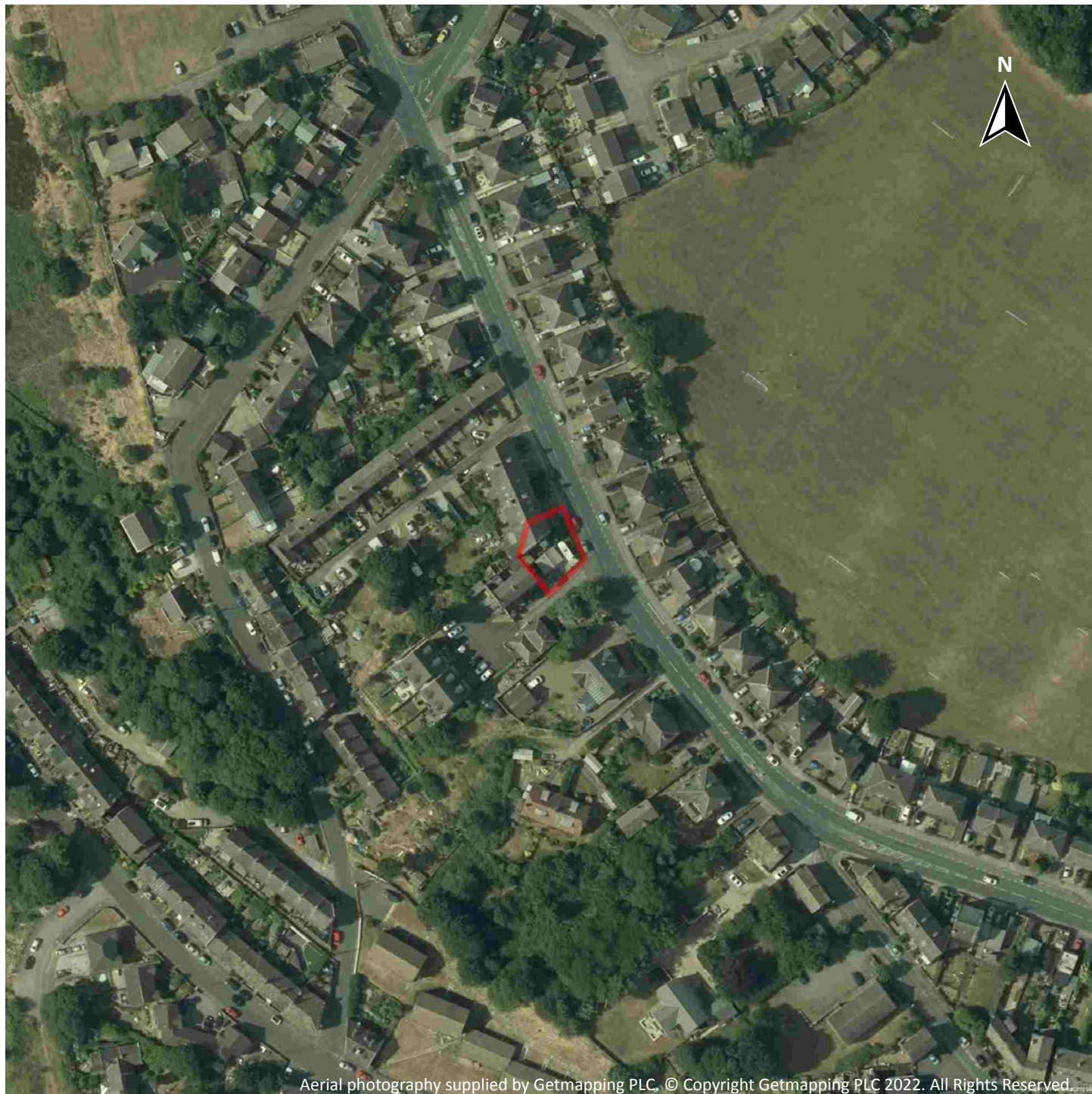


84	14.4	Landslip (10k)	0	0	0	0	-
85	14.5	<u>Bedrock geology (10k)</u>	1	0	3	3	-
86	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	0	1	1	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
87	15.1	<u>50k Availability</u>	Identified (within 500m)				
88	15.2	<u>Artificial and made ground (50k)</u>	0	0	0	3	-
89	15.3	Artificial ground permeability (50k)	0	0	-	-	-
90	15.4	<u>Superficial geology (50k)</u>	0	0	0	1	-
91	15.5	Superficial permeability (50k)	None (within 50m)				
91	15.6	Landslip (50k)	0	0	0	0	-
91	15.7	Landslip permeability (50k)	None (within 50m)				
92	15.8	<u>Bedrock geology (50k)</u>	1	0	3	3	-
93	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
93	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	0	1	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
94	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
95	17.1	<u>Shrink swell clays</u>	Negligible (within 50m)				
96	17.2	<u>Running sands</u>	Negligible (within 50m)				
97	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
98	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
99	17.5	<u>Landslides</u>	Very low (within 50m)				
100	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
102	18.1	Natural cavities	0	0	0	0	-
103	18.2	<u>BritPits</u>	0	0	0	3	-
103	18.3	<u>Surface ground workings</u>	0	0	3	-	-
104	18.4	Underground workings	0	0	0	0	0
104	18.5	Historical Mineral Planning Areas	0	0	0	0	-



104	18.6	<u>Non-coal mining</u>	1	0	0	0	0
105	18.7	Mining cavities	0	0	0	0	0
105	18.8	JPB mining areas	None (within 0m)				
105	18.9	Coal mining	None (within 0m)				
105	18.10	Brine areas	None (within 0m)				
105	18.11	Gypsum areas	None (within 0m)				
106	18.12	Tin mining	None (within 0m)				
106	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
107	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
108	20.1	<u>BGS Estimated Background Soil Chemistry</u>	1	1	-	-	-
108	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
108	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
109	21.1	Underground railways (London)	0	0	0	-	-
109	21.2	Underground railways (Non-London)	0	0	0	-	-
109	21.3	Railway tunnels	0	0	0	-	-
109	21.4	Historical railway and tunnel features	0	0	0	-	-
109	21.5	Royal Mail tunnels	0	0	0	-	-
110	21.6	Historical railways	0	0	0	-	-
110	21.7	Railways	0	0	0	-	-
110	21.8	Crossrail 1	0	0	0	0	-
110	21.9	Crossrail 2	0	0	0	0	-
110	21.10	HS2	0	0	0	0	-

Recent aerial photograph



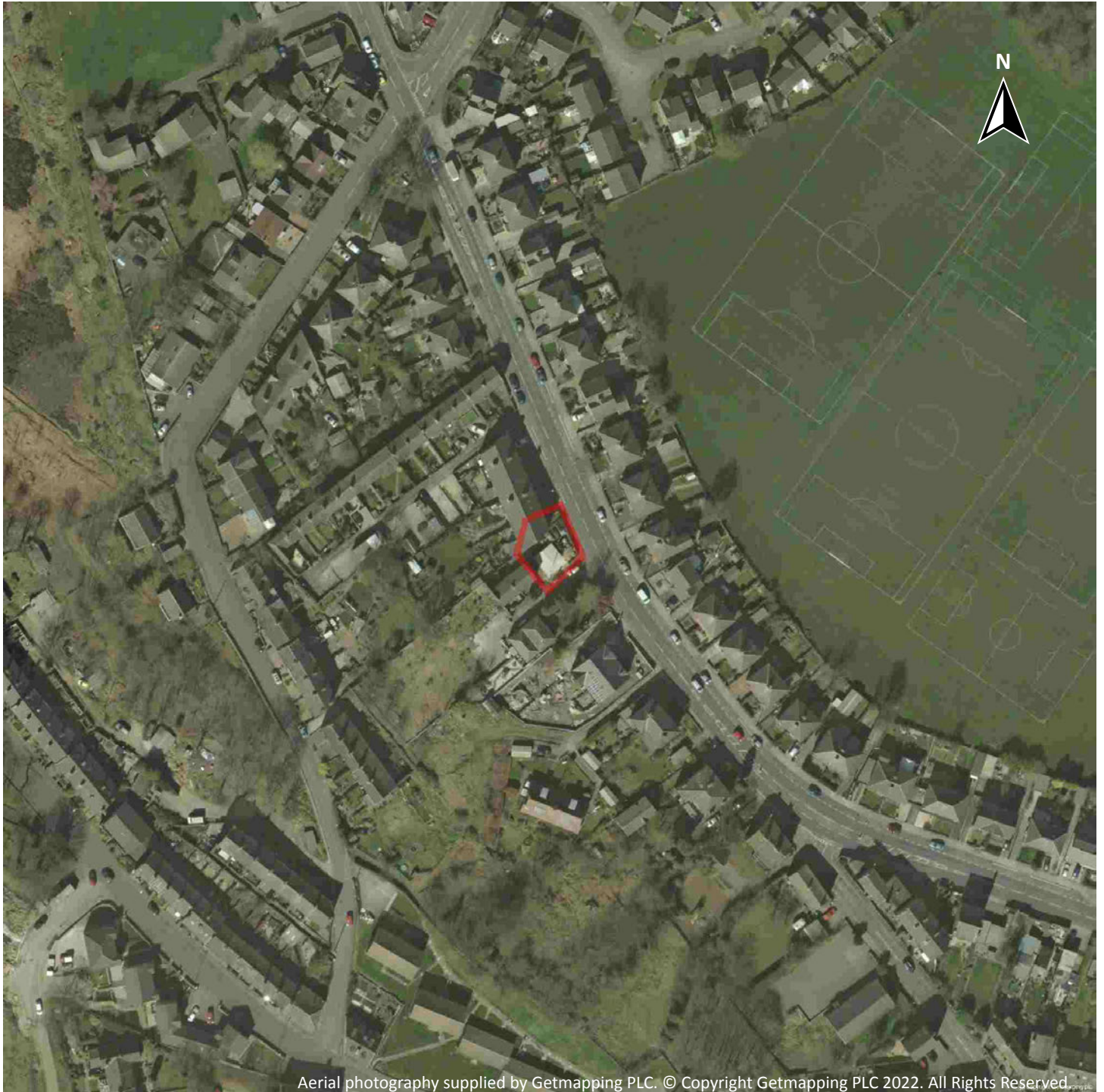
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Capture Date: 01/07/2018

Site Area: 0.03ha



Recent site history - 2012 aerial photograph



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Capture Date: 26/03/2012

Site Area: 0.03ha



Recent site history - 2000 aerial photograph



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Capture Date: 25/08/2000

Site Area: 0.03ha



Recent site history - 1999 aerial photograph



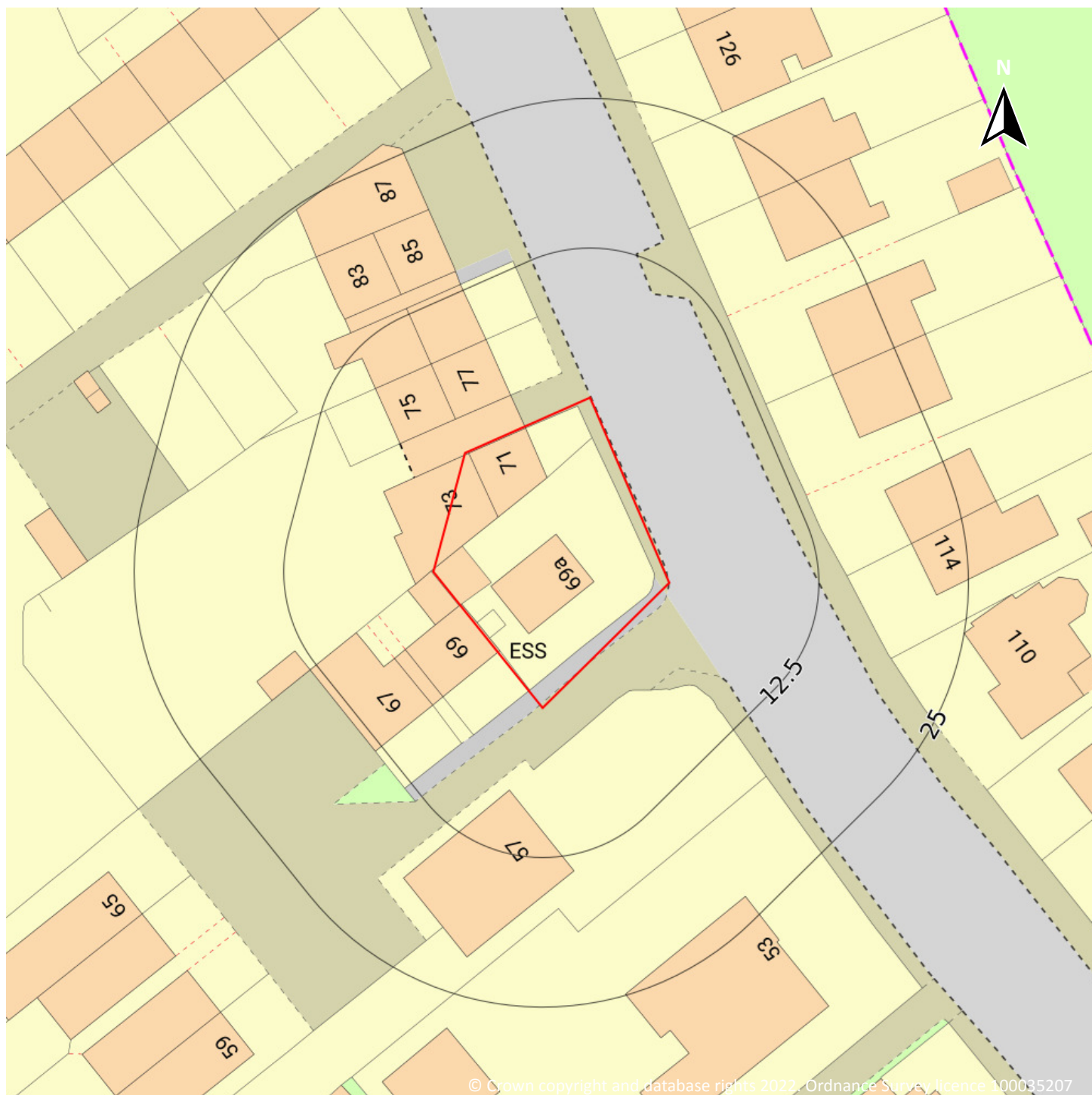
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2022. All Rights Reserved.

Capture Date: 05/09/1999

Site Area: 0.03ha



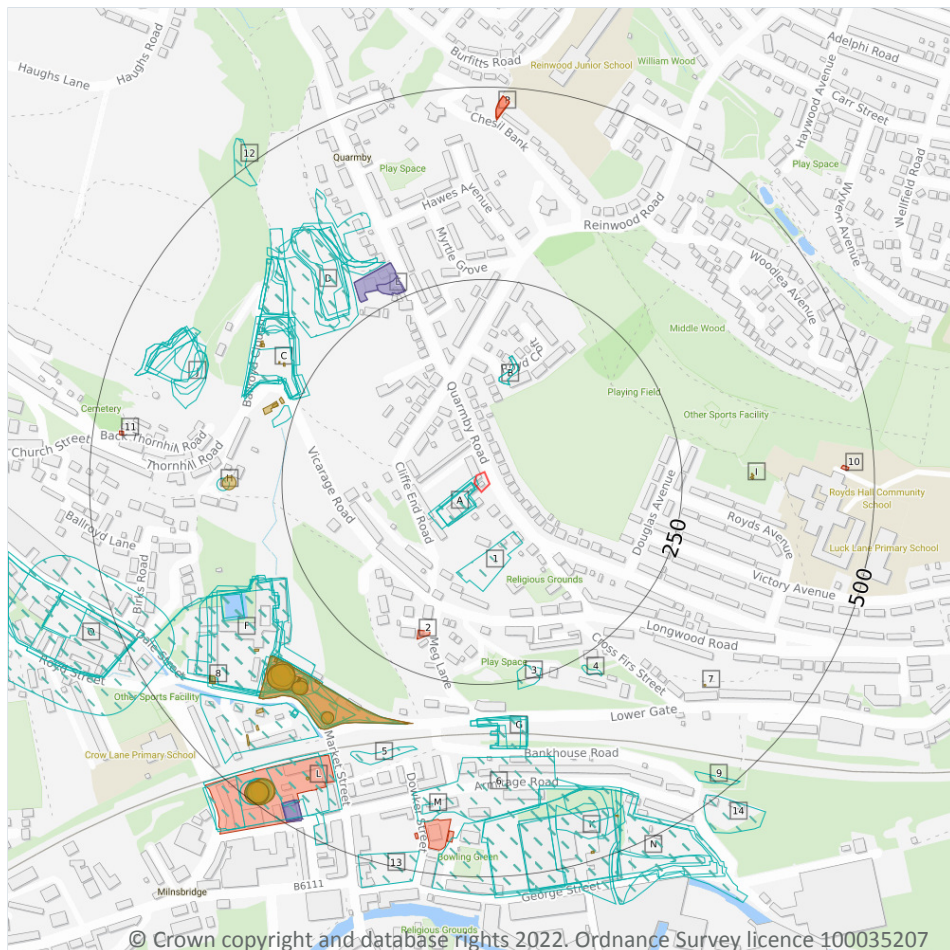
OS MasterMap site plan



Site Area: 0.03ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

97

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

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

ID	Location	Land use	Dates present	Group ID
A	On site	Chemical Works	1905	1443313



ID	Location	Land use	Dates present	Group ID
A	1m SW	Unspecified Mill	1938	1498486
A	3m SW	Unspecified Mill	1956	1510311
A	3m SW	Unspecified Commercial/Industrial	1966 - 1975	1535500
1	66m SE	Unspecified Mill	1948	1421190
B	118m N	Unspecified Ground Workings	1905	1466102
B	118m N	Unspecified Ground Workings	1948	1494844
3	232m S	Unspecified Pit	1890	1451759
C	241m NW	Unspecified Mill	1890	1476154
C	248m NW	Unspecified Mills	1905	1552136
C	250m NW	Unspecified Mill	1948	1531696
C	252m W	Unspecified Ground Workings	1966 - 1985	1498916
C	253m NW	Unspecified Mills	1938	1536169
C	255m NW	Unspecified Mill	1966 - 1975	1469331
C	255m NW	Unspecified Mills	1956	1517511
D	255m NW	Unspecified Ground Workings	1966 - 1985	1461791
4	261m SE	Unspecified Ground Workings	1905	1412129
D	266m NW	Refuse Heap	1905	1436528
D	267m NW	Unspecified Ground Workings	1956	1472792
D	269m NW	Unspecified Ground Workings	1948	1526979
D	272m NW	Unspecified Ground Workings	1938	1462627
F	273m SW	Unspecified Mill	1975 - 1985	1489919
F	275m SW	Unspecified Mill	1966	1514021
F	291m SW	Unspecified Mills	1938	1475711
F	292m SW	Unspecified Mills	1956	1467730
G	293m S	Railway Station	1956 - 1966	1467211
G	294m S	Railway Station	1938 - 1948	1529392
F	294m SW	Unspecified Mills	1948	1529420
F	295m SW	Unspecified Mills	1890 - 1905	1529533



ID	Location	Land use	Dates present	Group ID
G	296m S	Railway Station	1905	1492882
G	297m S	Railway Station	1890	1542105
C	298m NW	Unspecified Ground Workings	1948	1412110
D	299m NW	Unspecified Quarry	1890	1426669
C	304m NW	Unspecified Pit	1956 - 1966	1478991
C	306m NW	Unspecified Pit	1975	1460415
D	306m NW	Unspecified Ground Workings	1905	1481219
D	306m NW	Unspecified Ground Workings	1948	1487854
F	318m S	Gas Works	1890 - 1905	1547442
H	318m W	Unspecified Tank	1966 - 1985	1478477
C	321m NW	Mill Ponds	1956	1462643
C	323m NW	Mill Ponds	1938 - 1948	1501019
F	325m SW	Unspecified Works	1975	1438140
C	327m NW	Mill Ponds	1905	1501340
F	329m SW	Unspecified Tanks	1938 - 1948	1552182
F	331m SW	Unspecified Tank	1956	1472346
F	334m SW	Mill Pond	1938	1485203
F	337m SW	Mill Pond	1956	1497334
F	337m SW	Unspecified Tank	1956 - 1975	1519976
F	339m SW	Unspecified Tank	1890	1497302
F	340m SW	Gasometer	1890 - 1905	1466821
F	342m SW	Gasometer	1905	1554342
5	342m S	Unspecified Ground Workings	1890	1412134
6	345m S	Nursery	1890	1439905
F	348m SW	Unspecified Tank	1890	1433308
F	370m SW	Unspecified Works	1966	1438141
F	372m SW	Unspecified Tank	1948 - 1956	1518162
F	373m SW	Unspecified Tank	1938	1535141



ID	Location	Land use	Dates present	Group ID
J	373m W	Refuse Heap	1905	1480540
J	375m W	Refuse Heap	1948	1531981
J	380m W	Unspecified Disused Quarry	1956	1463248
J	384m W	Unspecified Heap	1966 - 1985	1543693
J	385m W	Unspecified Disused Quarry	1938	1488411
K	389m S	Chemical Works	1938	1492933
L	392m SW	Unspecified Mills	1985	1419106
K	393m S	Unspecified Mills	1948	1538366
L	400m SW	Gas Works	1905	1414810
J	404m NW	Unspecified Disused Quarry	1975 - 1985	1531495
K	405m S	Chemical Works	1905	1483772
K	407m S	Unspecified Ground Workings	1905	1412135
M	407m S	Police Station	1975 - 1985	1497277
J	408m NW	Unspecified Quarry	1890	1426668
K	412m S	Timber Yard	1938	1410423
J	418m NW	Unspecified Disused Quarry	1948	1465937
J	418m NW	Unspecified Disused Quarry	1905	1468807
K	418m S	Refuse Heap	1966	1436529
N	424m SE	Unspecified Mills	1905	1538495
N	425m SE	Unspecified Mills	1938	1526074
K	430m S	Unspecified Mill	1985	1421189
K	433m S	Unspecified Works	1966 - 1975	1516603
O	435m SW	Unspecified Mills	1956	1463582
9	457m SE	Unspecified Ground Workings	1890	1412136
L	468m SW	Unspecified Tank	1956 - 1966	1488278
L	469m SW	Unspecified Tank	1890	1459152
L	469m SW	Unspecified Tank	1938	1458793
O	471m SW	Woollen Mills	1890	1411708



ID	Location	Land use	Dates present	Group ID
12	473m NW	Unspecified Quarry	1975 - 1985	1520997
13	474m S	Unspecified Works	1975 - 1985	1494201
L	475m SW	Gasometer	1905	1420657
L	475m SW	Unspecified Tank	1948	1501307
O	482m SW	Unspecified Mills	1938	1554151
O	485m SW	Unspecified Commercial/Industrial	1966	1410454
O	485m SW	Unspecified Mills	1948 - 1985	1530813
L	488m SW	Unspecified Works	1985	1438142
O	490m SW	Unspecified Mills	1890 - 1905	1485105
14	490m SE	Unspecified Works	1975 - 1985	1495873
N	497m S	Mill Pond	1905	1546597
N	498m S	Mill Pond	1938 - 1948	1539943

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

34

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

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

ID	Location	Land use	Dates present	Group ID
C	267m W	Unspecified Tank	1918 - 1932	247672
C	273m W	Tanks	1932	249506
C	274m W	Tanks	1893	249195
C	286m NW	Unspecified Tank	1918	223043
C	294m NW	Unspecified Tank	1893	223033
H	310m W	Unspecified Tank	1961	234915



ID	Location	Land use	Dates present	Group ID
F	314m S	Gas Works	1893 - 1907	239235
C	322m NW	Unspecified Tank	1893	241471
F	324m SW	Tanks	1893	230282
C	325m NW	Unspecified Tank	1907	249534
C	326m NW	Unspecified Tank	1918	247711
F	334m SW	Tanks	1932	230283
F	334m SW	Unspecified Tank	1961	243441
F	336m SW	Gasometer	1893 - 1907	244099
F	337m SW	Unspecified Tank	1993 - 1996	249324
F	337m SW	Gasometer	1893 - 1907	242354
F	337m SW	Unspecified Tank	1984	241242
I	339m E	Unspecified Tank	1907	223047
I	340m E	Unspecified Tank	1918	223049
F	343m SW	Unspecified Tank	1907	223041
F	347m SW	Gasometer	1893	229565
F	353m SW	Unspecified Tank	1993 - 1996	234046
7	382m SE	Unspecified Tank	1893	223048
F	400m SW	Unspecified Tank	1932	223040
8	420m SW	Tanks	1893	230284
F	420m SW	Tanks	1932	230281
L	433m SW	Unspecified Tank	1893	223042
F	438m SW	Tanks	1932	230279
K	454m SE	Unspecified Tank	1907	222887
L	465m SW	Unspecified Tank	1961	240836
L	466m SW	Unspecified Tank	1893 - 1961	242744
L	472m SW	Gasometer	1907	229564
L	473m SW	Unspecified Tank	1932	249891
K	488m S	Unspecified Tank	1983 - 1993	247036

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m

14

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

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

ID	Location	Land use	Dates present	Group ID
2	193m S	Electricity Substation	1983 - 1993	137669
F	314m S	Gas Works	1893 - 1907	144372
F	336m SW	Gasometer	1893 - 1907	140831
F	337m SW	Gasometer	1893 - 1907	145231
F	347m SW	Gasometer	1893	131422
L	395m SW	Gas and Drysaltery Works	1893 - 1907	134687
M	427m S	Electricity Substation	1983	128879
M	442m S	Electricity Substation	1993	128878
M	451m S	Electricity Substation	1983 - 1993	145127
10	457m E	Electricity Substation	1989 - 1999	143940
P	457m N	Electricity Substation	1969 - 1993	140184
P	460m N	Electricity Substation	1984	141142
11	460m W	Electricity Substation	1993	128880
L	472m SW	Gasometer	1907	131421

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

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



This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

7

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

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

ID	Location	Land use	Dates present	Group ID
E	256m NW	Garage	1961	42867
E	257m NW	Garage	1983 - 1990	44614
E	269m NW	Garage	1962	43902
L	466m SW	Garage	1993 - 1996	45042
L	467m SW	Garage	1984	43627
L	468m SW	Garage	1961	42236
L	468m SW	Garage	1961	44236

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

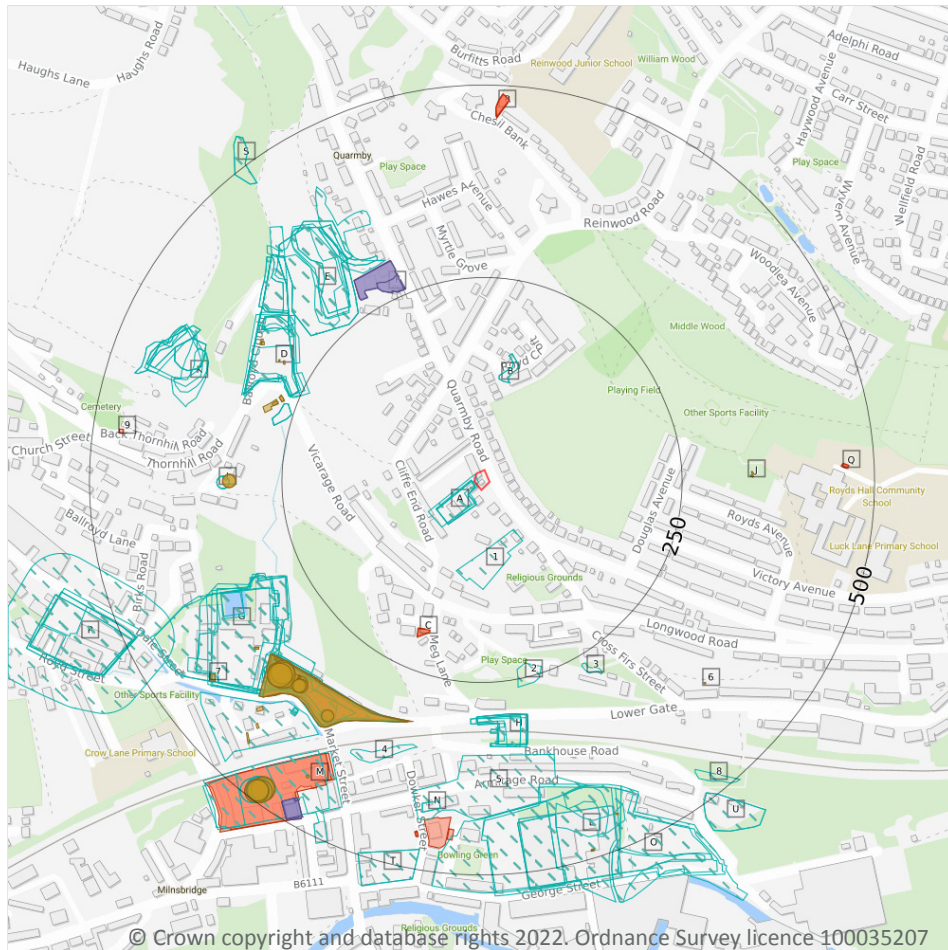
0

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

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

129

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 21**

ID	Location	Land Use	Date	Group ID
A	On site	Chemical Works	1905	1443313
A	1m SW	Unspecified Mill	1938	1498486
A	3m SW	Unspecified Commercial/Industrial	1975	1535500

ID	Location	Land Use	Date	Group ID
A	3m SW	Unspecified Mill	1956	1510311
A	3m SW	Unspecified Commercial/Industrial	1966	1535500
1	66m SE	Unspecified Mill	1948	1421190
B	118m N	Unspecified Ground Workings	1948	1494844
B	118m N	Unspecified Ground Workings	1905	1466102
2	232m S	Unspecified Pit	1890	1451759
D	241m NW	Unspecified Mill	1890	1476154
D	248m NW	Unspecified Mills	1905	1552136
D	250m NW	Unspecified Mill	1948	1531696
D	252m W	Unspecified Ground Workings	1975	1498916
D	252m W	Unspecified Ground Workings	1985	1498916
D	252m W	Unspecified Ground Workings	1966	1498916
D	253m NW	Unspecified Mills	1938	1536169
D	255m NW	Unspecified Mill	1975	1469331
D	255m NW	Unspecified Mills	1956	1517511
D	255m NW	Unspecified Mill	1966	1469331
E	255m NW	Unspecified Ground Workings	1975	1461791
E	255m NW	Unspecified Ground Workings	1985	1461791
E	255m NW	Unspecified Ground Workings	1966	1461791
3	261m SE	Unspecified Ground Workings	1905	1412129
E	266m NW	Refuse Heap	1905	1436528
E	267m NW	Unspecified Ground Workings	1956	1472792
E	269m NW	Unspecified Ground Workings	1948	1526979
E	272m NW	Unspecified Ground Workings	1938	1462627
E	272m NW	Unspecified Ground Workings	1938	1462627
G	273m SW	Unspecified Mill	1985	1489919
G	275m SW	Unspecified Mill	1975	1489919
G	275m SW	Unspecified Mill	1966	1514021



ID	Location	Land Use	Date	Group ID
G	291m SW	Unspecified Mills	1938	1475711
G	292m SW	Unspecified Mills	1956	1467730
H	293m S	Railway Station	1956	1467211
H	293m S	Railway Station	1966	1467211
H	294m S	Railway Station	1938	1529392
G	294m SW	Unspecified Mills	1948	1529420
G	295m SW	Unspecified Mills	1890	1529533
H	296m S	Railway Station	1948	1529392
H	296m S	Railway Station	1905	1492882
H	297m S	Railway Station	1890	1542105
D	298m NW	Unspecified Ground Workings	1948	1412110
E	299m NW	Unspecified Quarry	1890	1426669
G	300m SW	Unspecified Mills	1905	1529533
D	304m NW	Unspecified Pit	1956	1478991
D	304m NW	Unspecified Pit	1966	1478991
D	306m NW	Unspecified Pit	1975	1460415
E	306m NW	Unspecified Ground Workings	1948	1487854
E	306m NW	Unspecified Ground Workings	1905	1481219
G	318m S	Gas Works	1890	1547442
I	318m W	Unspecified Tank	1975	1478477
I	318m W	Unspecified Tank	1985	1478477
I	318m W	Unspecified Tank	1966	1478477
G	319m S	Gas Works	1905	1547442
D	321m NW	Mill Ponds	1956	1462643
D	323m NW	Mill Ponds	1938	1501019
G	325m SW	Unspecified Works	1975	1438140
D	327m NW	Mill Ponds	1948	1501019
D	327m NW	Mill Ponds	1905	1501340



ID	Location	Land Use	Date	Group ID
G	329m SW	Unspecified Tanks	1938	1552182
G	331m SW	Unspecified Tank	1956	1472346
G	333m SW	Unspecified Tanks	1948	1552182
G	334m SW	Mill Pond	1938	1485203
G	337m SW	Mill Pond	1956	1497334
G	337m SW	Unspecified Tank	1975	1519976
G	337m SW	Unspecified Tank	1956	1519976
G	337m SW	Unspecified Tank	1966	1519976
G	339m SW	Unspecified Tank	1890	1497302
G	340m SW	Gasometer	1890	1466821
G	342m SW	Gasometer	1905	1554342
4	342m S	Unspecified Ground Workings	1890	1412134
G	343m SW	Gasometer	1905	1466821
5	345m S	Nursery	1890	1439905
G	348m SW	Unspecified Tank	1890	1433308
G	370m SW	Unspecified Works	1966	1438141
G	372m SW	Unspecified Tank	1956	1518162
G	373m SW	Unspecified Tank	1938	1535141
K	373m W	Refuse Heap	1905	1480540
K	375m W	Refuse Heap	1948	1531981
G	375m SW	Unspecified Tank	1948	1518162
K	380m W	Unspecified Disused Quarry	1956	1463248
K	384m W	Unspecified Heap	1975	1543693
K	384m W	Unspecified Heap	1985	1543693
K	384m W	Unspecified Heap	1966	1543693
K	385m W	Unspecified Disused Quarry	1938	1488411
L	389m S	Chemical Works	1938	1492933
M	392m SW	Unspecified Mills	1985	1419106



ID	Location	Land Use	Date	Group ID
L	393m S	Unspecified Mills	1948	1538366
M	400m SW	Gas Works	1905	1414810
K	404m NW	Unspecified Disused Quarry	1975	1531495
K	404m NW	Unspecified Disused Quarry	1985	1531495
L	405m S	Chemical Works	1905	1483772
L	407m S	Unspecified Ground Workings	1905	1412135
N	407m S	Police Station	1975	1497277
N	407m S	Police Station	1985	1497277
K	408m NW	Unspecified Quarry	1890	1426668
L	412m S	Timber Yard	1938	1410423
K	418m NW	Unspecified Disused Quarry	1948	1465937
K	418m NW	Unspecified Disused Quarry	1905	1468807
L	418m S	Refuse Heap	1966	1436529
O	424m SE	Unspecified Mills	1905	1538495
O	425m SE	Unspecified Mills	1938	1526074
L	430m S	Unspecified Mill	1985	1421189
L	433m S	Unspecified Works	1975	1516603
L	433m S	Unspecified Works	1966	1516603
P	435m SW	Unspecified Mills	1956	1463582
8	457m SE	Unspecified Ground Workings	1890	1412136
M	468m SW	Unspecified Tank	1956	1488278
M	468m SW	Unspecified Tank	1966	1488278
M	469m SW	Unspecified Tank	1890	1459152
M	469m SW	Unspecified Tank	1938	1458793
P	471m SW	Woollen Mills	1890	1411708
S	473m NW	Unspecified Quarry	1975	1520997
S	473m NW	Unspecified Quarry	1985	1520997
T	474m S	Unspecified Works	1975	1494201



ID	Location	Land Use	Date	Group ID
T	474m S	Unspecified Works	1985	1494201
M	475m SW	Unspecified Tank	1948	1501307
M	475m SW	Gasometer	1905	1420657
P	482m SW	Unspecified Mills	1938	1554151
P	485m SW	Unspecified Mills	1975	1530813
P	485m SW	Unspecified Mills	1985	1530813
P	485m SW	Unspecified Commercial/Industrial	1966	1410454
M	488m SW	Unspecified Works	1985	1438142
P	490m SW	Unspecified Mills	1948	1530813
P	490m SW	Unspecified Mills	1905	1485105
U	490m SE	Unspecified Works	1975	1495873
U	490m SE	Unspecified Works	1985	1495873
O	497m S	Mill Pond	1905	1546597
O	498m S	Mill Pond	1938	1539943

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

44

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 21**

ID	Location	Land Use	Date	Group ID
D	267m W	Unspecified Tank	1918	247672
D	267m W	Unspecified Tank	1932	247672
D	273m W	Tanks	1932	249506
D	274m W	Tanks	1893	249195
D	286m NW	Unspecified Tank	1918	223043
D	294m NW	Unspecified Tank	1893	223033



ID	Location	Land Use	Date	Group ID
I	310m W	Unspecified Tank	1961	234915
I	310m W	Unspecified Tank	1961	234915
G	314m S	Gas Works	1893	239235
G	316m S	Gas Works	1907	239235
D	322m NW	Unspecified Tank	1893	241471
G	324m SW	Tanks	1893	230282
D	325m NW	Unspecified Tank	1907	249534
D	326m NW	Unspecified Tank	1918	247711
G	334m SW	Tanks	1932	230283
G	334m SW	Unspecified Tank	1961	243441
G	335m SW	Unspecified Tank	1961	243441
G	336m SW	Gasometer	1893	244099
G	337m SW	Unspecified Tank	1996	249324
G	337m SW	Unspecified Tank	1993	249324
G	337m SW	Gasometer	1893	242354
G	337m SW	Unspecified Tank	1984	241242
J	339m E	Unspecified Tank	1907	223047
G	339m SW	Gasometer	1907	242354
G	340m SW	Gasometer	1907	244099
J	340m E	Unspecified Tank	1918	223049
G	343m SW	Unspecified Tank	1907	223041
G	347m SW	Gasometer	1893	229565
G	353m SW	Unspecified Tank	1996	234046
G	353m SW	Unspecified Tank	1993	234046
6	382m SE	Unspecified Tank	1893	223048
G	400m SW	Unspecified Tank	1932	223040
7	420m SW	Tanks	1893	230284
G	420m SW	Tanks	1932	230281



ID	Location	Land Use	Date	Group ID
M	433m SW	Unspecified Tank	1893	223042
G	438m SW	Tanks	1932	230279
L	454m SE	Unspecified Tank	1907	222887
M	465m SW	Unspecified Tank	1961	240836
M	466m SW	Unspecified Tank	1961	242744
M	470m SW	Unspecified Tank	1893	242744
M	472m SW	Gasometer	1907	229564
M	473m SW	Unspecified Tank	1932	249891
L	488m S	Unspecified Tank	1983	247036
L	489m S	Unspecified Tank	1993	247036

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

22

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 21**

ID	Location	Land Use	Date	Group ID
C	193m S	Electricity Substation	1983	137669
C	194m S	Electricity Substation	1993	137669
G	314m S	Gas Works	1893	144372
G	316m S	Gas Works	1907	144372
G	336m SW	Gasometer	1893	140831
G	337m SW	Gasometer	1893	145231
G	339m SW	Gasometer	1907	145231
G	340m SW	Gasometer	1907	140831
G	347m SW	Gasometer	1893	131422
M	395m SW	Gas and Drysaltery Works	1893	134687



ID	Location	Land Use	Date	Group ID
M	398m SW	Gas and Drysaltery Works	1907	134687
N	427m S	Electricity Substation	1983	128879
N	442m S	Electricity Substation	1993	128878
N	451m S	Electricity Substation	1983	145127
N	452m S	Electricity Substation	1993	145127
Q	457m E	Electricity Substation	1999	143940
R	457m N	Electricity Substation	1993	140184
R	459m N	Electricity Substation	1969	140184
Q	459m E	Electricity Substation	1989	143940
R	460m N	Electricity Substation	1984	141142
9	460m W	Electricity Substation	1993	128880
M	472m SW	Gasometer	1907	131421

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

9

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

Features are displayed on the Past land use - un-grouped map on **page 21**

ID	Location	Land Use	Date	Group ID
F	256m NW	Garage	1961	42867

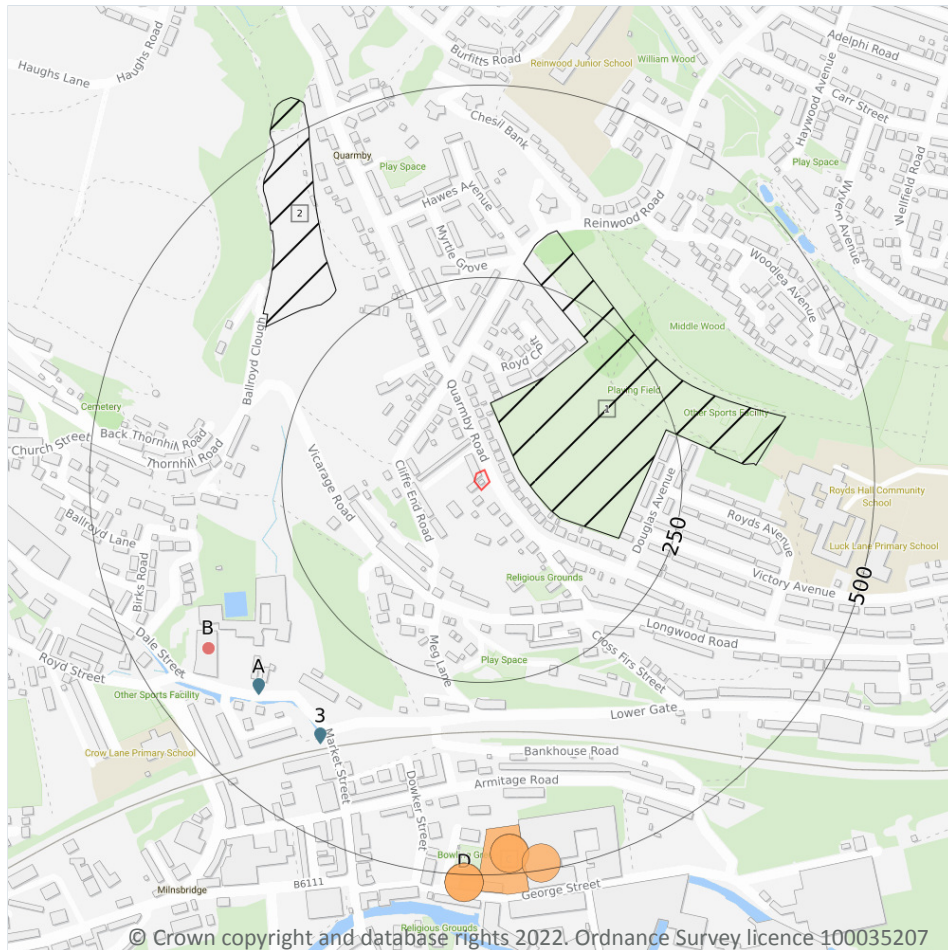


ID	Location	Land Use	Date	Group ID
F	257m NW	Garage	1983	44614
F	257m NW	Garage	1990	44614
F	269m NW	Garage	1962	43902
M	466m SW	Garage	1993	45042
M	466m SW	Garage	1996	45042
M	467m SW	Garage	1984	43627
M	468m SW	Garage	1961	42236
M	468m SW	Garage	1961	44236

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



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

2

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 31**

ID	Location	Details		
1	41m NE	Site Address: Royds Hall Playing Fields, Reinwood Road, Quarmby Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded: - Last Recorded: -
2	296m NW	Site Address: Haughs Road Quarry, Haughs Road, Quarmby, Huddersfield Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: Inert, Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded: - Last Recorded: -

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

3.5 Historical waste sites

Records within 500m

6

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

Features are displayed on the Waste and landfill map on **page 31**



ID	Location	Address	Further Details	Date
C	437m S	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1982
C	448m S	Site Address: George Street, Milnsbridge, HUDDERSFIELD, West Yorkshire, HD3 4JF	Type of Site: Waste Transfer Station Planning application reference: 2004/62/91314/W0 Description: Scheme comprises use of land as waste transfer station An application (ref: 2004/62/91314/W0) for Detailed Planning permission was submitted to Kirklees B.C. on 13th April 2004. Data source: Historic Planning Application Data Type: Point	-
C	448m S	Site Address: Bankhouse Lane, /, George Street, Milnsbridge, HUDDERSFIELD, West Yorkshire, HD3 4J	Type of Site: Waste Transfer Station Planning application reference: 2009/62/92750/W0 Description: Scheme comprises operation of a waste transfer station and skip hire depot. Construction - brick, stone walls; pad foundations. An application (ref: 2009/62/92750/W0) for detailed planning permission was withdrawn from Kirklees B.C. A detailed planning application has been withdrawn. Data source: Historic Planning Application Data Type: Point	-
C	465m S	Site Address: George Street, Milnsbridge, HUDDERSFIELD, West Yorkshire, HD3 4JF	Type of Site: Waste Transfer (Change of Use) Planning application reference: 94/62/92713/W0 Description: An application (ref: 94/62/92713/W0) for Detailed Planning permission was submitted to Kirklees B.C. on 22nd August 1994. Data source: Historic Planning Application Data Type: Point	-



ID	Location	Address	Further Details	Date
D	484m S	Site Address: Golcar Skip Hire Ltd, George Street, Milnsbridge, HUDDERSFIELD, West Yorkshire, HD3 4JD	Type of Site: Waste Transfer Station Planning application reference: 2005/62/90018/WO Description: Scheme comprises of a waste transfer station with associated works. Construction - block, steel cladding, stone, stone cladding walls; steel cladding roof; roller shutter doors; concrete paving site works. An application (ref: 2005/62/90018/WO) for Det led Planning permission was withdrawn from Kirklees B.C. on 3rd March 2005. Tender details remain to be finalised. Please note the start date and value are guidelines only. Detailed plans withdrawn to be resubmitted April, 2005. Data source: Historic Planning Application Data Type: Point	-
D	485m S	Site Address: Golcar Skip Hire Ltd, George Street, Milnsbridge, HUDDERSFIELD, West Yorkshire, HD3 4JD	Type of Site: Recycling Centre (Conversion/New) Planning application reference: 2005/62/92228/WO Description: Scheme comprises change of use from scrap yard to waste recycling centre and construction of new building. An application (ref: 2005/62/92228/WO) for detailed planning permission was refused by Kirklees B.C. Planning decision obtained Data source: Historic Planning Application Data Type: Point	-

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

3.6 Licensed waste sites

Records within 500m

3

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

Features are displayed on the Waste and landfill map on **page 31**



ID	Location	Details		
3	382m SW	Site Name: - Site Address: Arches Auto Spares, 11/16, Viaducts, Market Street, Milnsbridge, Huddersfield, West Yorkshire, HD3 4HT Correspondence Address: -	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TAY001 EPR reference: EA/EPR/TP3295ZP/S002 Operator: Taylor R A Waste Management licence No: 61037 Annual Tonnage: 5000	Issue Date: 22/10/1992 Effective Date: - Modified: - Surrendered Date: Oct 13 2005 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered
A	386m SW	Site Name: Yard At Cliffe End Dyeing Company Site Address: *, Dale Street, Longwood, Huddersfield, HD6 1PW Correspondence Address: Mr W Barron, Clifton Bridge Works*, Wood Street, Brighouse, HD6 1PW	Type of Site: Material Recycling Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 0001 EPR reference: - Operator: Blagden Packaging N V Waste Management licence No: 61024 Annual Tonnage: 0	Issue Date: 18/03/1992 Effective Date: 20/09/2000 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred
A	386m SW	Site Name: Yard At Cliffe End Dyeing Company Site Address: *, Dale Street, Longwood, Huddersfield, West Yorkshire, HD3 4TG Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 0001 EPR reference: EA/EPR/KP3495ZR/S002 Operator: Blagden Packaging N V Waste Management licence No: 61024 Annual Tonnage: 3000	Issue Date: 18/03/1992 Effective Date: 20/09/2000 Modified: - Surrendered Date: Apr 18 2006 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered

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 31**

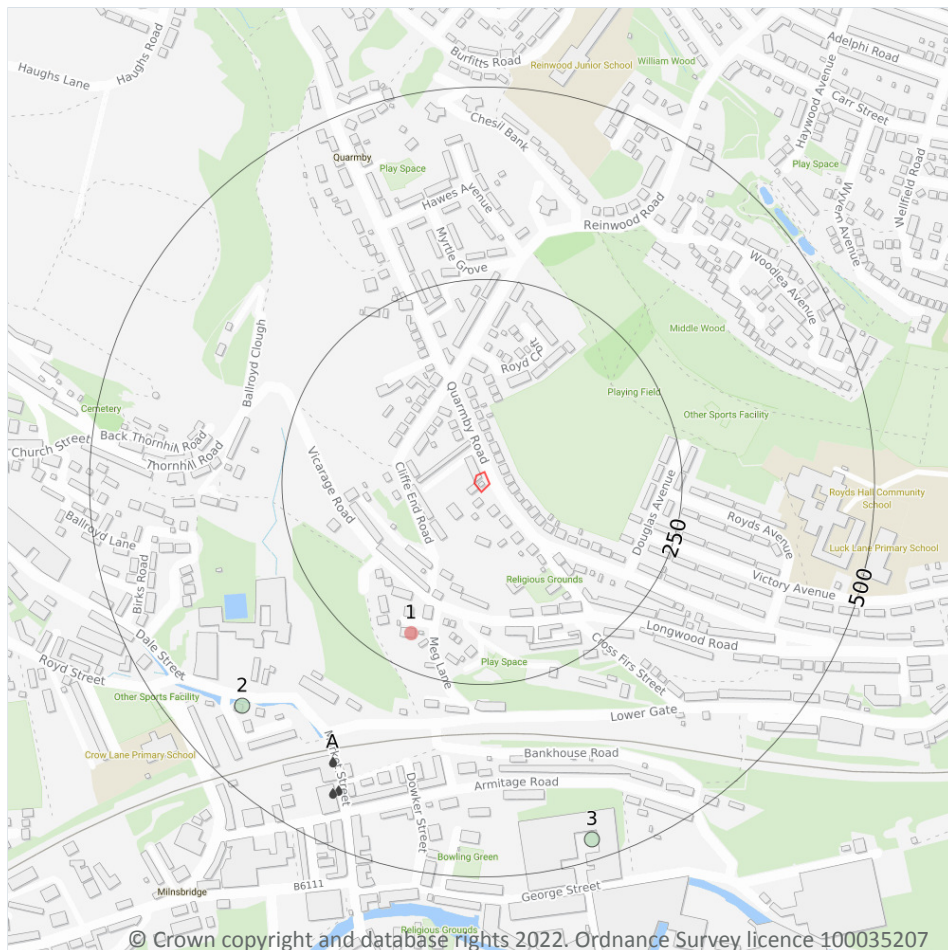


ID	Location	Site	Reference	Category	Sub-Category	Description
B	409m SW	CLIFFE END BUSINESS PARK, UNIT 8, DALE STREET, LONGWOOD, HUDDERSFIELD, HD3 4TG	WEX234522	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
B	409m SW	CLIFFE END BUSINESS PARK, UNIT 8, DALE STREET, LONGWOOD, HUDDERSFIELD, HD3 4TG	WEX088522	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

1

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 37**

ID	Location	Company	Address	Activity	Category
1	205m SW	Electricity Sub Station	West Yorkshire, HD3	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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

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

Records within 500m

0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

6

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

Features are displayed on the Current industrial land use map on **page 37**

ID	Location	Address	Details	
A	400m SW	YWS UNKNOWN SITES DEFAULT	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: S/CB/51 Permit Version: 1 Receiving Water: VARIES WITH OUTLET	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 27/05/1963 Effective Date: 27/05/1963 Revocation Date: 01/07/1993
A	400m SW	YWS UNKNOWN SITES DEFAULT	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: S/CB/51 Permit Version: 2 Receiving Water: VARIES WITH OUTLET	Status: REVISED BY NOTICE, AT DIRECTION OF SEC. OF STATE - 37(2) Issue date: 02/07/1993 Effective Date: 02/07/1993 Revocation Date: 24/01/1995
A	400m SW	YWS UNKNOWN SITES DEFAULT	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: S/CB/51 Permit Version: 3 Receiving Water: VARIES WITH OUTLET	Status: REVISED BY NOTICE, AT DIRECTION OF SEC. OF STATE - 37(2) Issue date: 25/01/1995 Effective Date: 25/01/1995 Revocation Date: 05/03/1995
A	430m SW	MILNSBRIDGE (MARKET STREET) CSO, MARKET STREET, MILNSBRIDGE, HUDDERSFIELD, WEST YORKSHIRE, HD3 4JY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA8766 Permit Version: 3 Receiving Water: LONGWOOD BROOK	Status: VARIED UNDER EPR 2010 Issue date: 09/08/2019 Effective Date: 09/08/2019 Revocation Date: -



ID	Location	Address	Details	
A	436m SW	MILNSBRIDGE (MARKET STREET) CSO, MARKET STREET, MILNSBRIDGE, HUDDERSFIELD, WEST YORKSHIRE, HD3 4JY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA8766 Permit Version: 1 Receiving Water: LONGWOOD BROOK	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 11/03/2005 Effective Date: 01/04/2005 Revocation Date: 23/03/2010
A	436m SW	MILNSBRIDGE (MARKET STREET) CSO, MARKET STREET, MILNSBRIDGE, HUDDERSFIELD, WEST YORKSHIRE, HD3 4JY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA8766 Permit Version: 2 Receiving Water: LONGWOOD BROOK	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 24/03/2010 Effective Date: 24/03/2010 Revocation Date: 08/08/2019

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m

0

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

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



4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

2

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

Features are displayed on the Current industrial land use map on **page 37**

ID	Location	Details	
2	416m SW	Incident Date: 22/09/2005 Incident Identification: 348387 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3	473m S	Incident Date: 19/10/2001 Incident Identification: 37840 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m

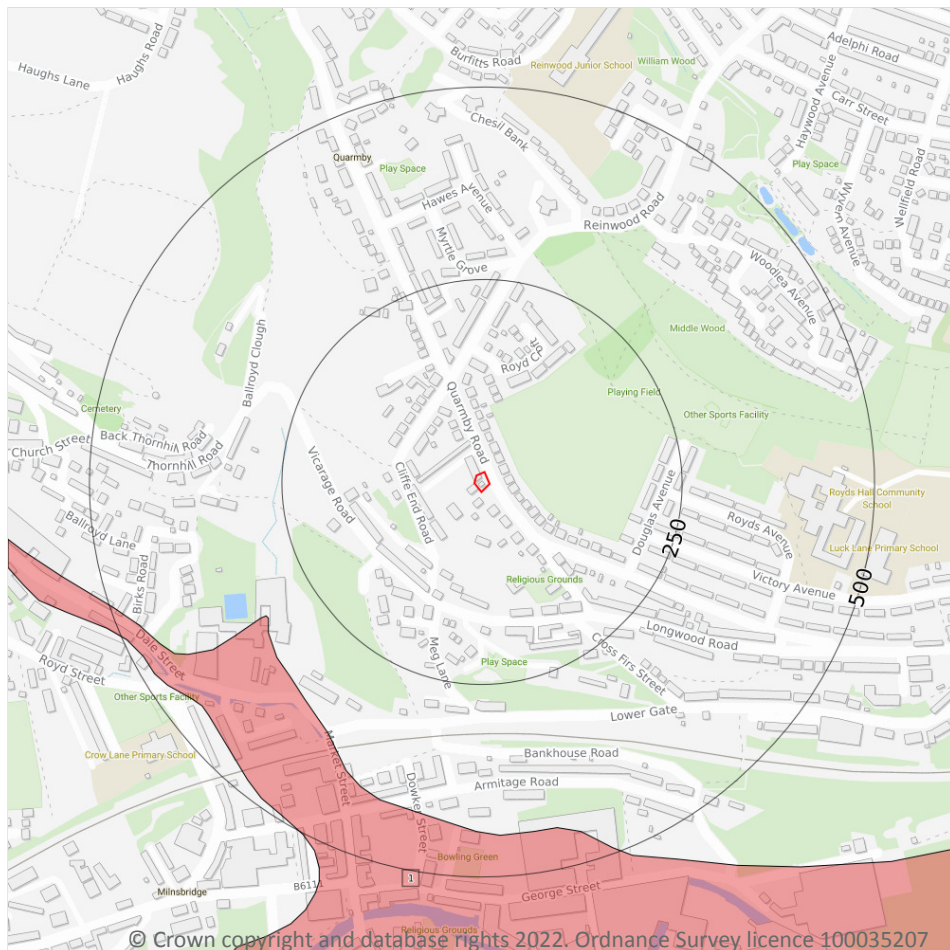
0

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

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



5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

1

Aquifer status of groundwater held within superficial geology.

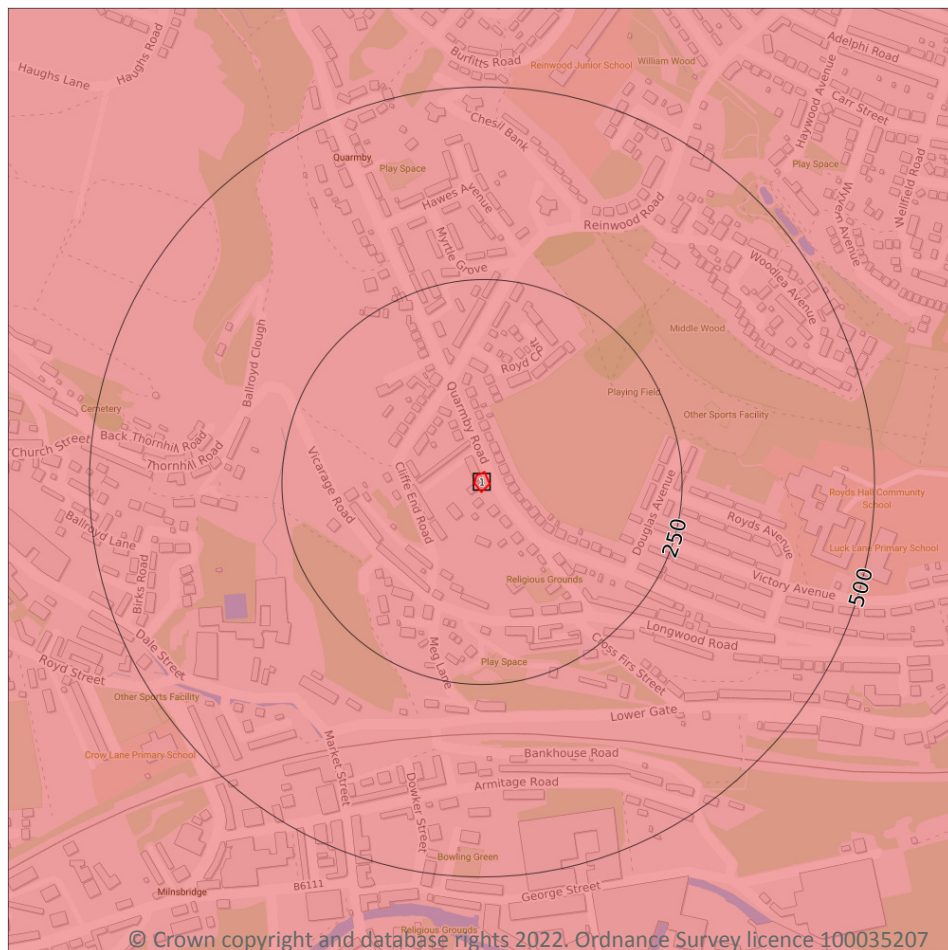
Features are displayed on the Hydrogeology map on **page 44**

ID	Location	Designation	Description
1	320m SW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

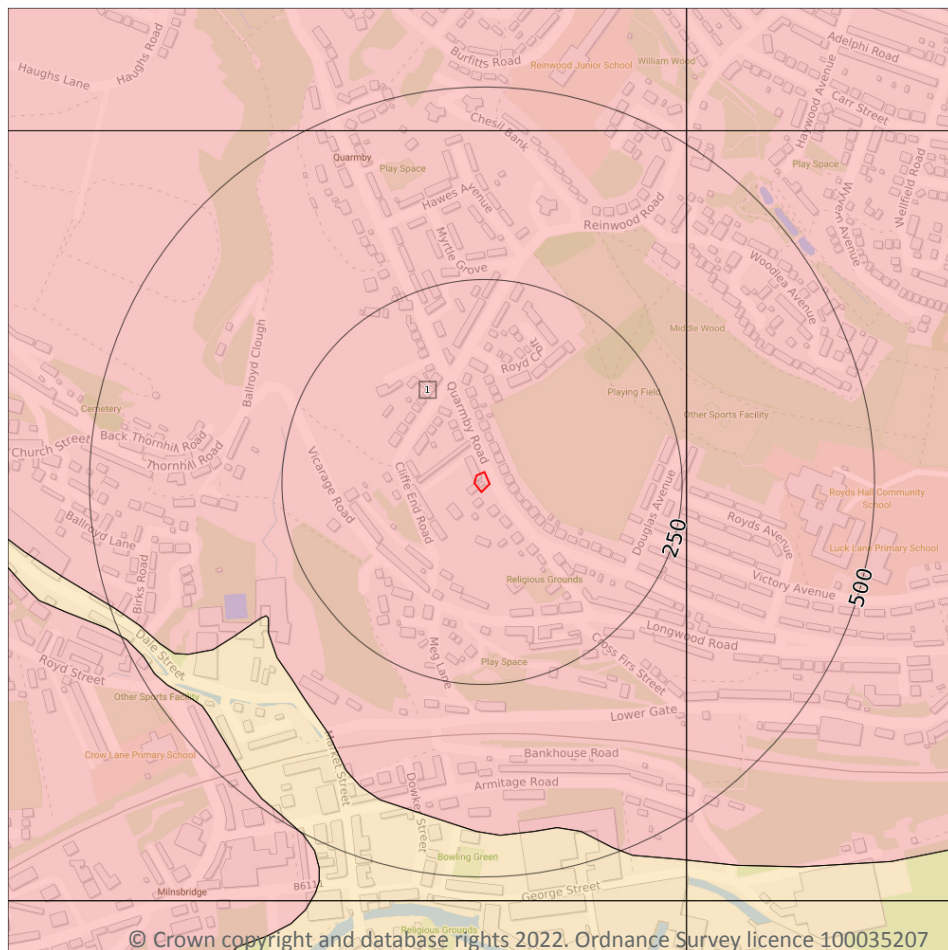
Features are displayed on the Bedrock aquifer map on **page 45**

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

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



Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m

1

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

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

Features are displayed on the Groundwater vulnerability map on **page 46**

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: >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
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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.

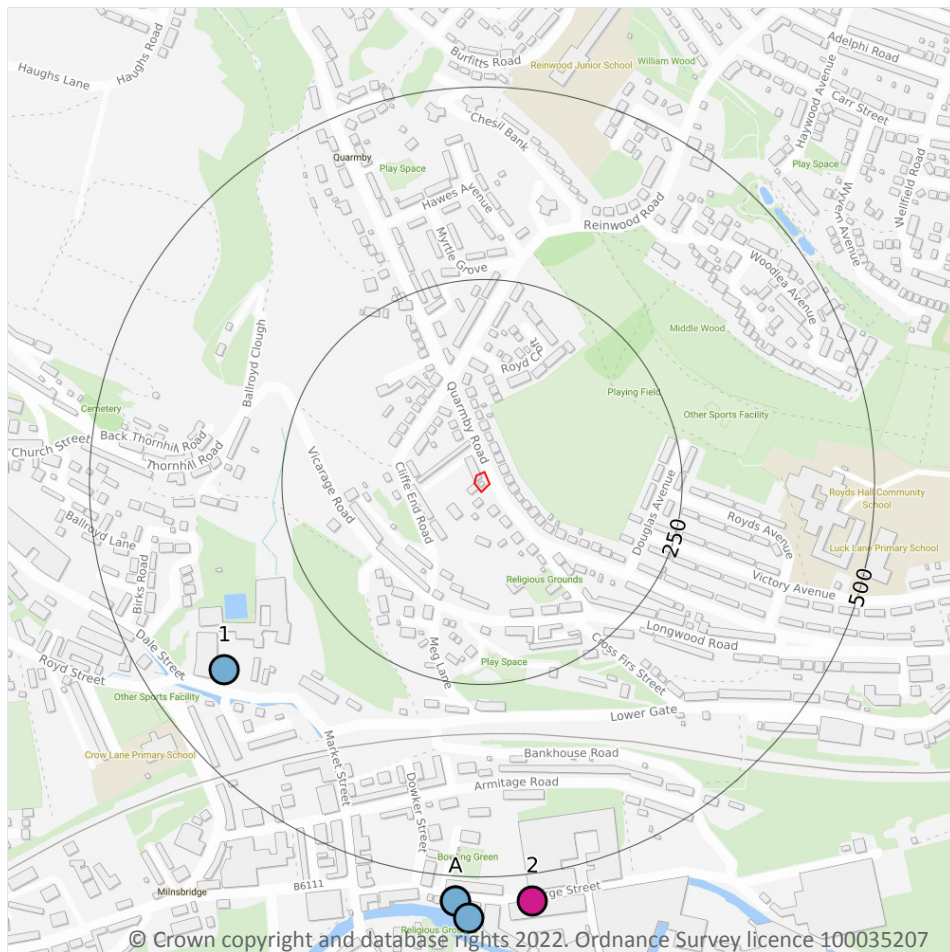
5.5 Groundwater vulnerability- local information

Records on site	0
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This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

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

Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

16

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 48**



ID	Location	Details	
2	535m S	Status: Historical Licence No: 2/27/11/036(G) Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - MILNSBRIDGE Data Type: Point Name: YORKSHIRE WOOL DYEING CO LTD Easting: 411800 Northing: 416000	Annual Volume (m ³): 4546 Max Daily Volume (m ³): 81.828 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/09/1998 Version End Date: -
-	629m W	Status: Active Licence No: NE/027/0011/018 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - WOODLAND MILL Data Type: Point Name: Wooltex UK Ltd Easting: 411097 Northing: 416494	Annual Volume (m ³): 164,250 Max Daily Volume (m ³): 450 Original Application No: - Original Start Date: 24/10/2017 Expiry Date: 31/03/2027 Issue No: 3 Version Start Date: 16/07/2019 Version End Date: -
-	765m SE	Status: Active Licence No: NE/027/0011/017 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - TNAYARD RD - MILNSBRIDGE Data Type: Point Name: MNS Textiles Ltd Easting: 412077 Northing: 415847	Annual Volume (m ³): 250,000 Max Daily Volume (m ³): 1,000 Original Application No: - Original Start Date: 28/07/2014 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 28/07/2014 Version End Date: -
-	817m SE	Status: Historical Licence No: 2/27/11/037 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: JOHN CROWTHER & SONS (MILNSBRIDGE) LTD Easting: 412100 Northing: 415800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -

ID	Location	Details	
-	817m SE	Status: Historical Licence No: 2/27/11/037 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT - MILNSBRIDGE Data Type: Point Name: JOHN GLADSTONE (DYERS & FINISHERS) LTD Easting: 412100 Northing: 415800	Annual Volume (m ³): 454609 Max Daily Volume (m ³): 1296 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 11/10/2002 Version End Date: -
-	886m N	Status: Historical Licence No: 2/27/11/186 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-MILLSTONE GRIT-OAKES-HUDDERSFIELD Data Type: Point Name: T E NEWSHOLME LIMITED Easting: 411940 Northing: 417420	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/06/2000 Expiry Date: 31/12/2009 Issue No: 1 Version Start Date: 10/06/2000 Version End Date: -
-	886m N	Status: Historical Licence No: 2/27/11/186 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT- OAKES Data Type: Point Name: T E NEWSHOLME LTD Easting: 411940 Northing: 417420	Annual Volume (m ³): 35000 Max Daily Volume (m ³): 96 Original Application No: - Original Start Date: 10/06/2000 Expiry Date: 31/12/2009 Issue No: 1 Version Start Date: 10/06/2000 Version End Date: -
-	1052m N	Status: Historical Licence No: 2/27/10/120 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: JOHN GLADSTONE & COMPANY LIMITED Easting: 411600 Northing: 417600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/01/1997 Expiry Date: 31/12/2001 Issue No: 100 Version Start Date: 21/01/1997 Version End Date: -



ID	Location	Details	
-	1385m N	Status: Historical Licence No: 2/27/11/058 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: SPRINGCATCHMENT AREA Data Type: Point Name: JOSEPH SYKES BROTHERS Easting: 411400 Northing: 417900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -
-	1385m N	Status: Historical Licence No: 2/27/11/058 Details: Boiler Feed Direct Source: GROUNDWATERS Point: SPRINGCATCHMENT AREA Data Type: Point Name: JOSEPH SYKES BROTHERS Easting: 411400 Northing: 417900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -
-	1385m N	Status: Historical Licence No: 2/27/11/058 Details: Boiler Feed Direct Source: GROUNDWATERS Point: SPRING - LINDLEY Data Type: Point Name: CALDERDALE & HUDDERSFIELD NHS TRUST Easting: 411400 Northing: 417900	Annual Volume (m ³): 24094 Max Daily Volume (m ³): 65.5 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1385m N	Status: Historical Licence No: 2/27/11/058 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: SPRING - LINDLEY Data Type: Point Name: CALDERDALE & HUDDERSFIELD NHS TRUST Easting: 411400 Northing: 417900	Annual Volume (m ³): 24094 Max Daily Volume (m ³): 65.5 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1663m W	Status: Historical Licence No: 2/27/11/117 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: SPRING Data Type: Point Name: SHEARD Easting: 410100 Northing: 416900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/04/1966 Version End Date: -



ID	Location	Details	
-	1663m W	Status: Historical Licence No: 2/27/11/117 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: SPRING - LONGWOOD Data Type: Point Name: SHEARD Easting: 410100 Northing: 416900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/04/1966 Version End Date: -
-	1901m S	Status: Historical Licence No: 2/27/10/124 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE- JOHNSONS WELLFIELD QUARRY- MILLSTONE GRIT Data Type: Point Name: JOHNSONS WELLFIELD QUARRIES LIMITED Easting: 411700 Northing: 414630	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/01/2001 Expiry Date: 31/12/2005 Issue No: 1 Version Start Date: 02/01/2001 Version End Date: -
-	1901m S	Status: Historical Licence No: 2/27/10/124 Details: Make-Up or Top Up Water Direct Source: GROUNDWATERS Point: BOREHOLE- MILLSTONE GRIT - WELLFIELD QUARRY Data Type: Point Name: JOHNSONS WELLFIELD QUARRIES LTD Easting: 411700 Northing: 414630	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/01/2001 Expiry Date: 31/12/2005 Issue No: 1 Version Start Date: 02/01/2001 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

17

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 48**



ID	Location	Details	
1	405m SW	Status: Historical Licence No: 2/27/11/169 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: TRIBUTARY OF LONGWOOD BROOK Data Type: Point Name: EDDIE & BESSIE E FIRTH & JACQUELINE M & JOHN G WALKER Easting: 411400 Northing: 416300	Annual Volume (m ³): 20000 Max Daily Volume (m ³): 350 Original Application No: - Original Start Date: 26/01/1983 Expiry Date: - Issue No: 100 Version Start Date: 20/04/1990 Version End Date: -
A	531m S	Status: Historical Licence No: 2/27/11/036(S) Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: RIVER COLNE Data Type: Point Name: YORKSHIRE WOOL DYEING CO LTD Easting: 411700 Northing: 416000	Annual Volume (m ³): 68190 Max Daily Volume (m ³): 273.669 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/09/1998 Version End Date: -
A	531m S	Status: Historical Licence No: 2/27/11/036(S) Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: RIVER COLNE - MILNSBRIDGE Data Type: Point Name: YORKSHIRE WOOL DYEING CO LTD Easting: 411700 Northing: 416000	Annual Volume (m ³): 68190 Max Daily Volume (m ³): 273.669 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/09/1998 Version End Date: -
A	553m S	Status: Historical Licence No: 2/27/11/036 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: RIVER COLNE - MILNSBRIDGE Data Type: Point Name: YORKSHIRE WOOL DYEING CO LTD Easting: 411717 Northing: 415978	Annual Volume (m ³): 68190 Max Daily Volume (m ³): 273.7 Original Application No: - Original Start Date: 25/06/2014 Expiry Date: - Issue No: 2 Version Start Date: 20/08/2014 Version End Date: -



ID	Location	Details	
-	729m SE	Status: Historical Licence No: 2/27/11/144 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: HUDDERSFIELD CANAL Data Type: Point Name: BRITISH WATERWAYS BOARD Easting: 412100 Northing: 415900	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: 17/03/1980 Version End Date: -
-	817m SE	Status: Historical Licence No: 2/27/11/038 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: CATCHPIT Data Type: Point Name: JOHN CROWTHER & SONS (MILNSBRIDGE) LTD Easting: 412100 Northing: 415800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -
-	952m SE	Status: Historical Licence No: 2/27/11/038 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: CATCHPIT - MILNSBRIDGE Data Type: Point Name: JOHN GLADSTONE (DYERS & FINISHERS) LTD Easting: 412200 Northing: 415700	Annual Volume (m ³): 90922 Max Daily Volume (m ³): 300 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 103 Version Start Date: 05/06/2003 Version End Date: -
-	1186m SE	Status: Historical Licence No: 2/27/11/148 Details: General use relating to Secondary Category (Low Loss) Direct Source: SURFACE WATER Point: HUDDERSFIELD CANAL Data Type: Point Name: BRITISH WATERWAYS BOARD Easting: 412800 Northing: 416000	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: 08/10/1979 Version End Date: -



ID	Location	Details	
-	1372m W	Status: Historical Licence No: 2/27/11/115 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: CLAY WOOD BROOK/OAKSCAR RESERVOIR Data Type: Point Name: PARKWOOD MILLS CO LTD Easting: 410400 Northing: 416900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/04/1966 Expiry Date: - Issue No: 101 Version Start Date: 22/04/2002 Version End Date: -
-	1442m W	Status: Historical Licence No: 2/27/11/123 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: CLAY WOOD BROOK-PARKWOOD ROAD-LONGWOOD Data Type: Point Name: PARKWOOD MILLS CO LTD Easting: 410330 Northing: 416910	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/05/1966 Expiry Date: - Issue No: 102 Version Start Date: 30/08/2002 Version End Date: -
-	1442m SW	Status: Active Licence No: NE/027/0011/021 Details: Supply To A Canal For Throughflow Direct Source: SURFACE WATER Point: BRITANNIA BRIDGE, HOLME MILLS, HUDDERSFIELD Data Type: Point Name: Canal and River Trust Easting: 410621 Northing: 415613	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/03/2021 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 26/03/2021 Version End Date: -
-	1743m W	Status: Historical Licence No: 2/27/11/123 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: CLAYWOOD BROOK Data Type: Point Name: PARKWOOD MILLS CO LTD Easting: 410000 Northing: 416800	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: 26/05/1966 Version End Date: -



ID	Location	Details	
-	1814m SW	Status: Historical Licence No: 2/27/11/006 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: RIVER COLNE Data Type: Point Name: HARTFORD HOLDINGS LTD Easting: 410400 Northing: 415300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 17/03/1989 Version End Date: -
-	1814m SW	Status: Historical Licence No: 2/27/11/006 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: RIVER COLNE Data Type: Point Name: HARTFORD HOLDINGS LTD Easting: 410400 Northing: 415300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 17/03/1989 Version End Date: -
-	1814m SW	Status: Active Licence No: 2/27/11/006 Details: Boiler Feed Direct Source: SURFACE WATER Point: RIVER COLNE Data Type: Point Name: HARTFORD HOLDINGS LTD Easting: 410400 Northing: 415300	Annual Volume (m ³): 30,117 Max Daily Volume (m ³): 146.38 Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 17/03/1989 Version End Date: -
-	1814m SW	Status: Active Licence No: 2/27/11/006 Details: Process Water Direct Source: SURFACE WATER Point: RIVER COLNE Data Type: Point Name: HARTFORD HOLDINGS LTD Easting: 410400 Northing: 415300	Annual Volume (m ³): 30,117 Max Daily Volume (m ³): 146.38 Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 17/03/1989 Version End Date: -
-	1881m W	Status: Historical Licence No: 2/27/11/066 Details: Potable Water Supply - Direct Direct Source: SURFACE WATER Point: LONGWOOD UPPER AND LOWER RESERVOIRS Data Type: Line Name: YORKSHIRE WATER SERVICES LTD Easting: 409700 Northing: 417000	Annual Volume (m ³): 818297 Max Daily Volume (m ³): 2241.91 Original Application No: - Original Start Date: 27/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1966 Version End Date: -



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

5.8 Potable abstractions

Records within 2000m

1

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 48**

ID	Location	Details	
-	1881m W	Status: Historical Licence No: 2/27/11/066 Details: Potable Water Supply - Direct Direct Source: SURFACE WATER Point: LONGWOOD UPPER AND LOWER RESERVOIRS Data Type: Line Name: YORKSHIRE WATER SERVICES LTD Easting: 409700 Northing: 417000	Annual Volume (m ³): 818297 Max Daily Volume (m ³): 2241.91 Original Application No: - Original Start Date: 27/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1966 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

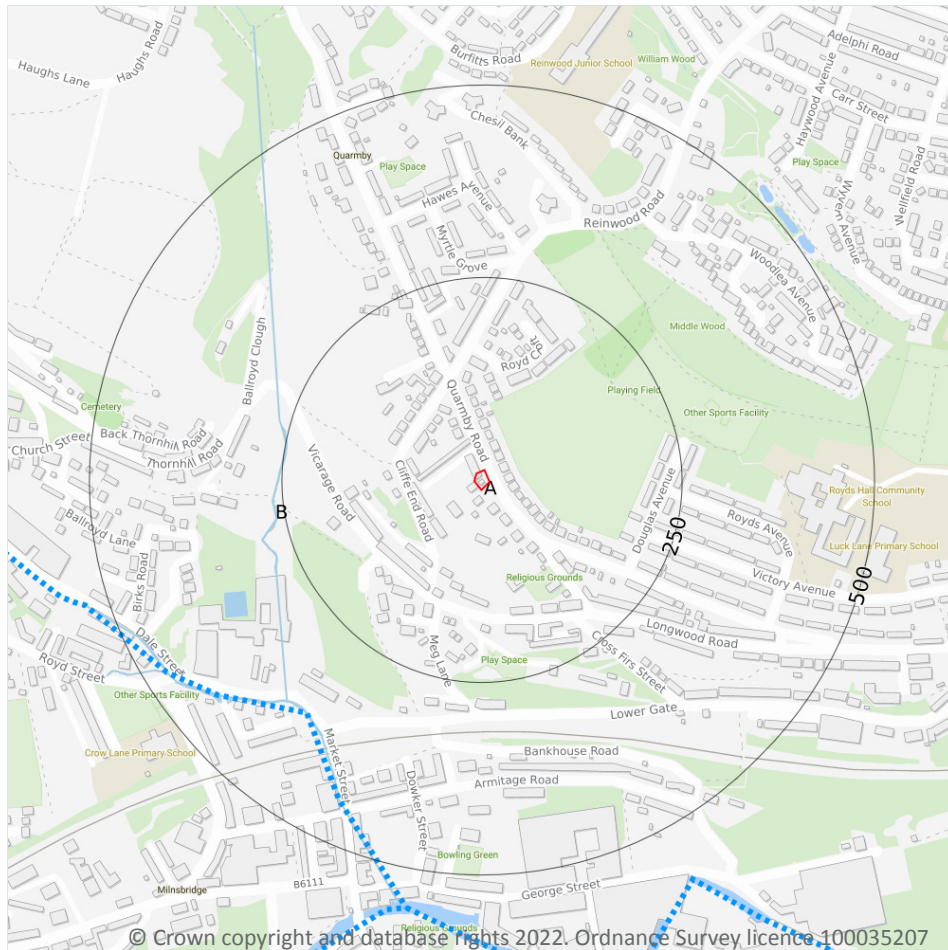
0

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

1

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

Features are displayed on the Hydrology map on **page 58**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	247m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.



6.2 Surface water features

Records within 250m

1

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

Features are displayed on the Hydrology map on **page 58**

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 58**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River	Colne from Wessenden Brook to R Holme	GB104027063330	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 58**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
8	368m SW	River	Colne from Wessenden Brook to R Holme	GB104027063330	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 58**

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

8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

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.

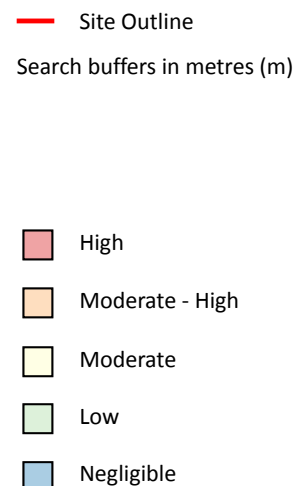
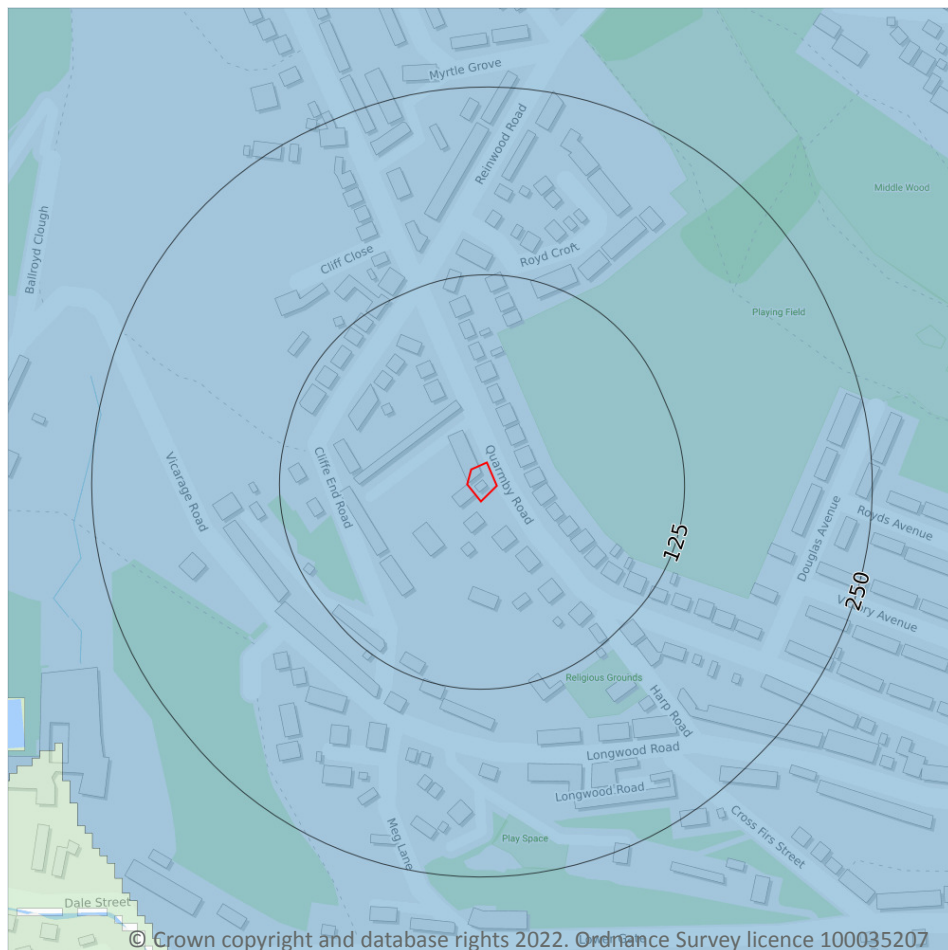
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site. The table below shows the maximum flood depths for a range of return periods for the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



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 65**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- ▨ Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

1

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.

Features are displayed on the Environmental designations map on **page 66**

ID	Location	Name	Data source
2	1155m E	Gledholt Woods	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m

0

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

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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

10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.



10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

1

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

Features are displayed on the Environmental designations map on **page 66**

ID	Location	Name	Local Authority name
1	759m SW	South and West Yorkshire	Kirklees

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

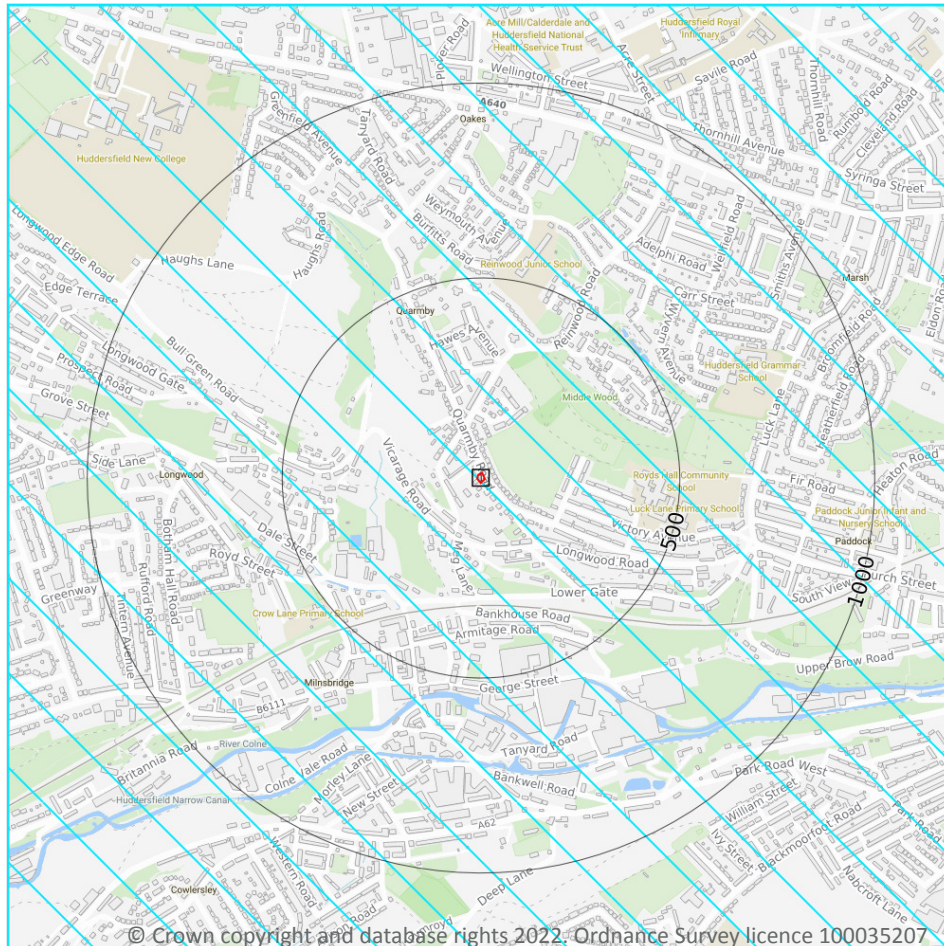
0

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

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



SSSI Impact Zones and Units



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

10.17 SSSI Impact Risk Zones

Records on site

1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 71**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Oil & gas exploration/extraction. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

This data is sourced from Natural England.

10.18 SSSI Units

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

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

11 Visual and cultural designations



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

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

4

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 73**

ID	Location	Name	Grade	Reference Number	Listed date
1	72m W	63, Cliffe End Road, Golcar, Kirklees, HD3	II	1134331	29/09/1978
A	237m NW	187, Quarmby Road, Lindley, Kirklees, HD3	II	1230102	29/09/1978
A	243m NW	183 And 185, Quarmby Road, Lindley, Kirklees, HD3	II	1278227	29/09/1978
A	243m NW	189, Quarmby Road, Lindley, Kirklees, HD3	II	1231212	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

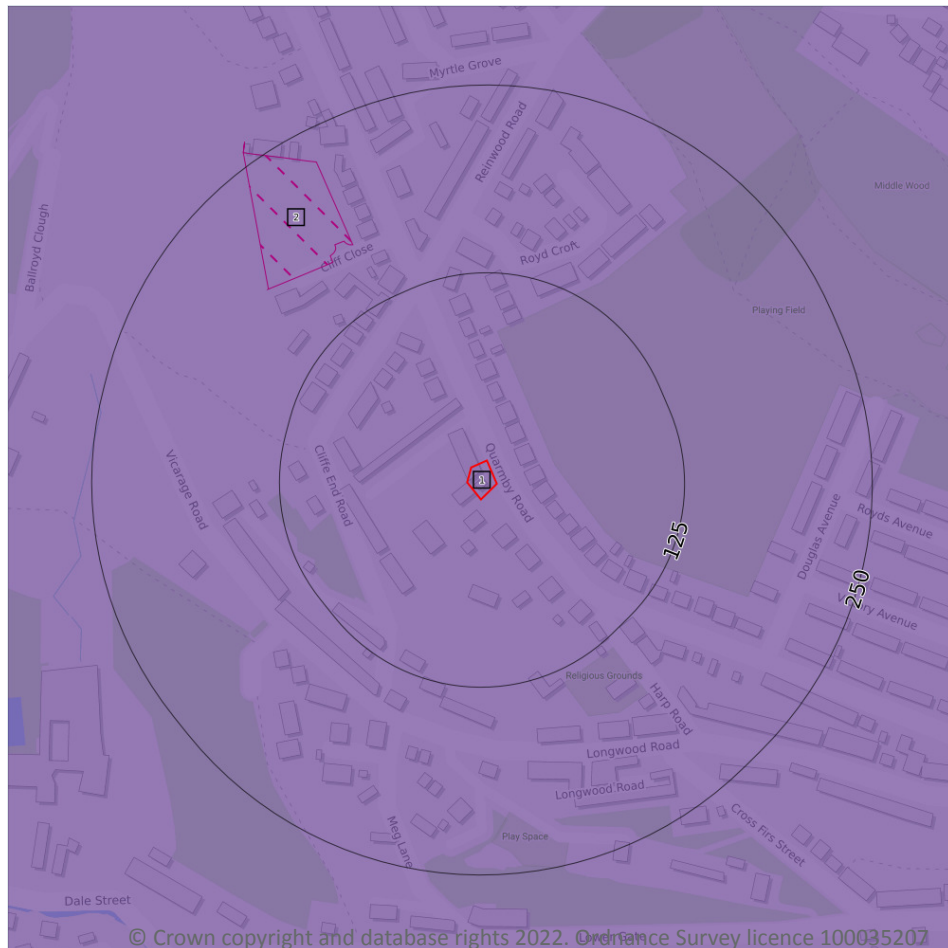
Records within 250m

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 76**

ID	Location	Classification	Description
1	On site	Urban	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m

1

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.

Features are displayed on the Agricultural designations map on **page 76**

ID	Location	Name	Classification	Other relevant legislation
2	165m NW	-	Section 4 Conclusive Open Country	-

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

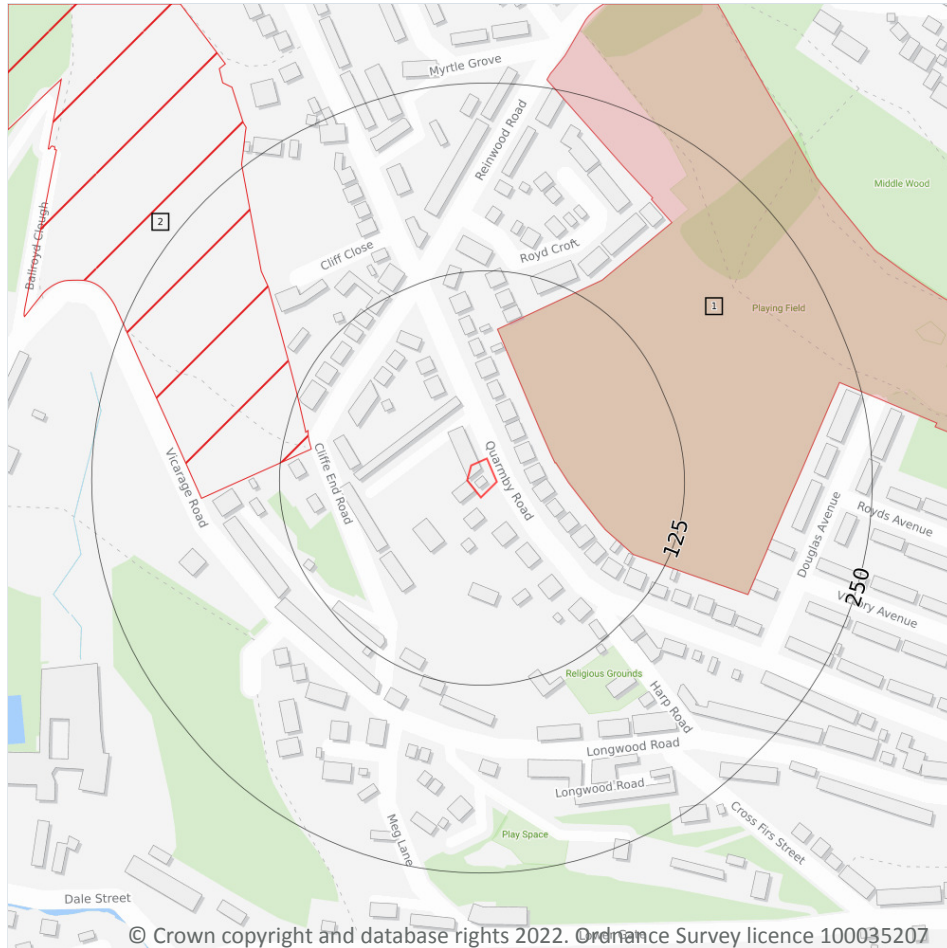
Records within 250m

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

1

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 78**

ID	Location	Main Habitat	Other habitats
1	40m NE	No main habitat but additional habitats present	Additional: 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

1

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.

Features are displayed on the Habitat designations map on **page 78**

ID	Location	Site reference	Identification confidence	Primary source	Secondary source	Tertiary source
2	106m W	BRITPITS ref: 91282, HLD_refs: EAHLD3505 9	Low	British Geological Survey BRITPITS database	Environment Agency Historic Landfill Sites	UK Perspectives Aerial Photography

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

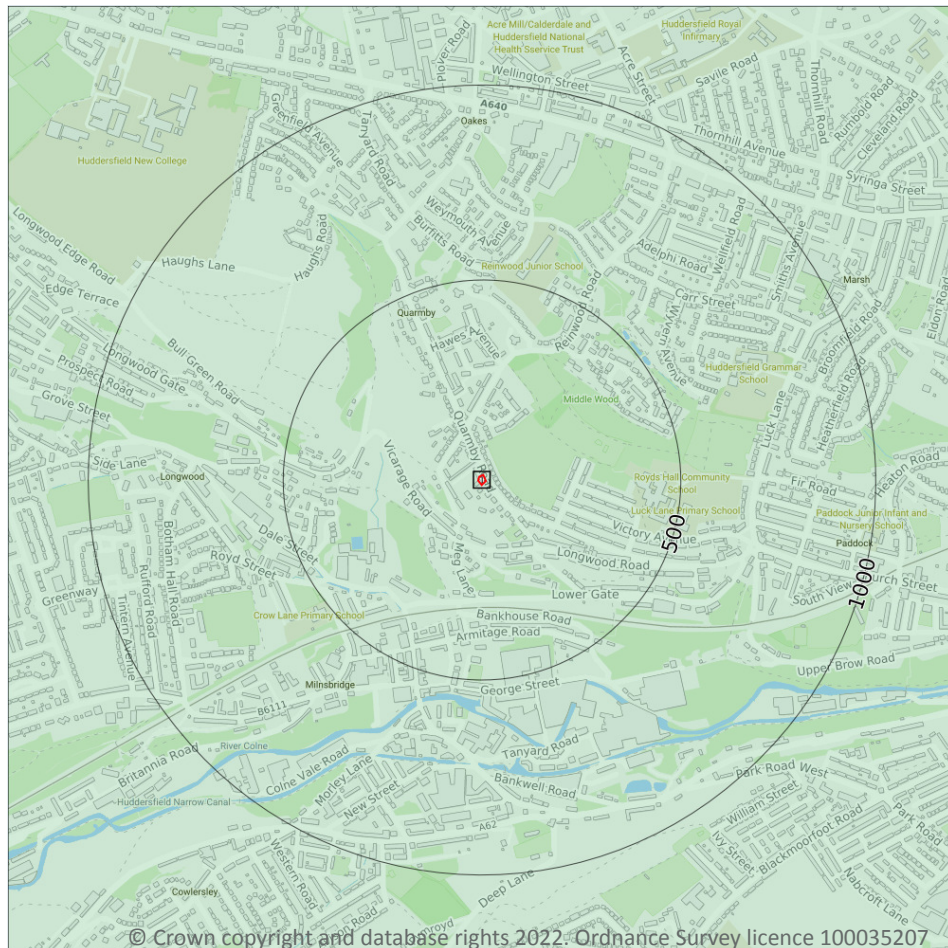
Records within 250m

0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

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

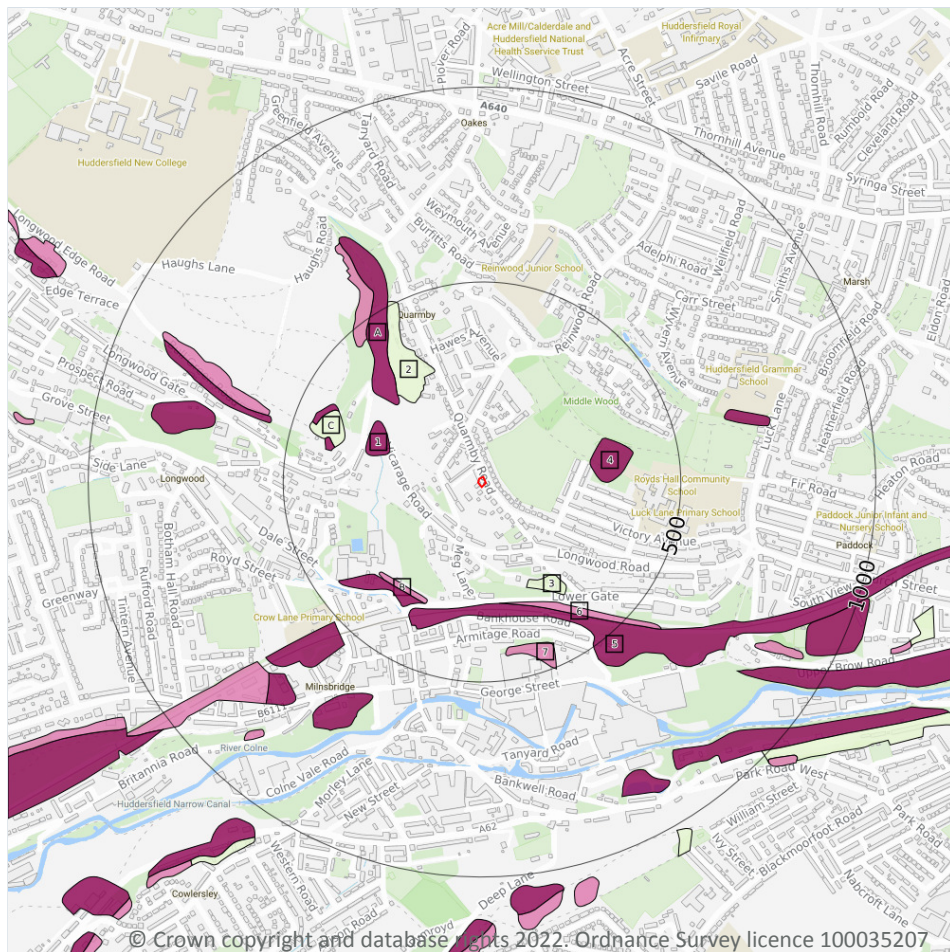
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 80**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SE11NW

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

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

14.2 Artificial and made ground (10k)

Records within 500m

14

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 81**

ID	Location	LEX Code	Description	Rock description
1	240m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	255m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	267m SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	272m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit



ID	Location	LEX Code	Description	Rock description
A	282m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	300m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	302m S	WGR-VOID	Worked Ground (Undivided)	Void
B	318m SW	WGR-VOID	Worked Ground (Undivided)	Void
B	332m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
C	360m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
C	379m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
C	400m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	416m S	WGR-VOID	Worked Ground (Undivided)	Void
A	454m NW	WGR-VOID	Worked Ground (Undivided)	Void

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 83**

ID	Location	LEX Code	Description	Rock description
1	322m SW	ALV-XCSV	Alluvium - Clay, Sand And Gravel	Clay, Sand And Gravel

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

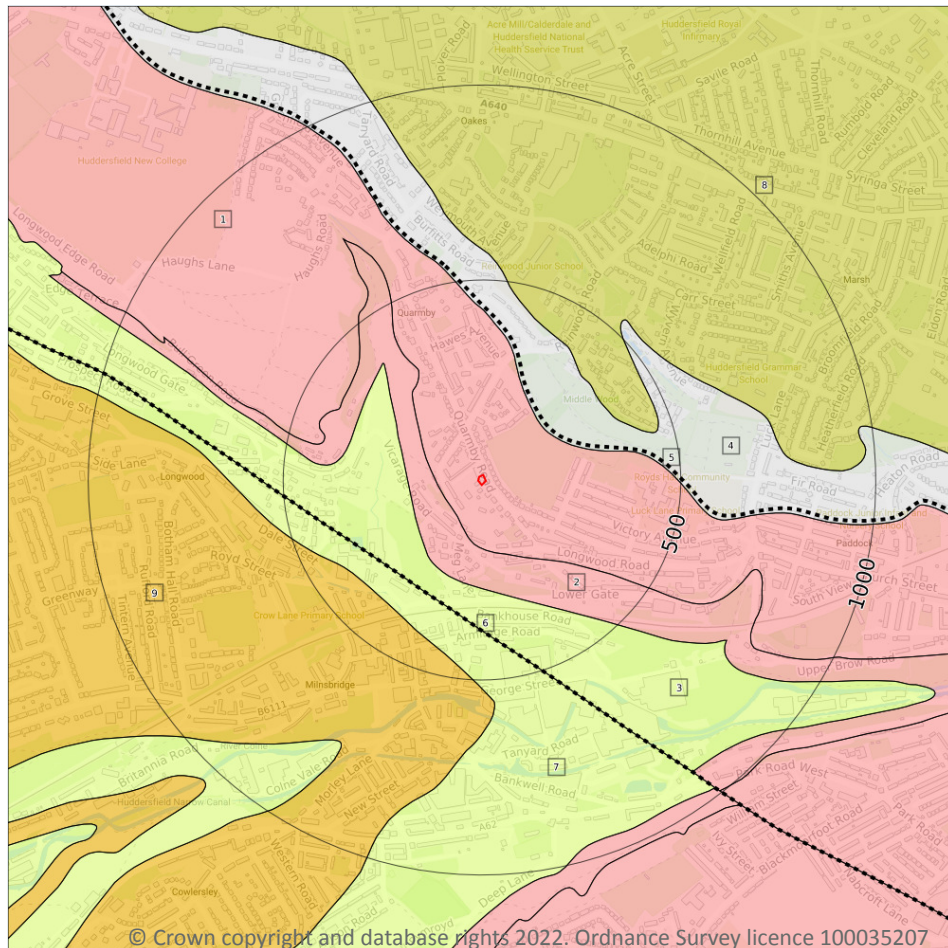
0

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

7

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 85**

ID	Location	LEX Code	Description	Rock age
1	On site	RR-SDST	Rough Rock - Sandstone	Yeadonian Sub-age
2	95m SW	RF-SDST	Rough Rock Flags - Sandstone	Yeadonian Sub-age
3	177m W	MG-MDSS	Millstone Grit Group [see Also Migr] - Mudstone, Siltstone And Sandstone	Namurian Age

ID	Location	LEX Code	Description	Rock age
4	196m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
7	308m SW	MG-MDSS	Millstone Grit Group [see Also Migr] - Mudstone, Siltstone And Sandstone	Namurian Age
8	354m NE	SBF-SDST	Soft Bed Flags - Sandstone	Langsettian Sub-age
9	387m SW	HDW-SDST	Huddersfield White Rock - Sandstone	Marsdenian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

2

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.

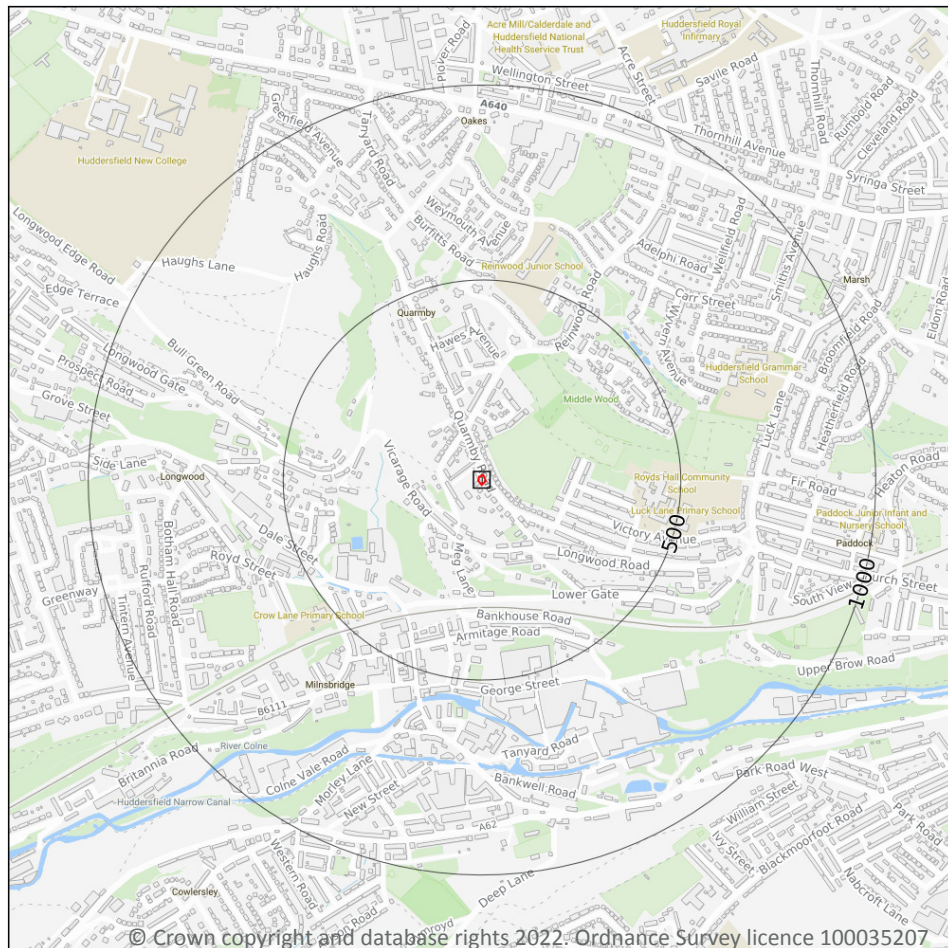
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 85**

ID	Location	Category	Description
5	207m NE	FOSSIL_HORIZON	Fossil horizon, marine band
6	308m SW	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.

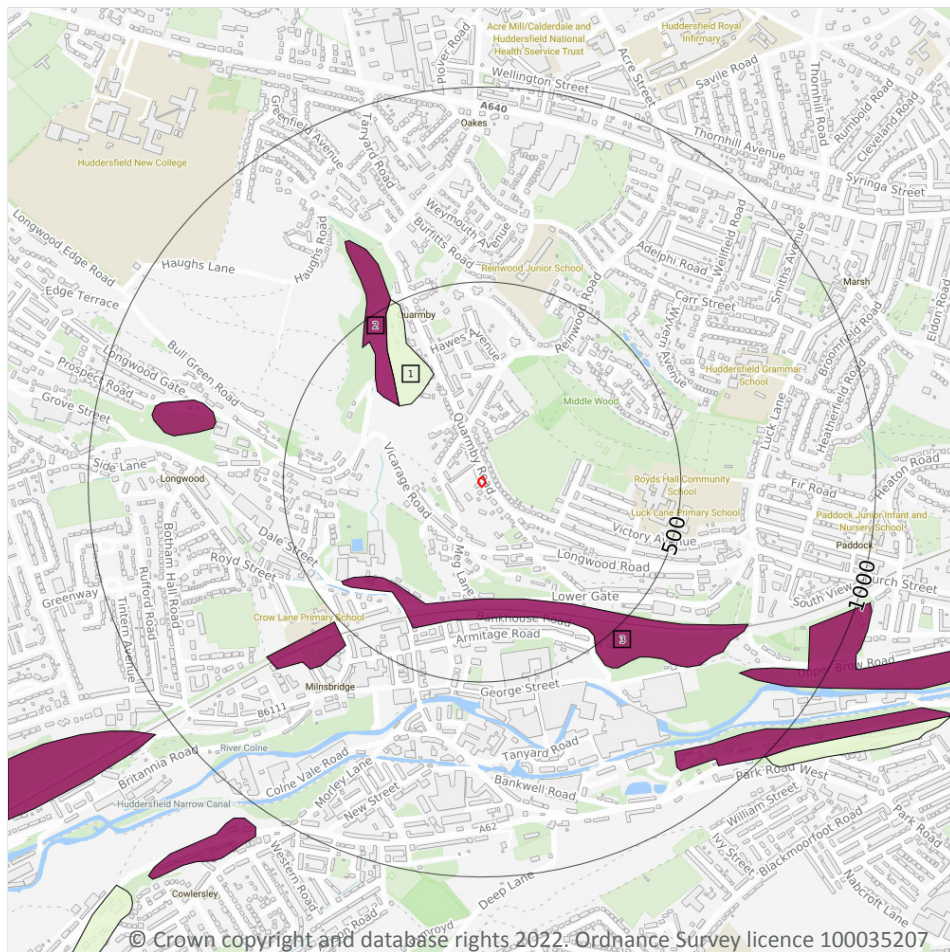
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 87**

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

3

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 88**

ID	Location	LEX Code	Description	Rock description
1	259m NW	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
2	278m NW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	287m S	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



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 90**

ID	Location	LEX Code	Description	Rock description
1	320m SW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

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

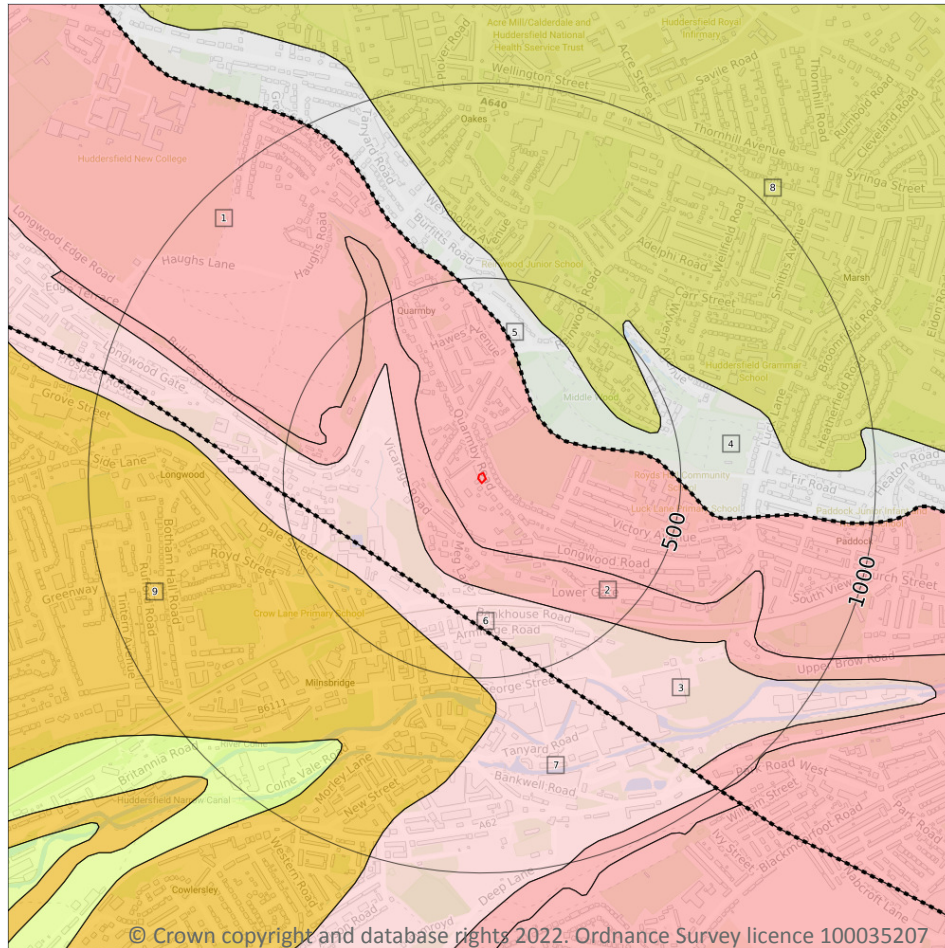
0

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

7

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 92**

ID	Location	LEX Code	Description	Rock age
1	On site	RR-SDST	ROUGH ROCK - SANDSTONE	NAMURIAN
2	94m SW	RF-SDST	ROUGH ROCK FLAGS - SANDSTONE	NAMURIAN
3	178m W	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN

ID	Location	LEX Code	Description	Rock age
4	200m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	308m SW	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
8	355m NE	SBF-SDST	SOFT BED FLAGS - SANDSTONE	WESTPHALIAN
9	390m SW	HDW-SDST	HUDDERSFIELD WHITE ROCK - SANDSTONE	NAMURIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1
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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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	2
----------------------------	----------

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 92**

ID	Location	Category	Description
5	200m NE	FOSSIL_HORIZON	Marine band
6	308m SW	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.

16 Boreholes

16.1 BGS Boreholes

Records within 250m

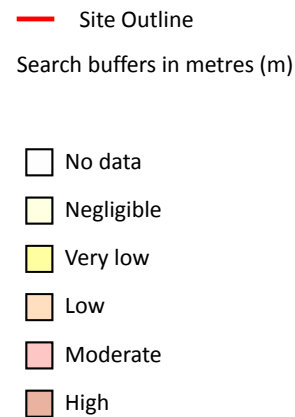
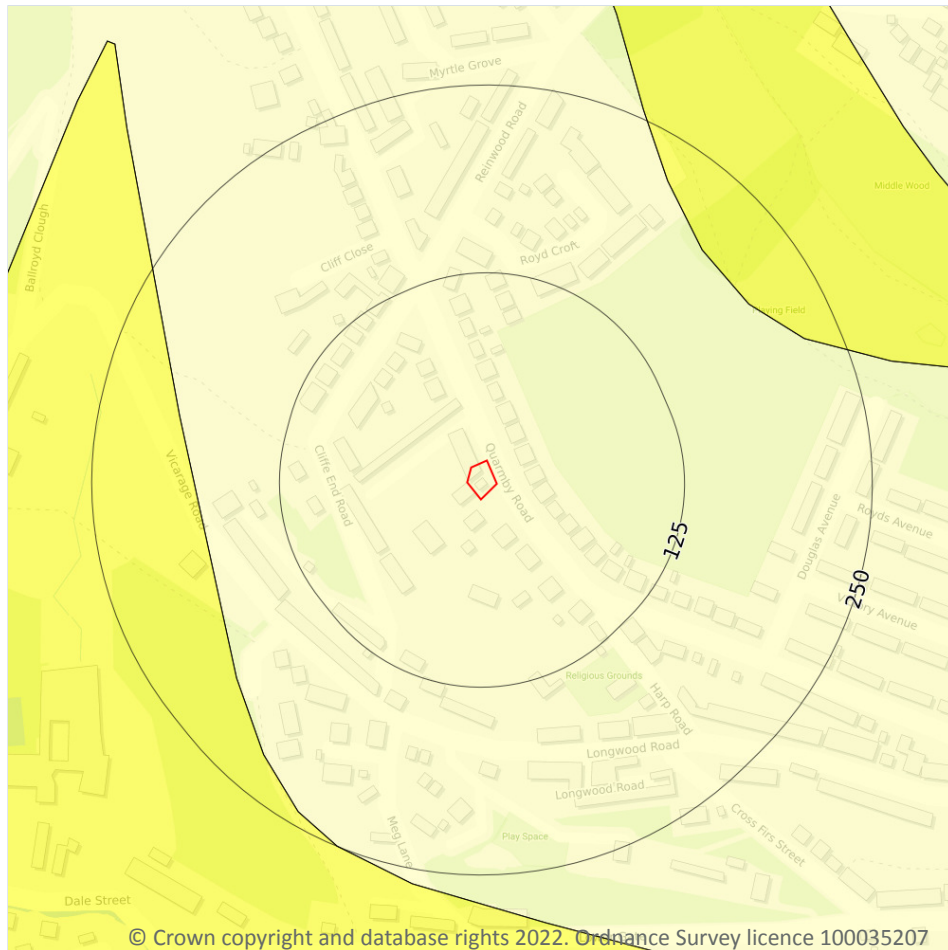
0

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

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

1

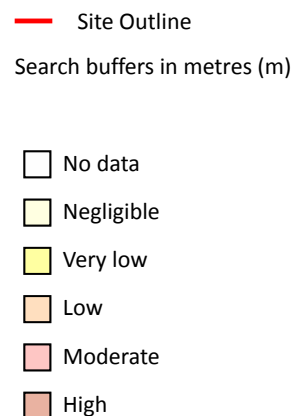
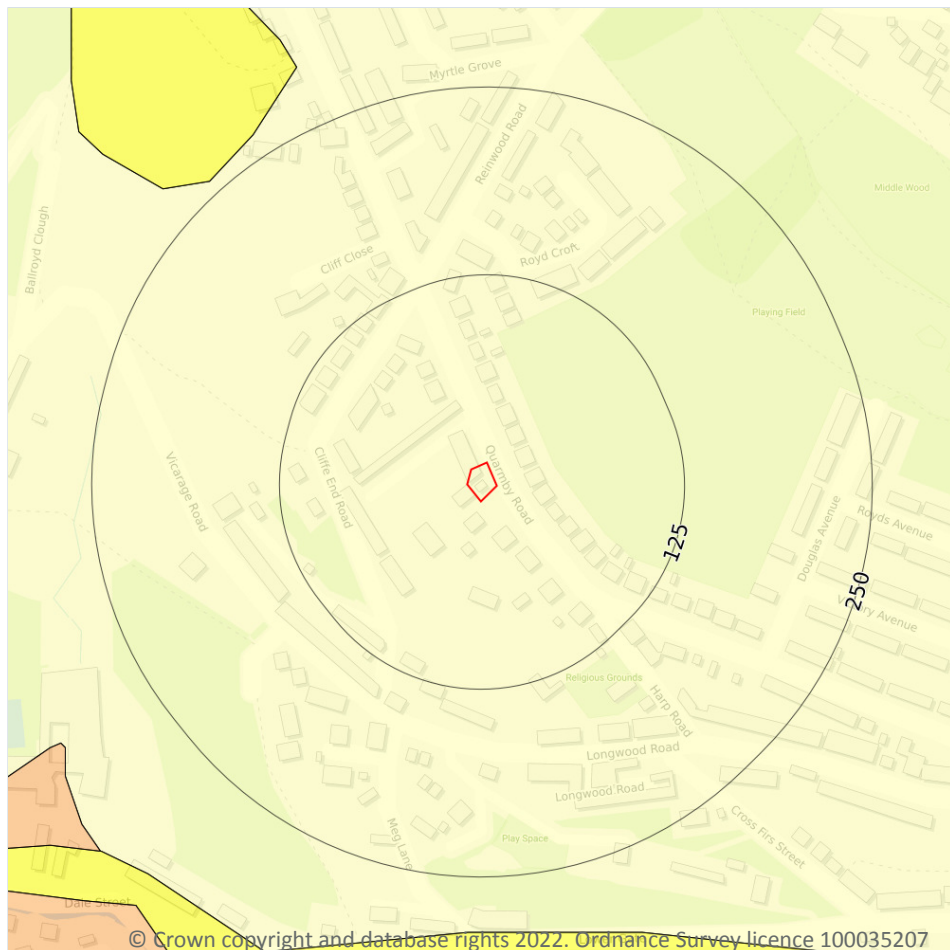
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 95**

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m

1

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

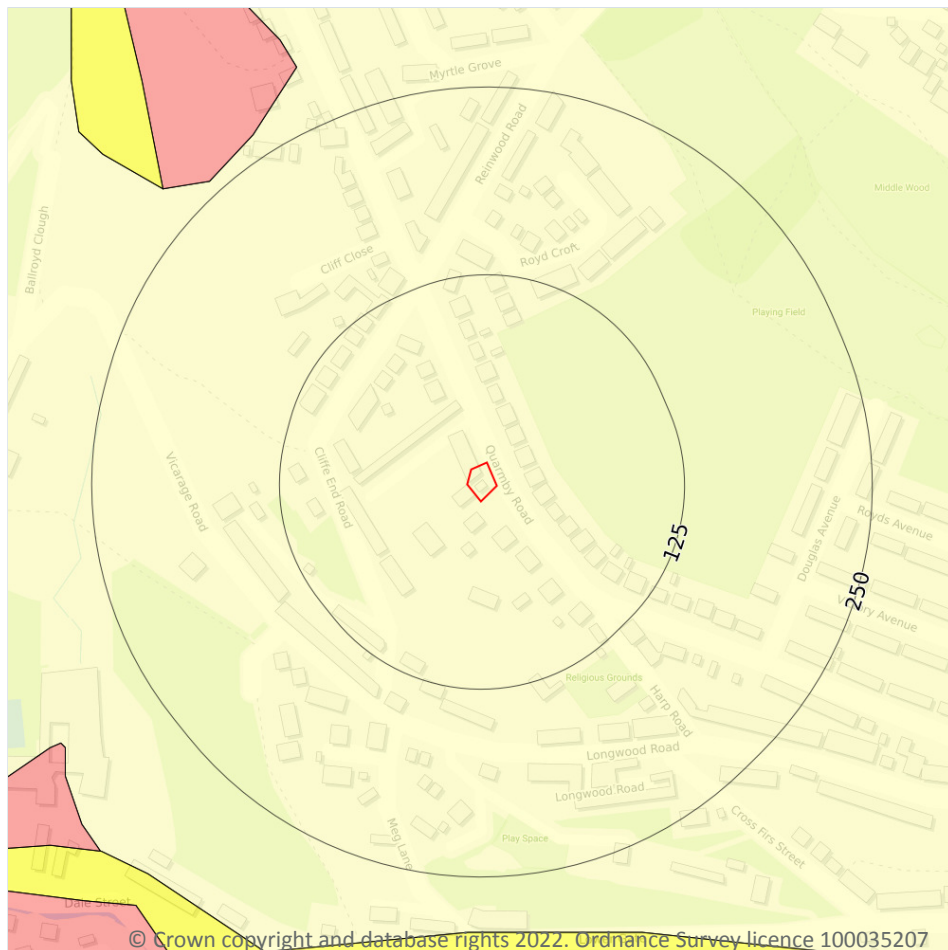
Features are displayed on the Natural ground subsidence - Running sands map on **page 96**

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.

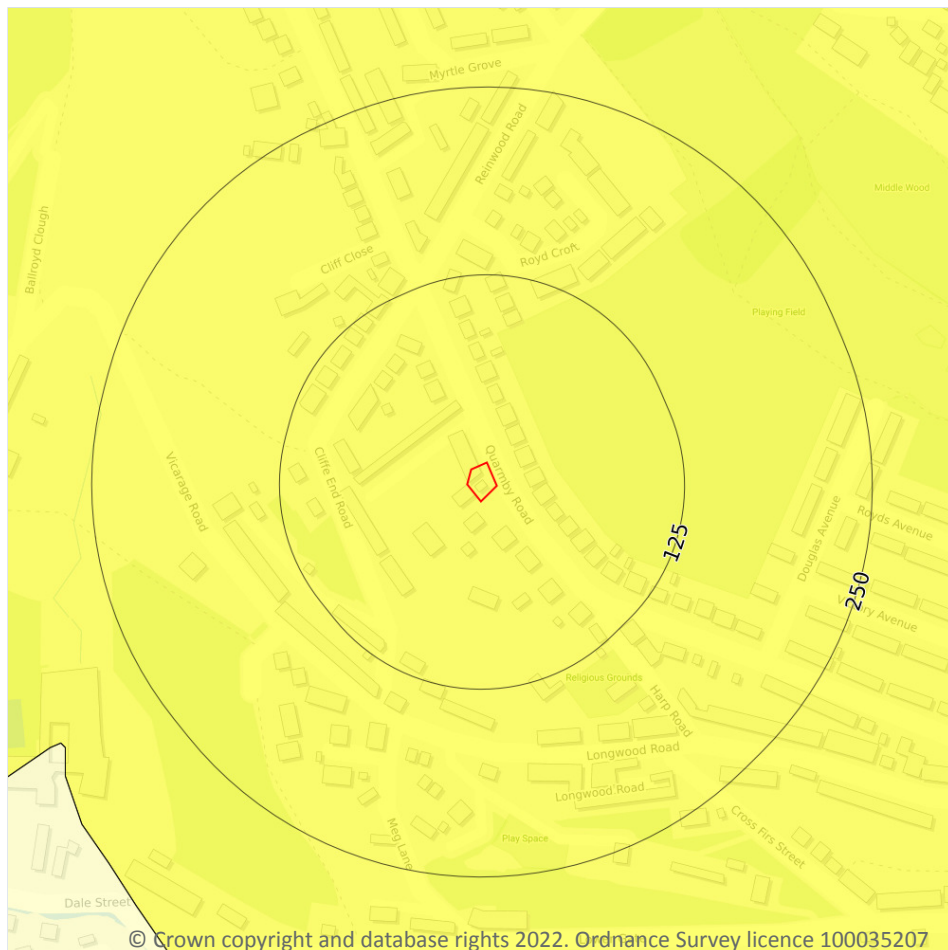
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 97**

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.

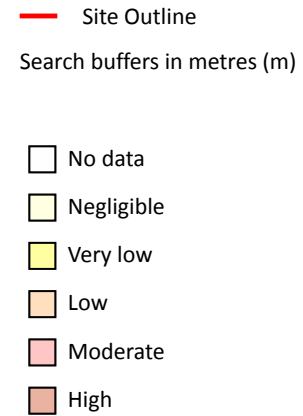
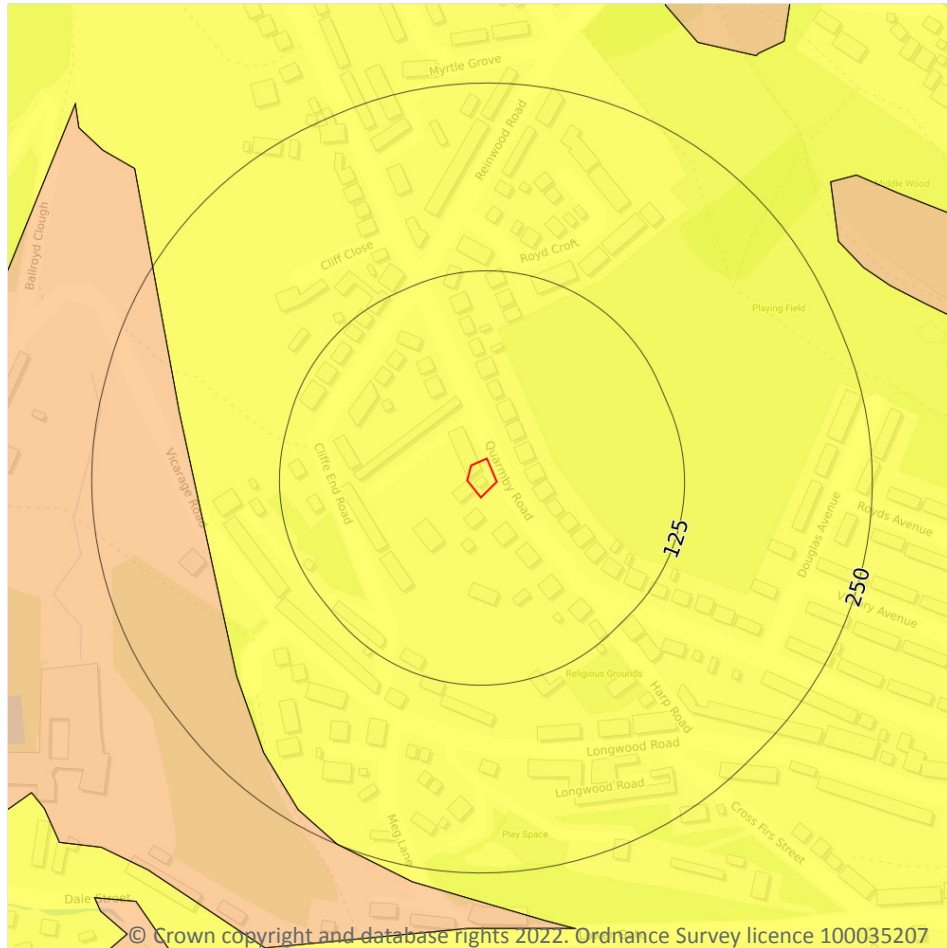
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 98**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

1

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

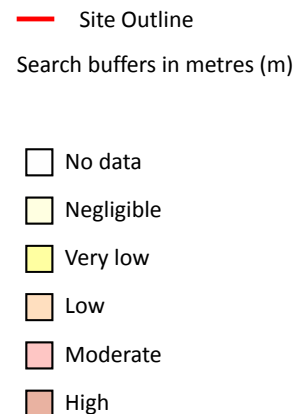
Features are displayed on the Natural ground subsidence - Landslides map on **page 99**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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.

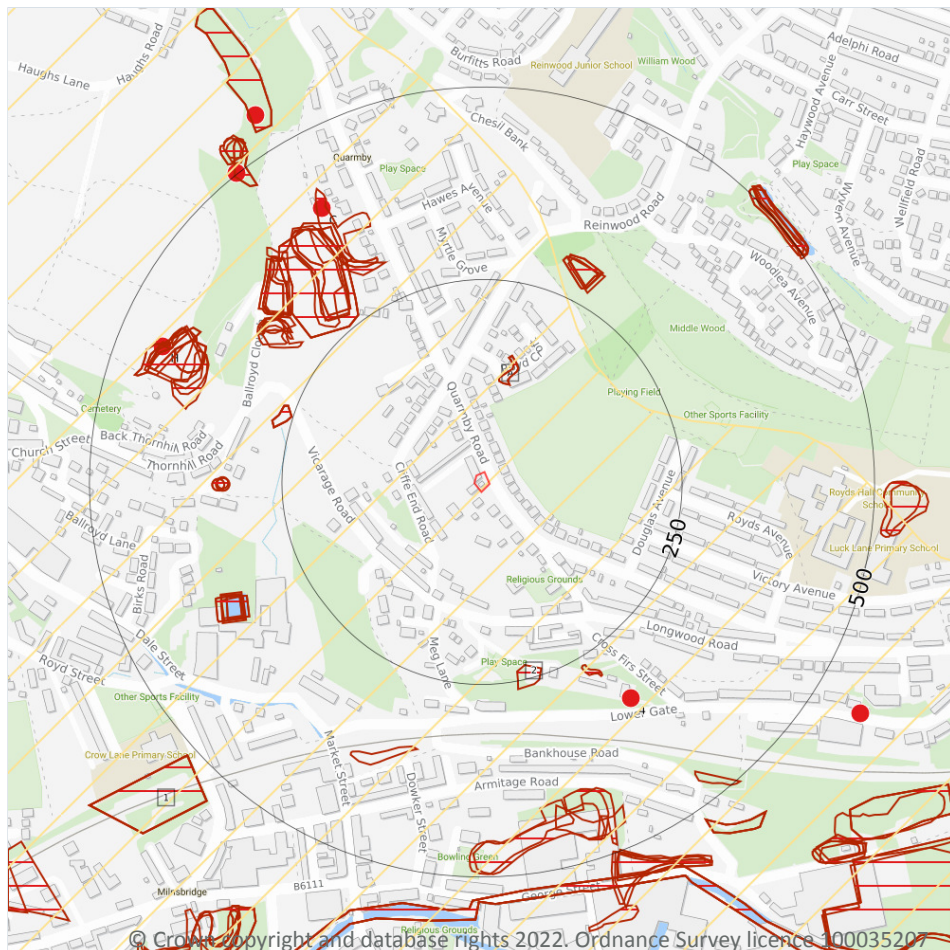
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 100**

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

3

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 102**

ID	Location	Details	Description
4	330m SE	Name: Firs Address: Paddock, 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	401m NW	Name: Quarmby Clough Address: Cliff End, 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
H	440m W	Name: Nab End Quarry Address: Longwood, 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

3

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 102**

ID	Location	Land Use	Year of mapping	Mapping scale
A	118m N	Unspecified Ground Workings	1948	1:10560
A	118m N	Unspecified Ground Workings	1905	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
2	232m S	Unspecified Pit	1890	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m **0**

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

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m **0**

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m **1**

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 102**

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m**0**

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site**0**

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site**0**

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

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.

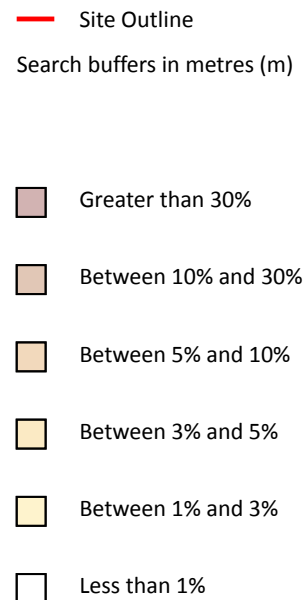
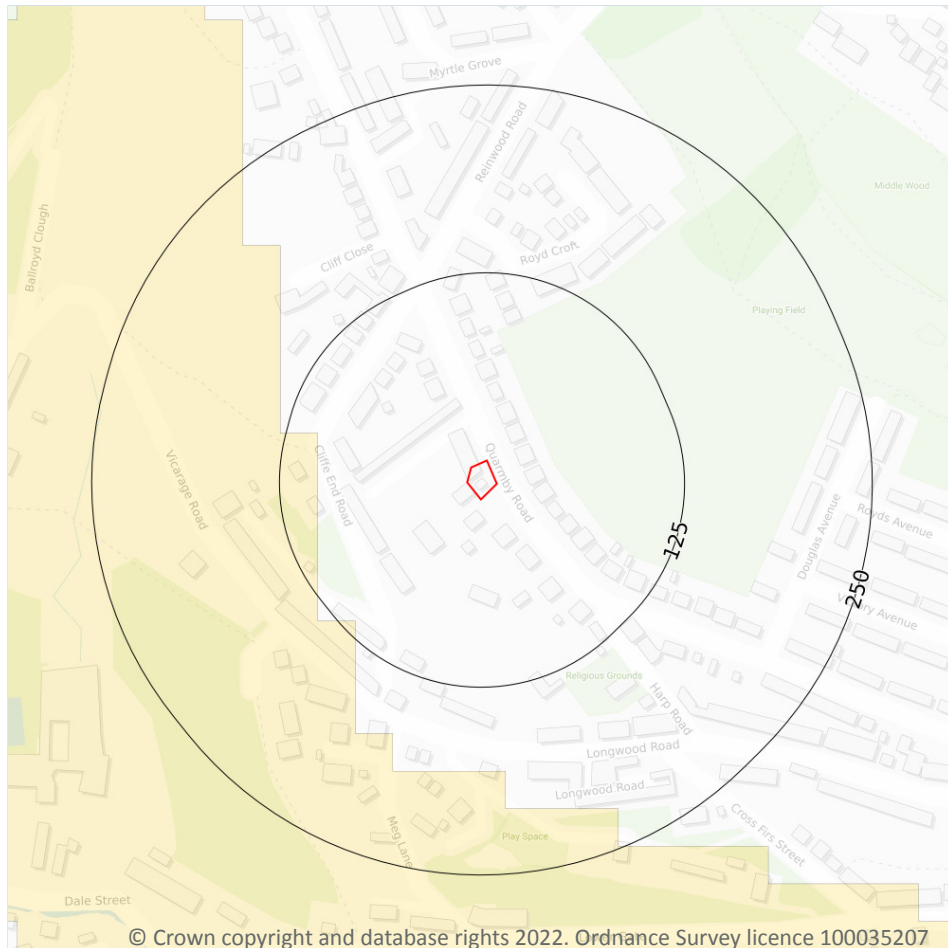
18.13 Clay mining

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



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 107**

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 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	25 - 35 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
31m SE	25 - 35 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

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>.

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APPENDIX 4
HISTORICAL ORDANACE SURVEY
MAPS

Site Details:

71, QUARMBY ROAD,
QUARMBY, HUDDERSFIELD,
HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1854

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1851
Revised N/A
Edition 1854
Copyright N/A
Levelled N/A

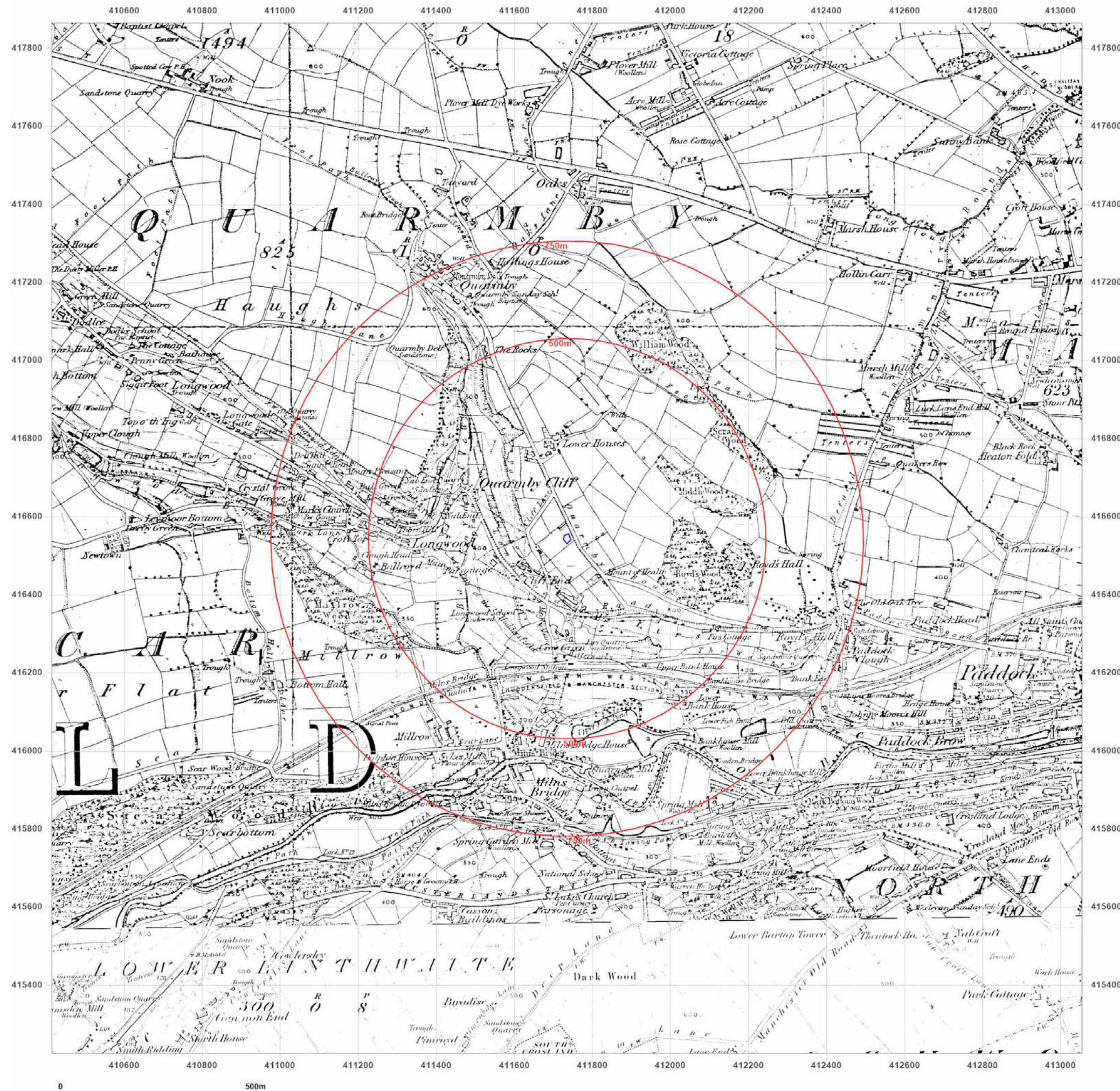


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Production date: 19 January 2022

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Site Details:

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QUARMBY, HUDDERSFIELD,
HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1888-1891

Scale: 1:10,560

Printed at: 1:10,560



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

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

Surveyed 1891
Revised 1891
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HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1893

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1893
Revised 1893
Edition N/A
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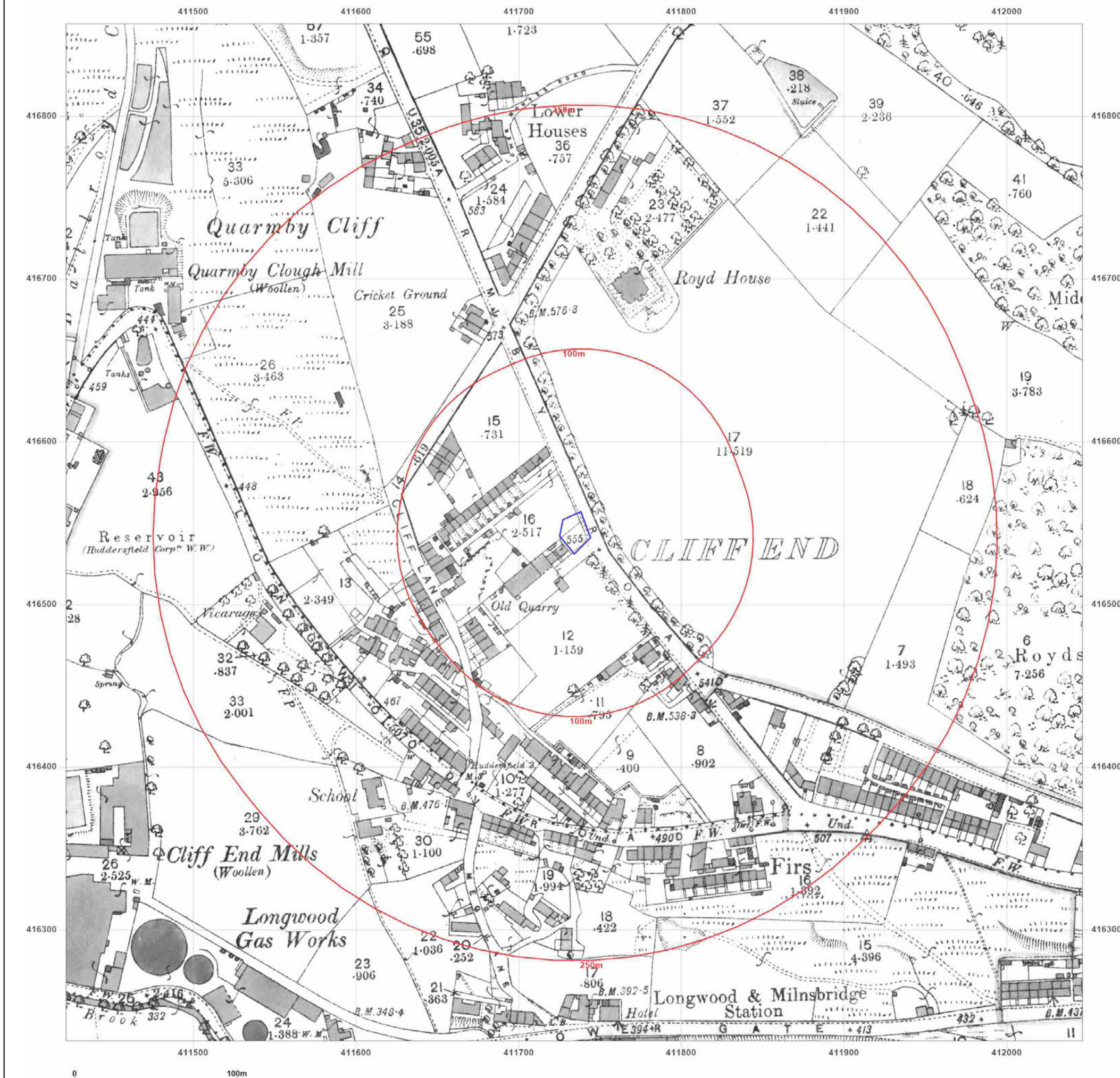


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HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1905

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1890
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Surveyed 1889
Revised 1905
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Revised 1905
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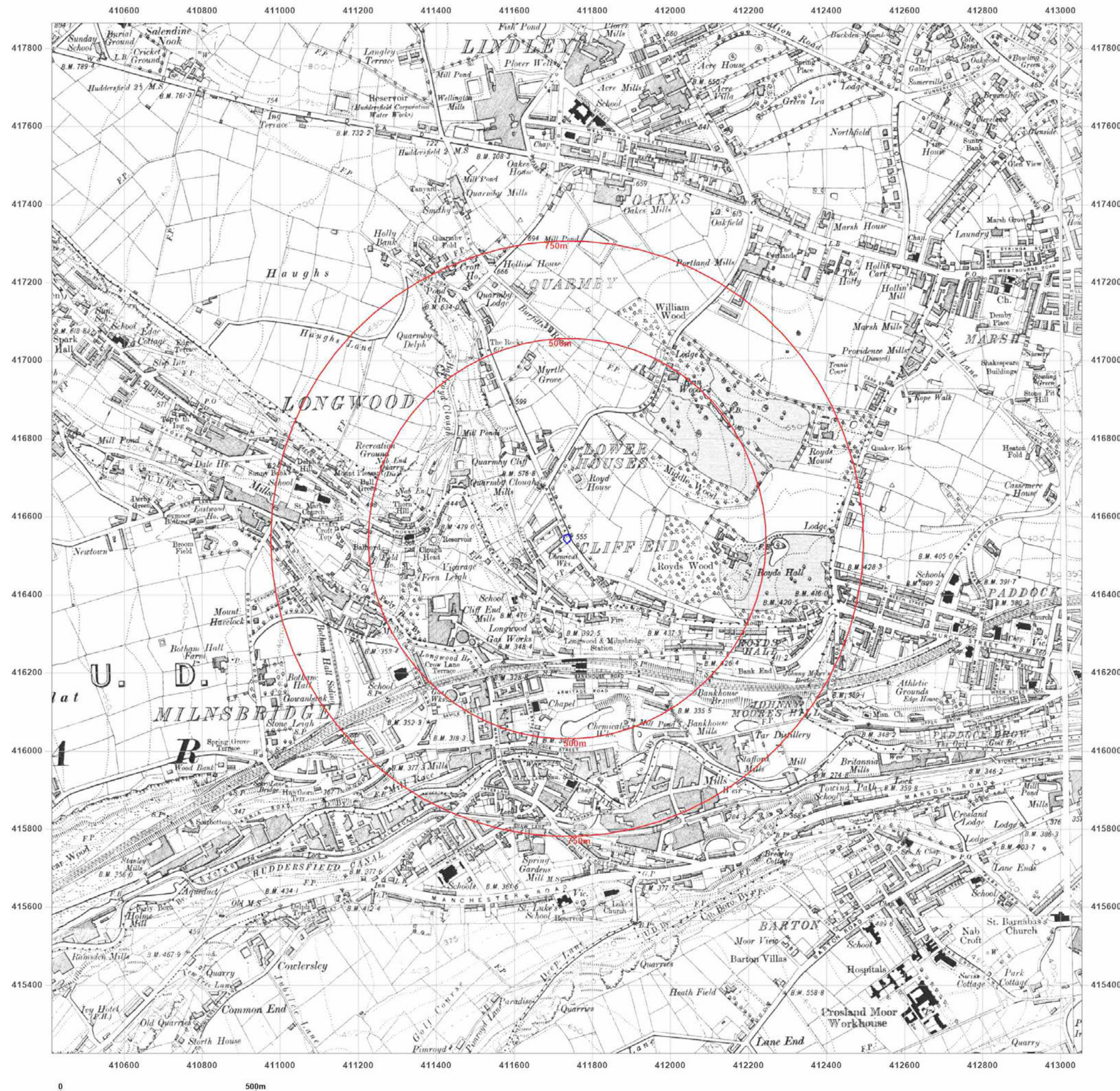


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QUARMBY, HUDDERSFIELD,
HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1907

Scale: 1:2,500

Printed at: 1:2,500



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HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1918

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1918
Revised 1918
Edition N/A
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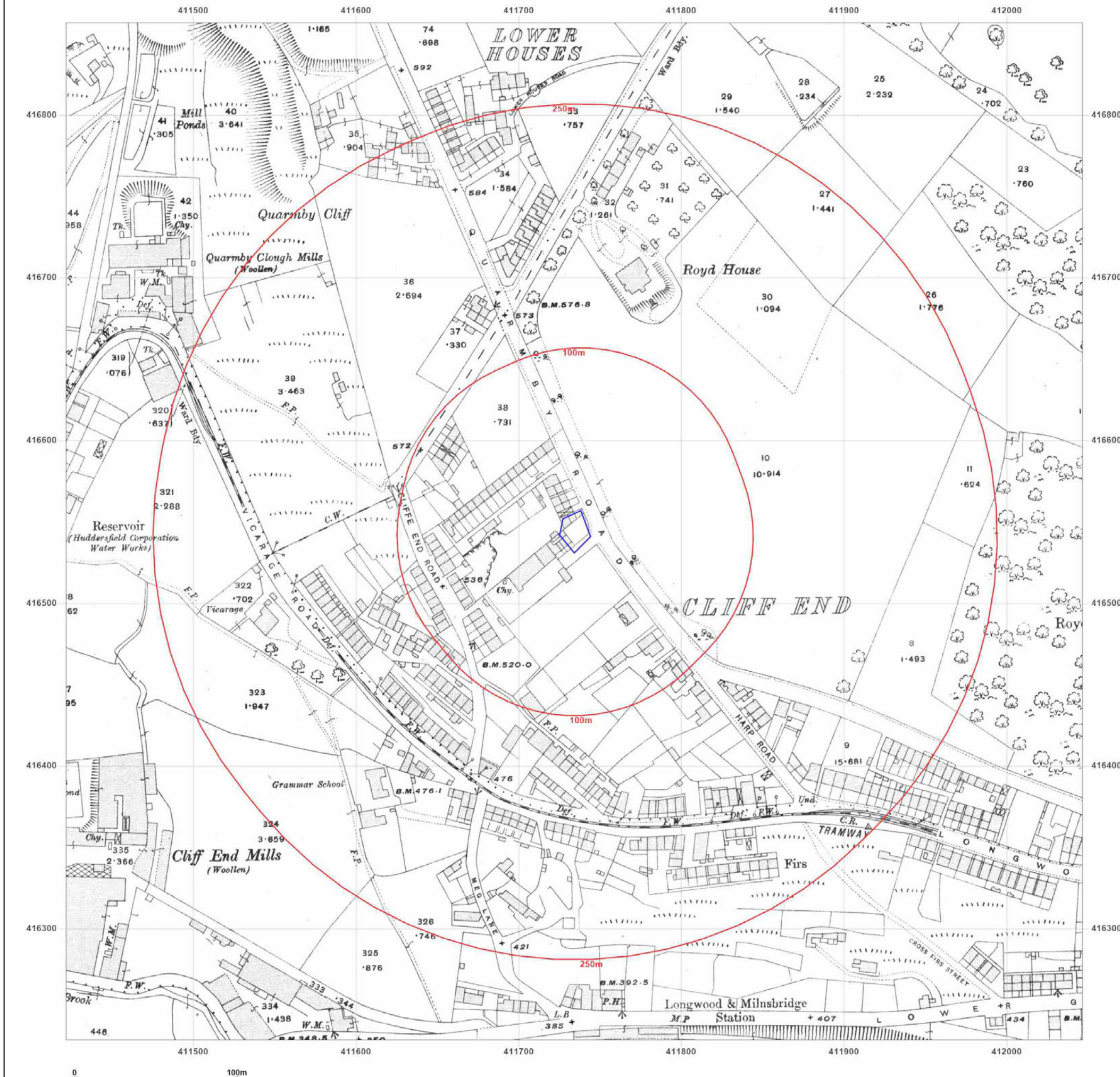


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Site Details:

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QUARMBY, HUDDERSFIELD,
HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1930-1931

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1849
Revised 1930
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Surveyed 1851
Revised 1930
Edition 1930
Copyright N/A
Levelled 1931

Surveyed 1851
Revised 1930
Edition N/A
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Revised 1930
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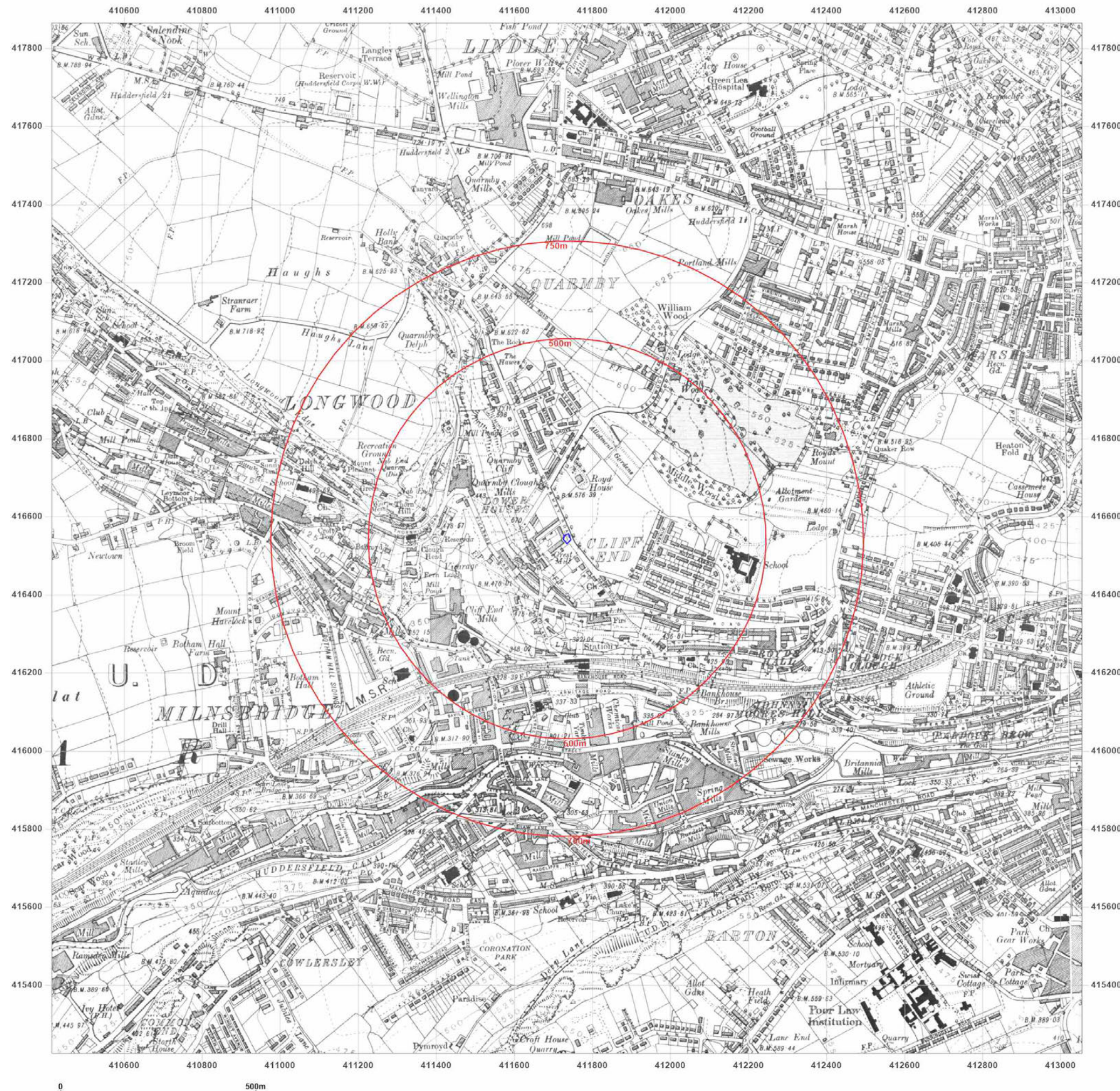


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HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1932

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1932
Revised 1932
Edition N/A
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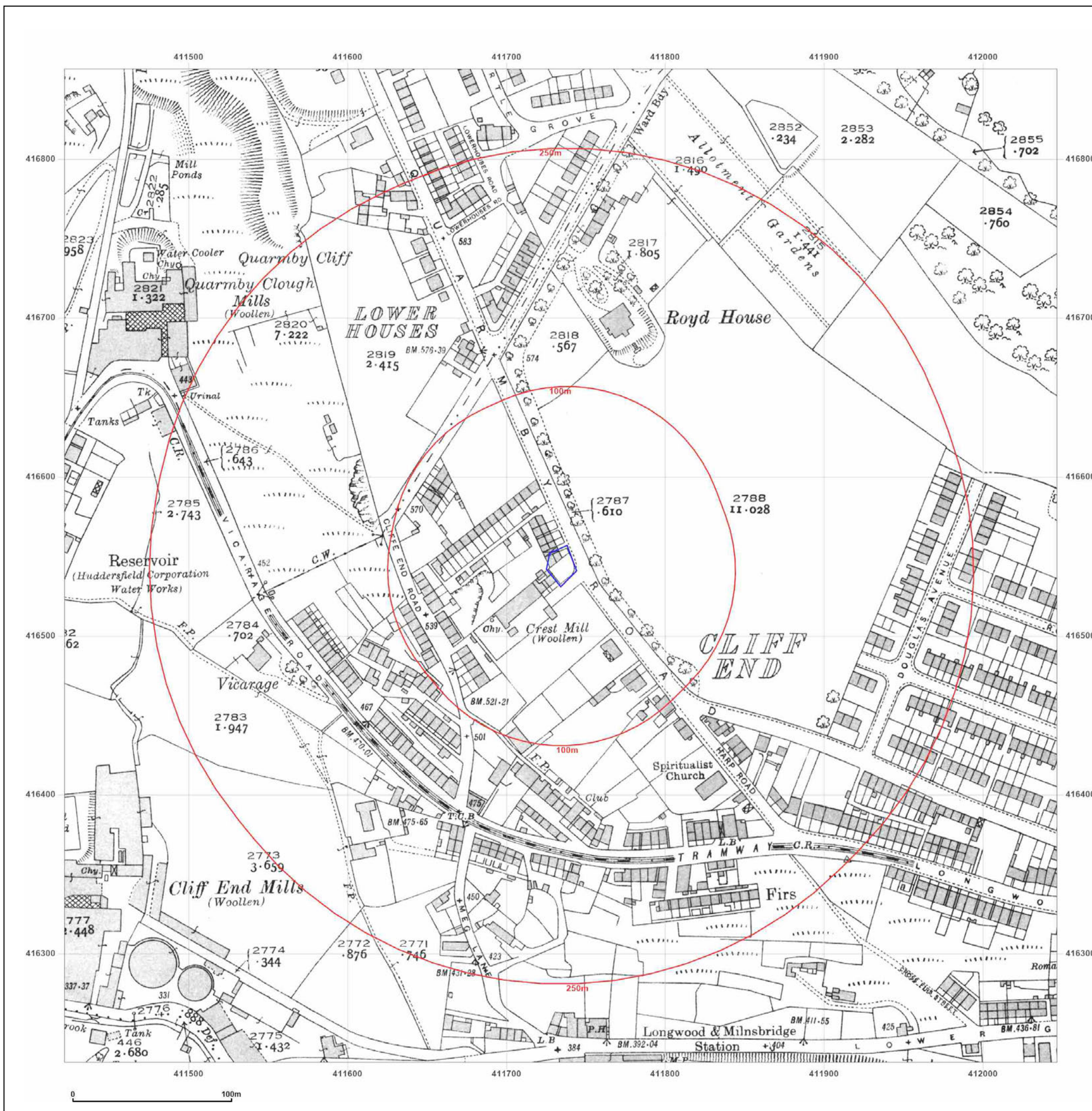


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QUARMBY, HUDDERSFIELD,
HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1849
Revised 1938
Edition 1938
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Surveyed 1851
Revised 1938
Edition 1938
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Levelled N/A

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Site Details:

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HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: County Series

Map date: 1948

Scale: 1:10,560

Printed at: 1:10,560



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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: Provisional

Map date: 1956

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1951
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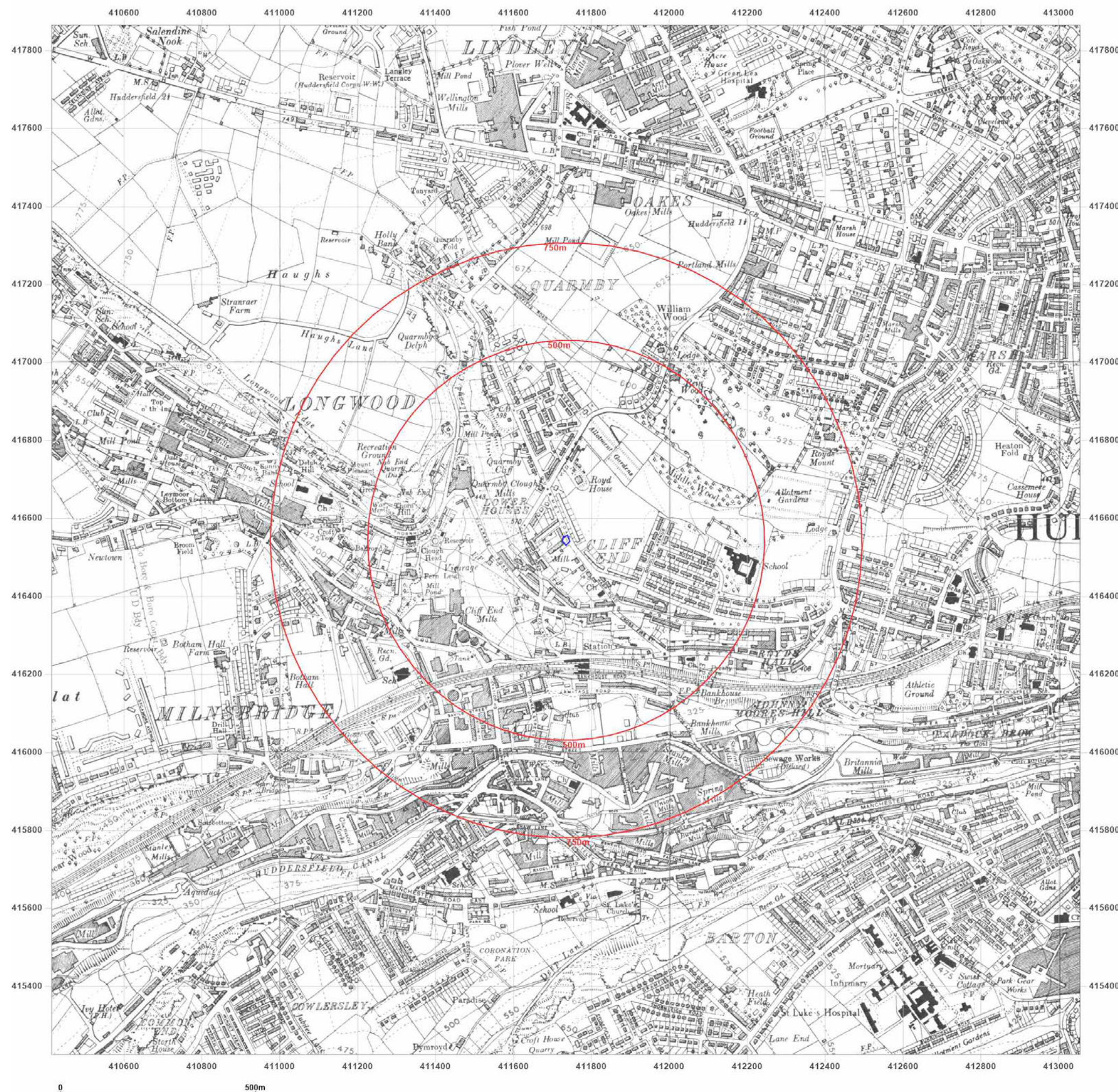


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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1961

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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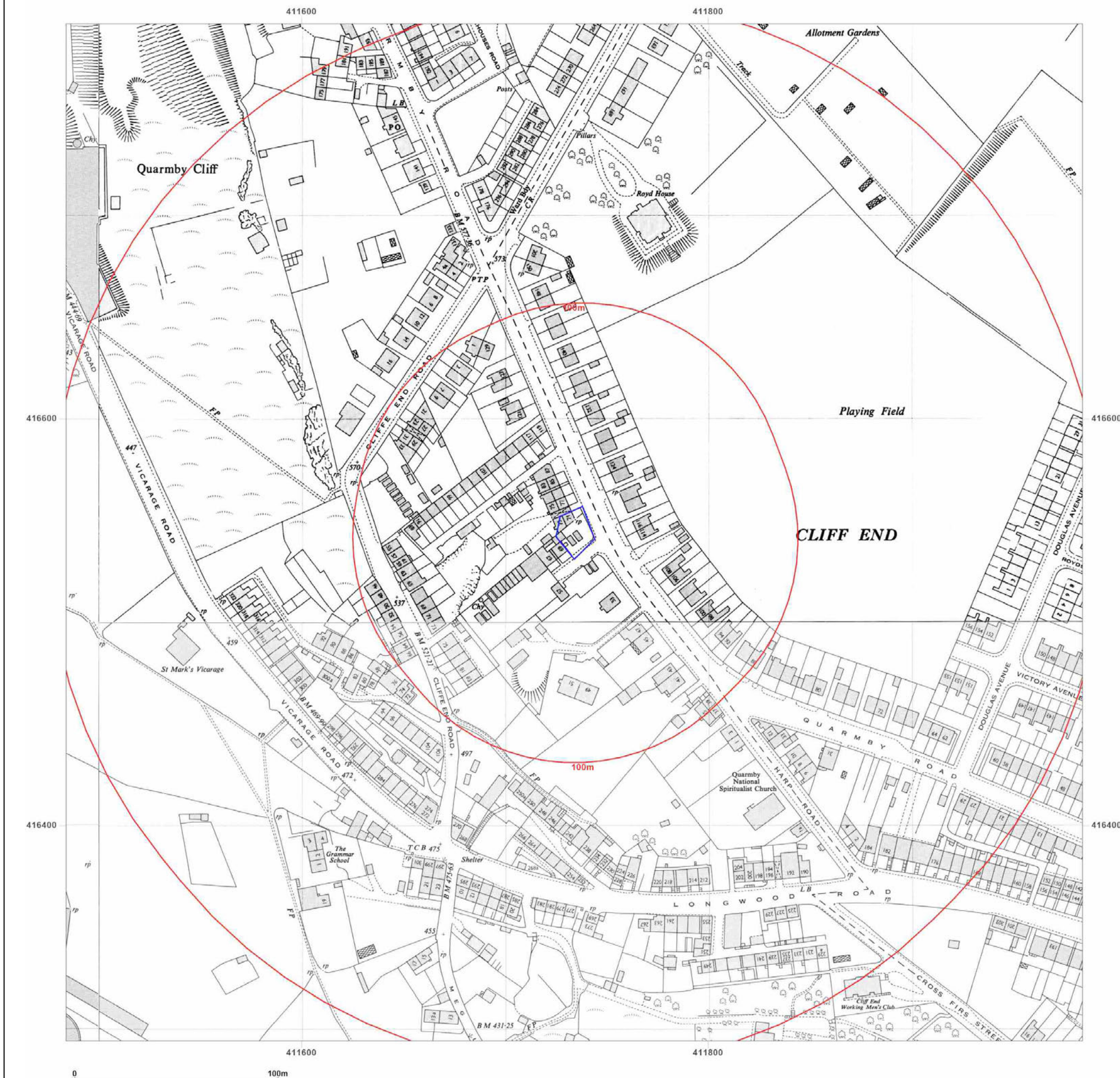


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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1962

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1961
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Edition N/A
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Levelled 1959

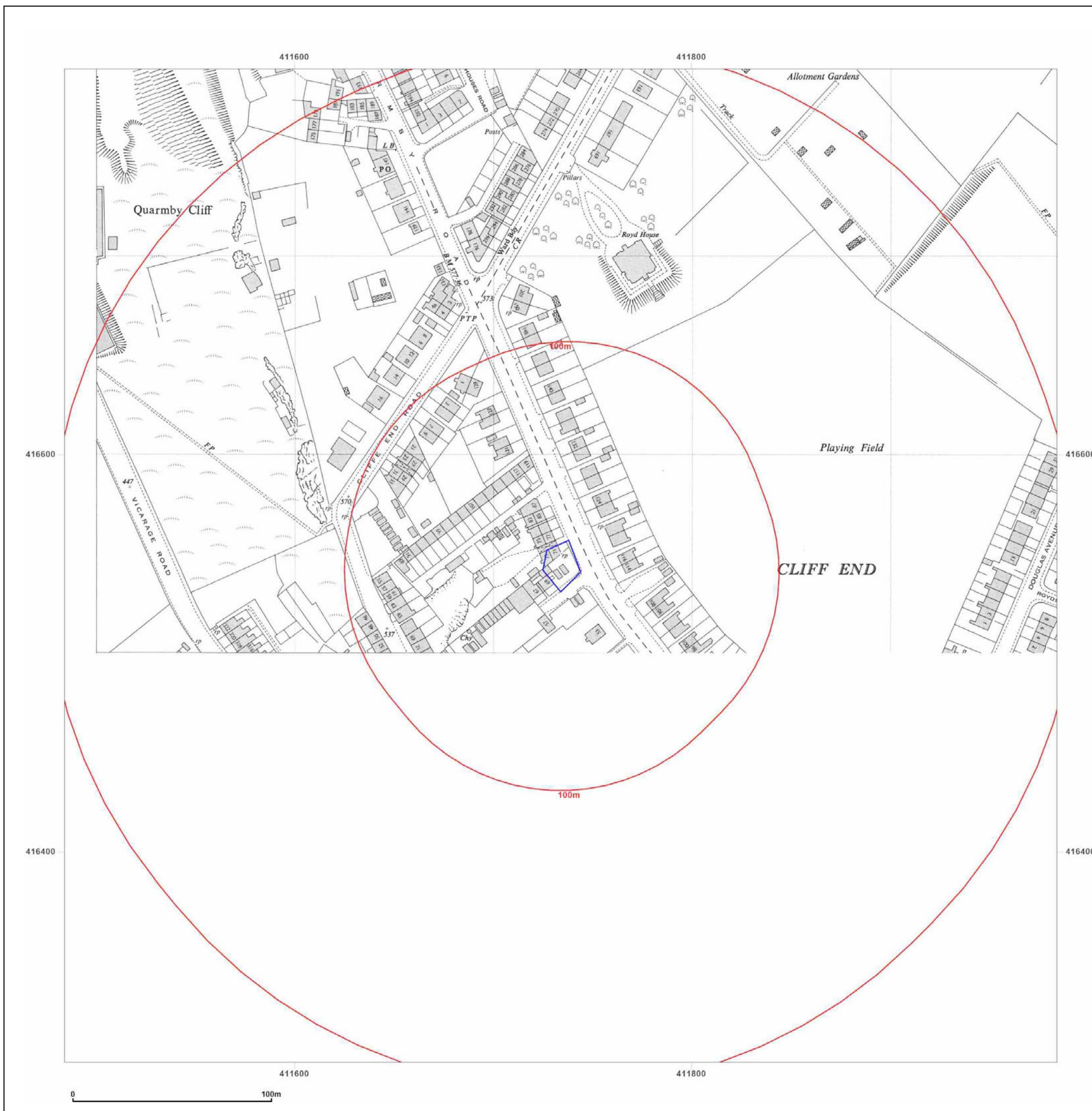


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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1961-1962

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1961
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Edition 1962
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Surveyed 1960
Revised 1960
Edition 1961
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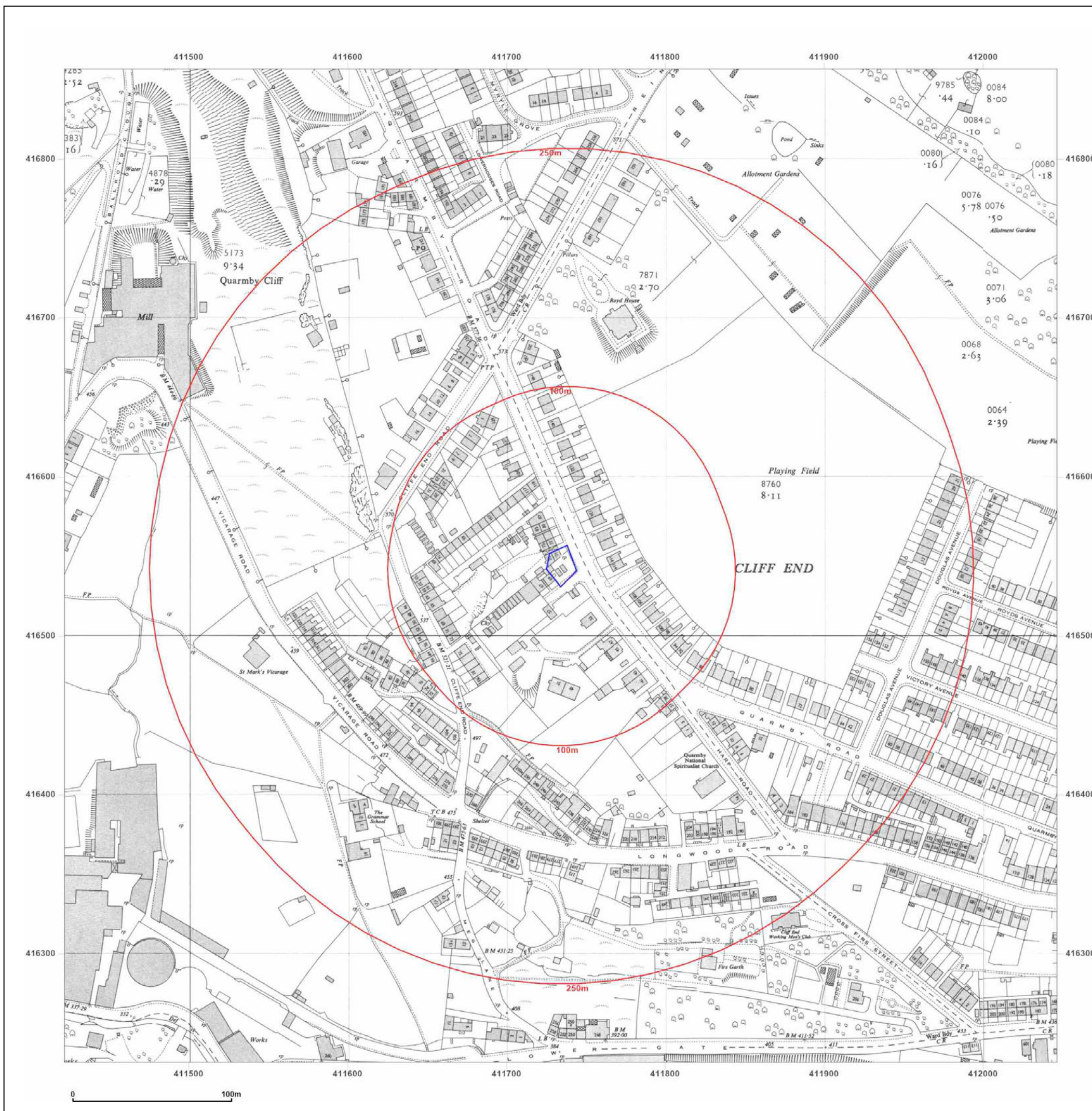


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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: Provisional

Map date: 1966

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1966
Revised 1966
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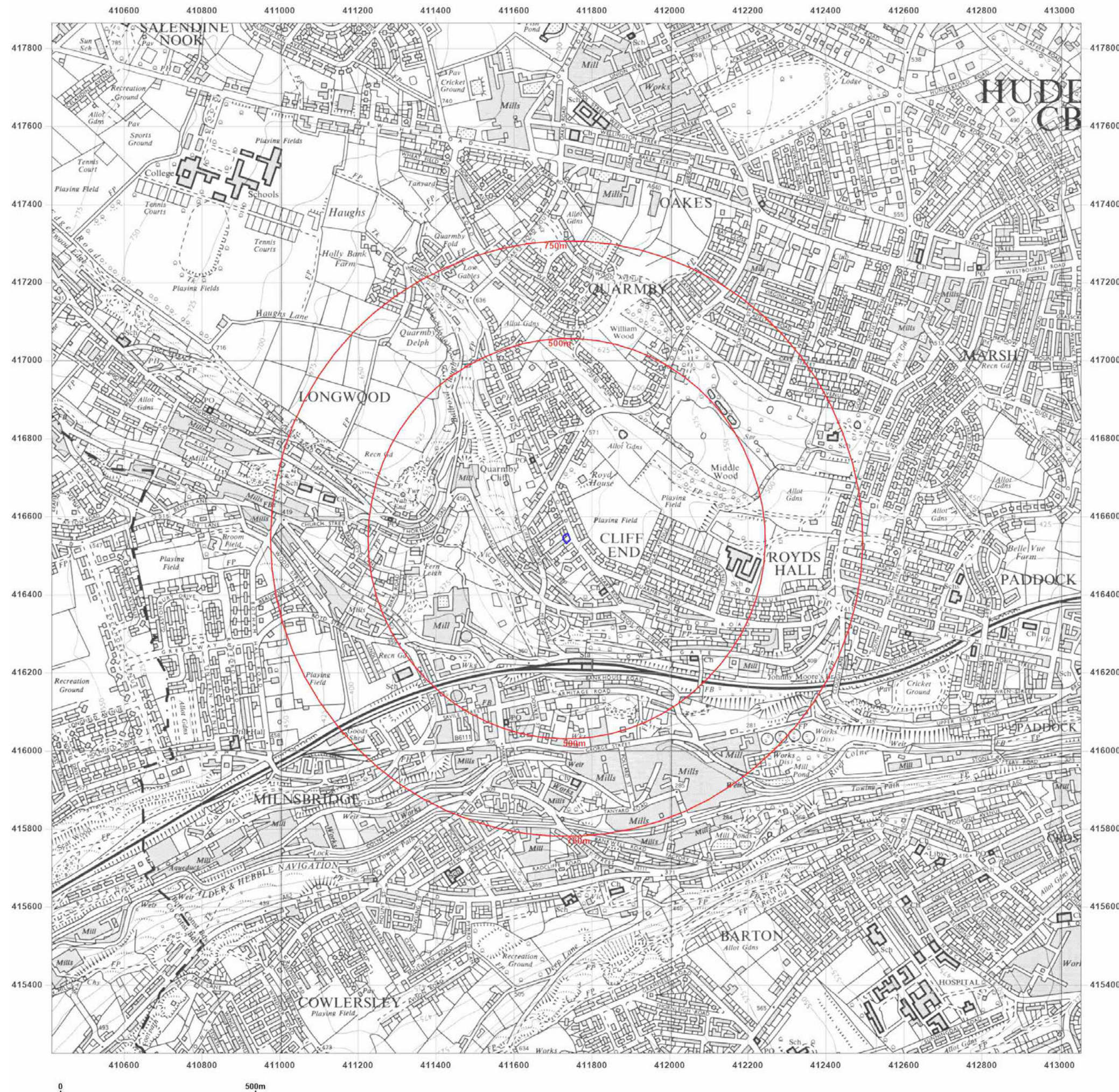


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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1975

Scale: 1:10,000

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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1975

Scale: 1:1,250

Printed at: 1:2,000



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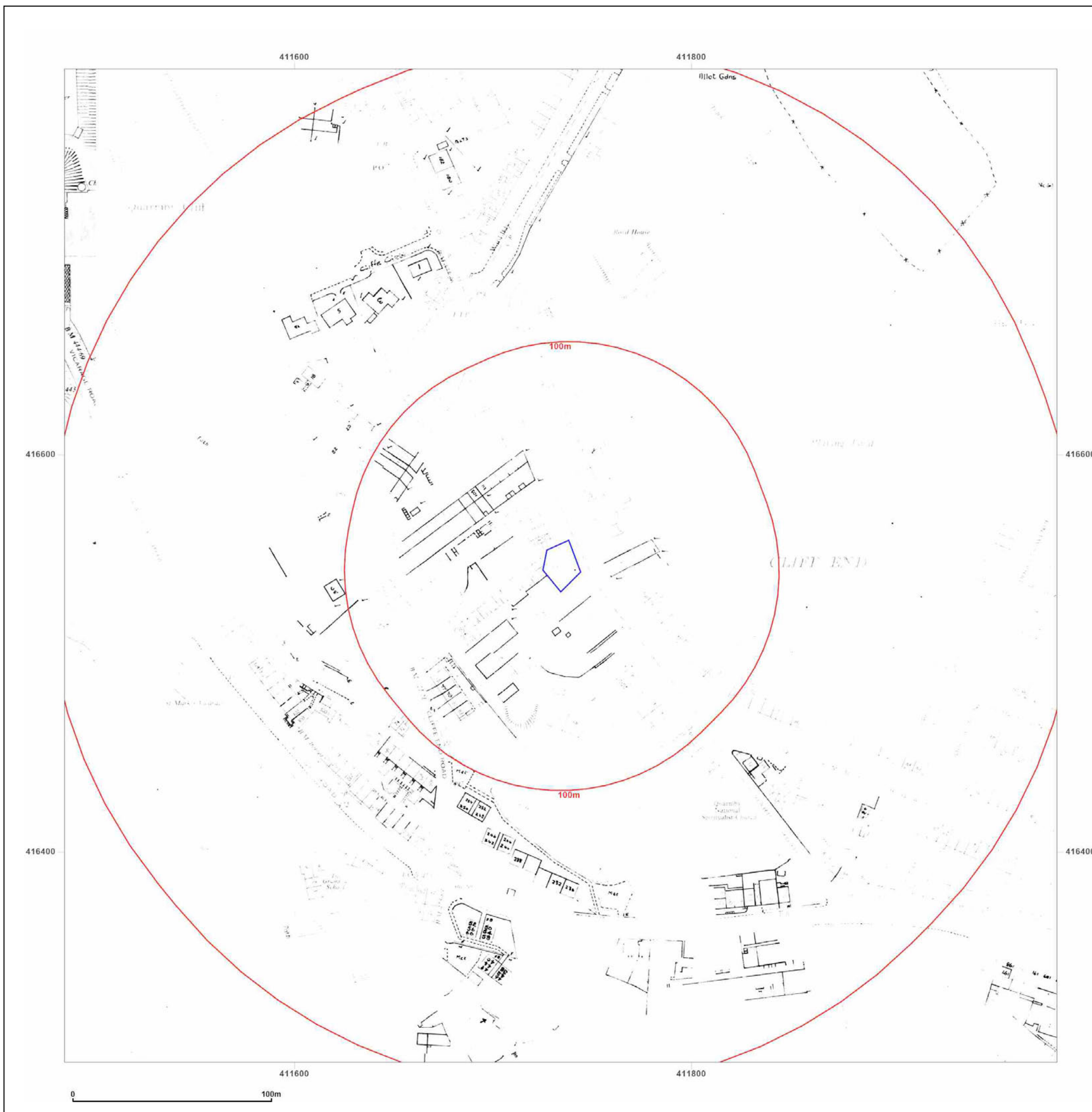


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Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1975

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Revised N/A
Edition N/A
Copyright 1975
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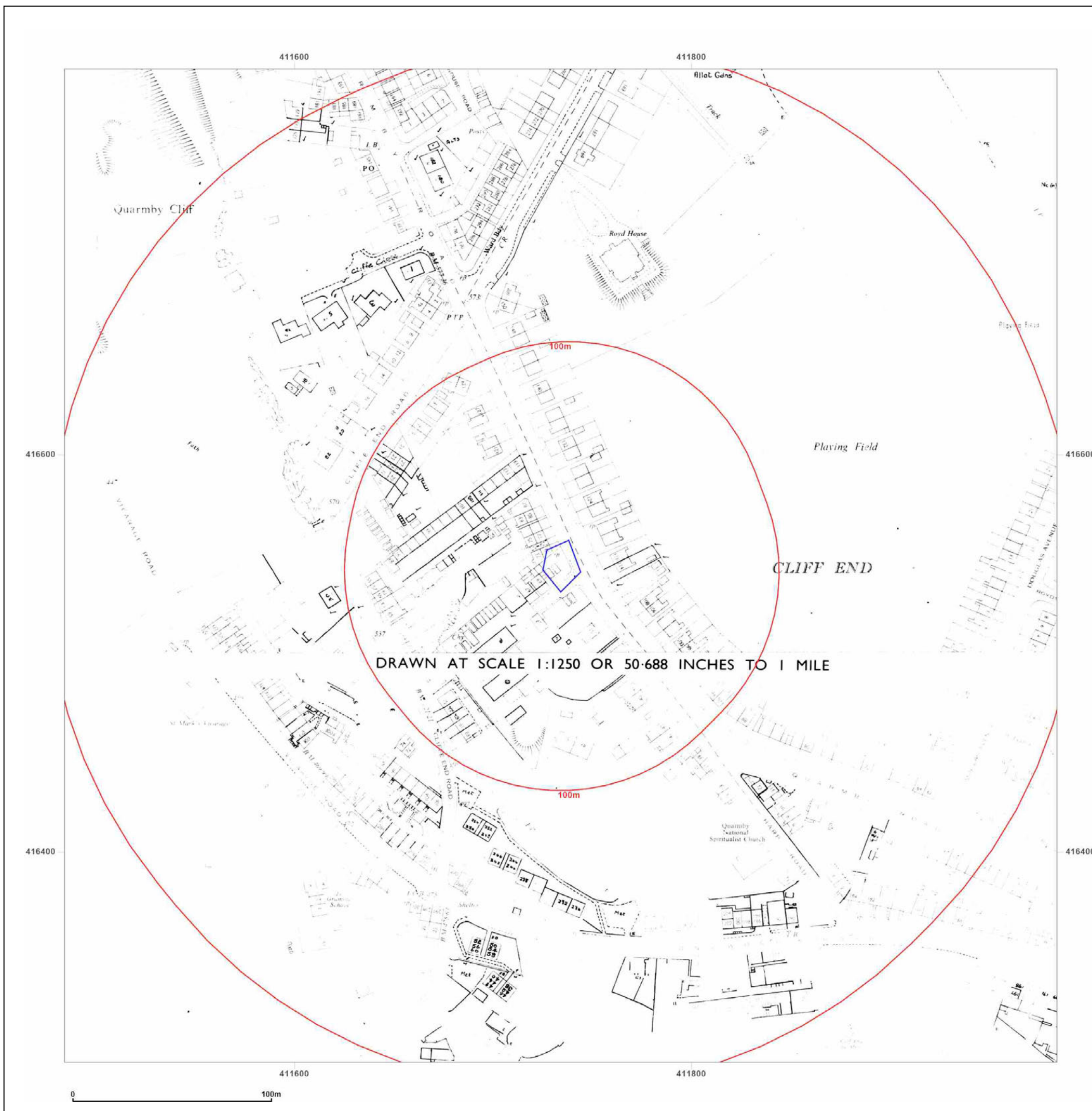


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HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1976

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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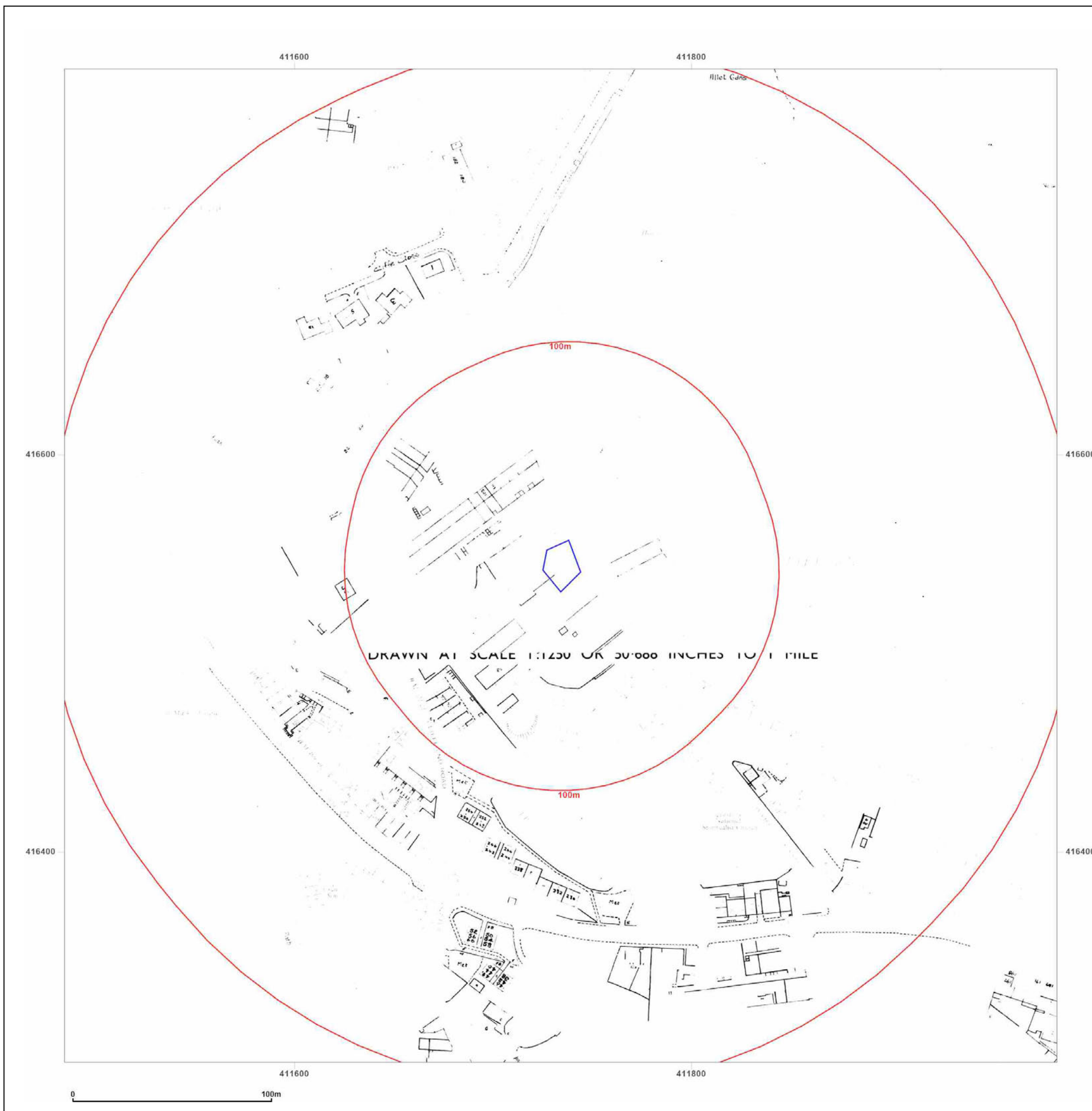


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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1978-1983

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1959
Revised 1983
Edition N/A
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Levelled 1959

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Revised N/A
Edition N/A
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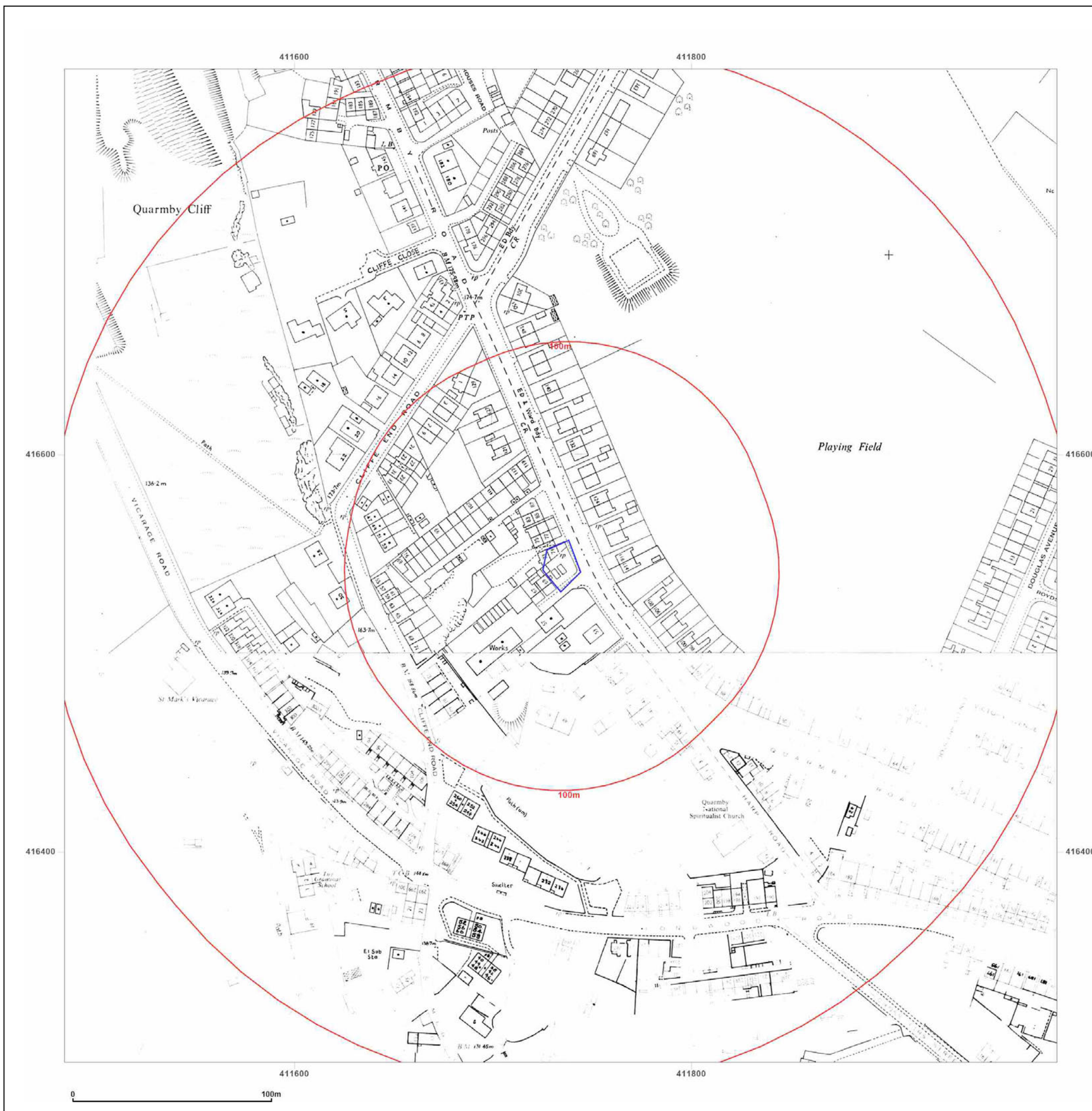


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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1983-1984

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1985

Scale: 1:10,000

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HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 1990-1993

Scale: 1:1,250

Printed at: 1:2,000



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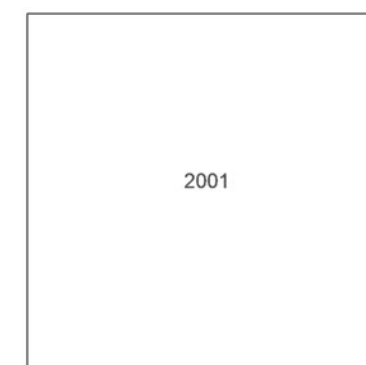
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Map Name: National Grid

Map date: 2001

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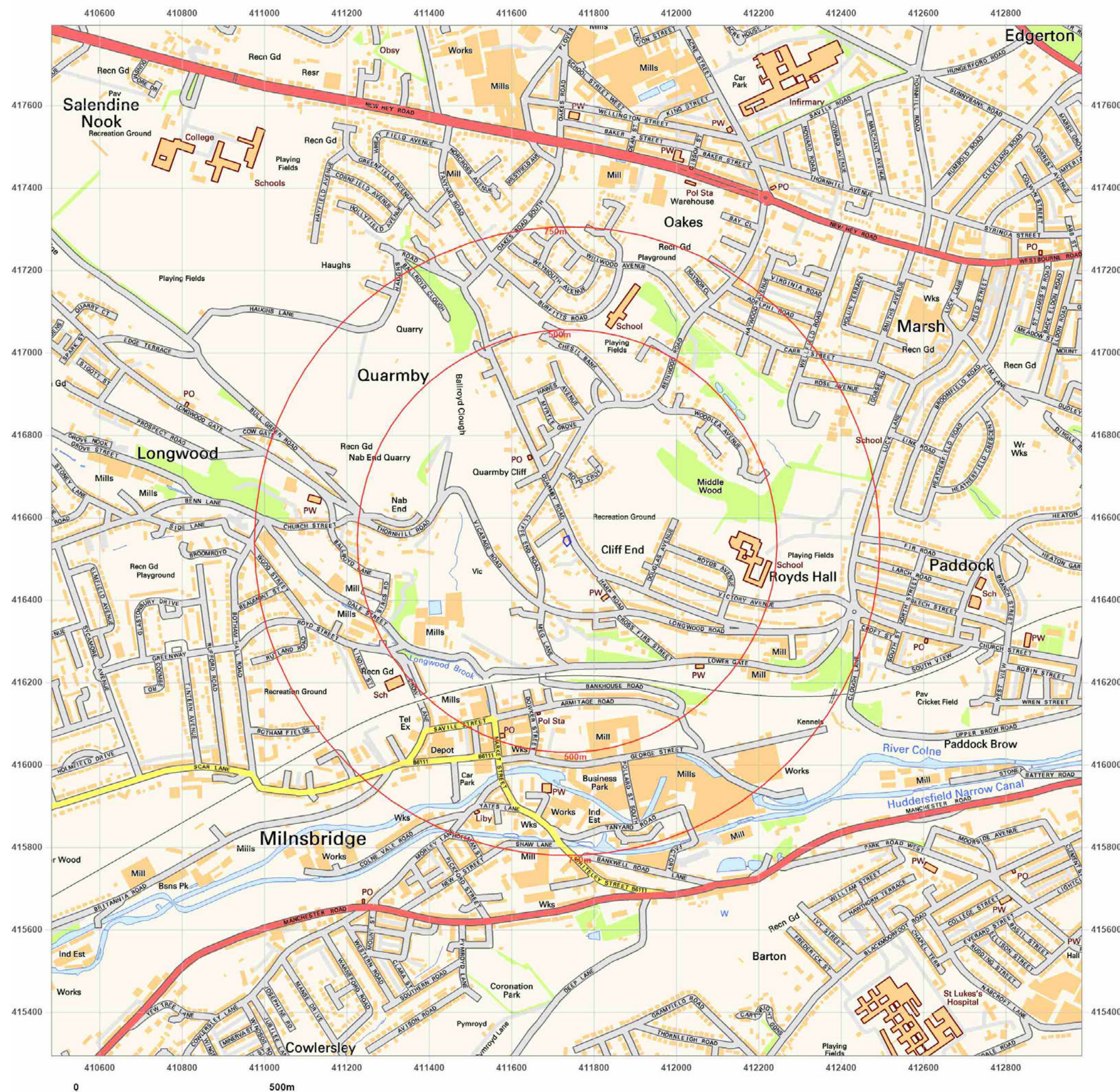


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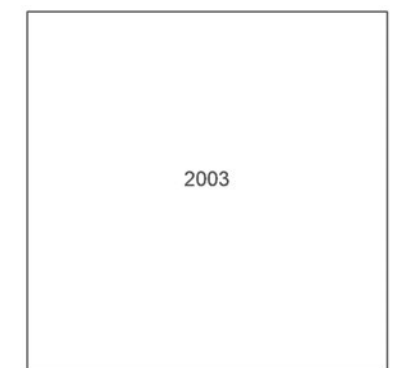
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Grid Ref: 411734, 416544

Map Name: LandLine

Map date: 2003

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Printed at: 1:1,250

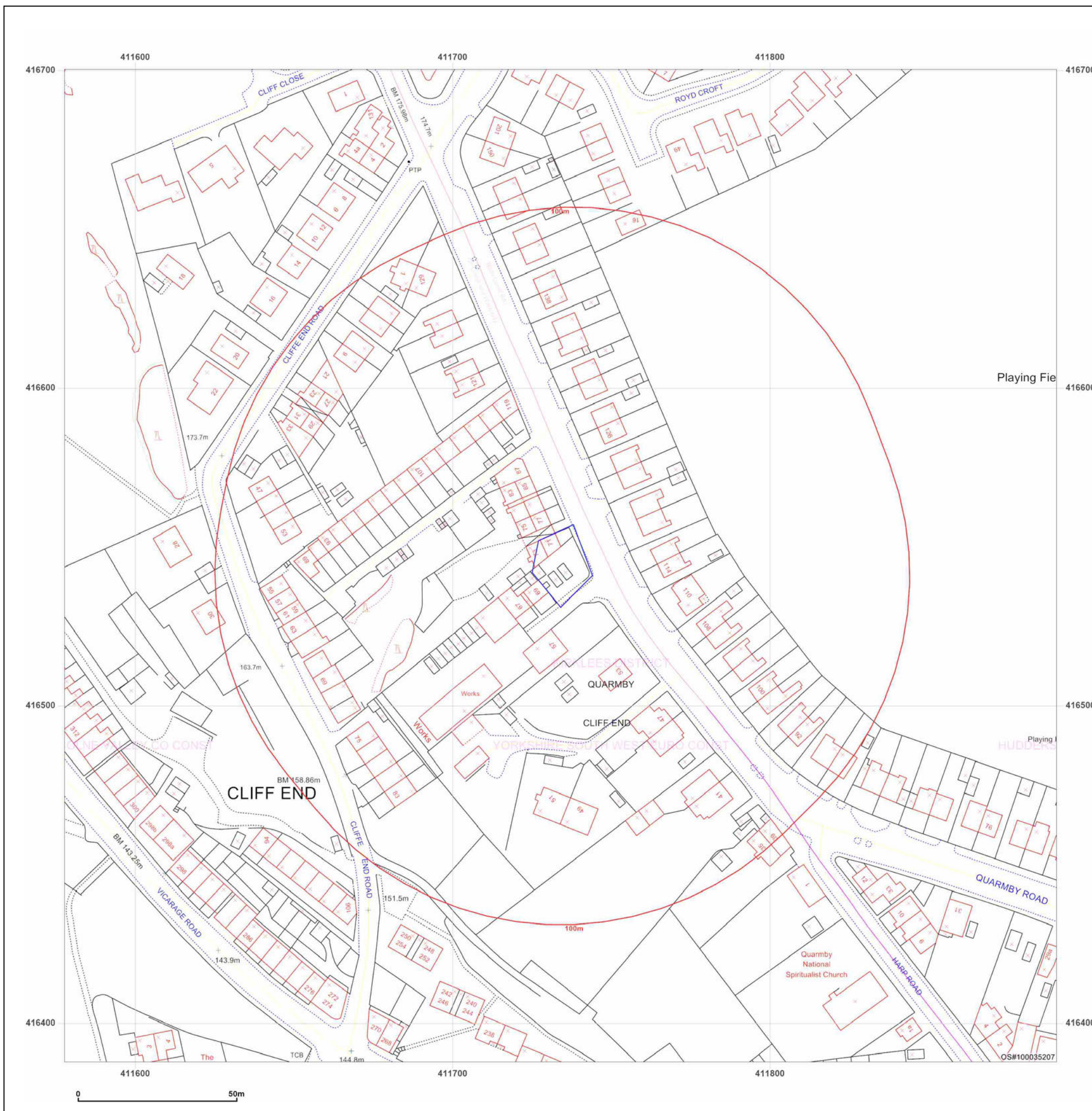


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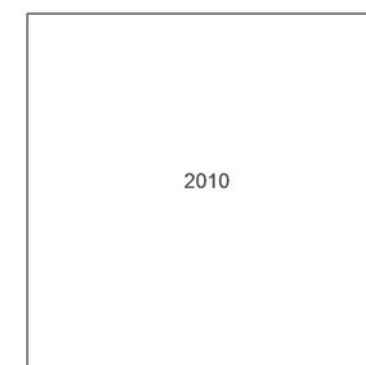
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Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 2010

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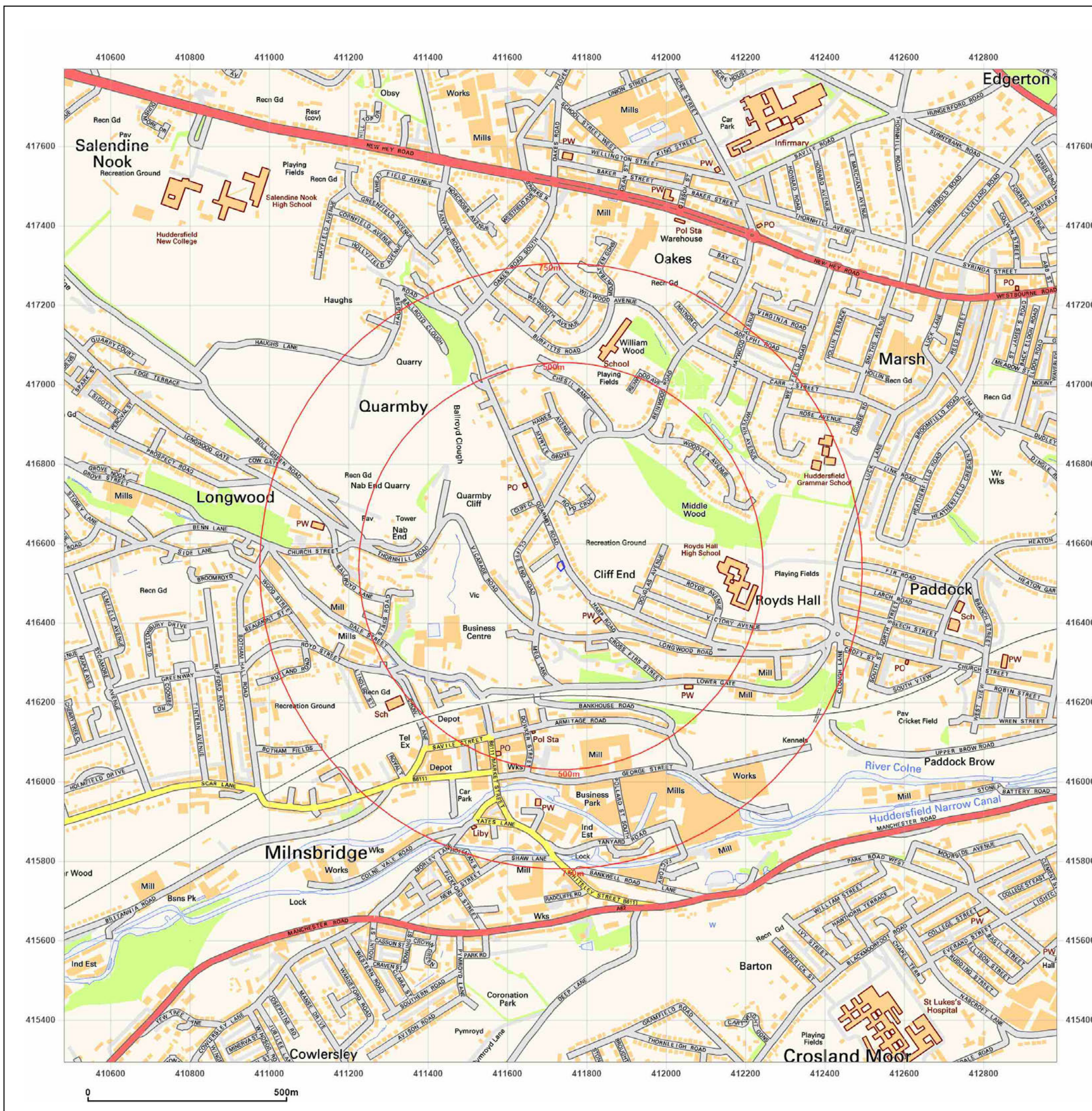


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HD3 4EA

Client Ref: 2112-21
Report Ref: GS-8457952
Grid Ref: 411734, 416544

Map Name: National Grid

Map date: 2022

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2022

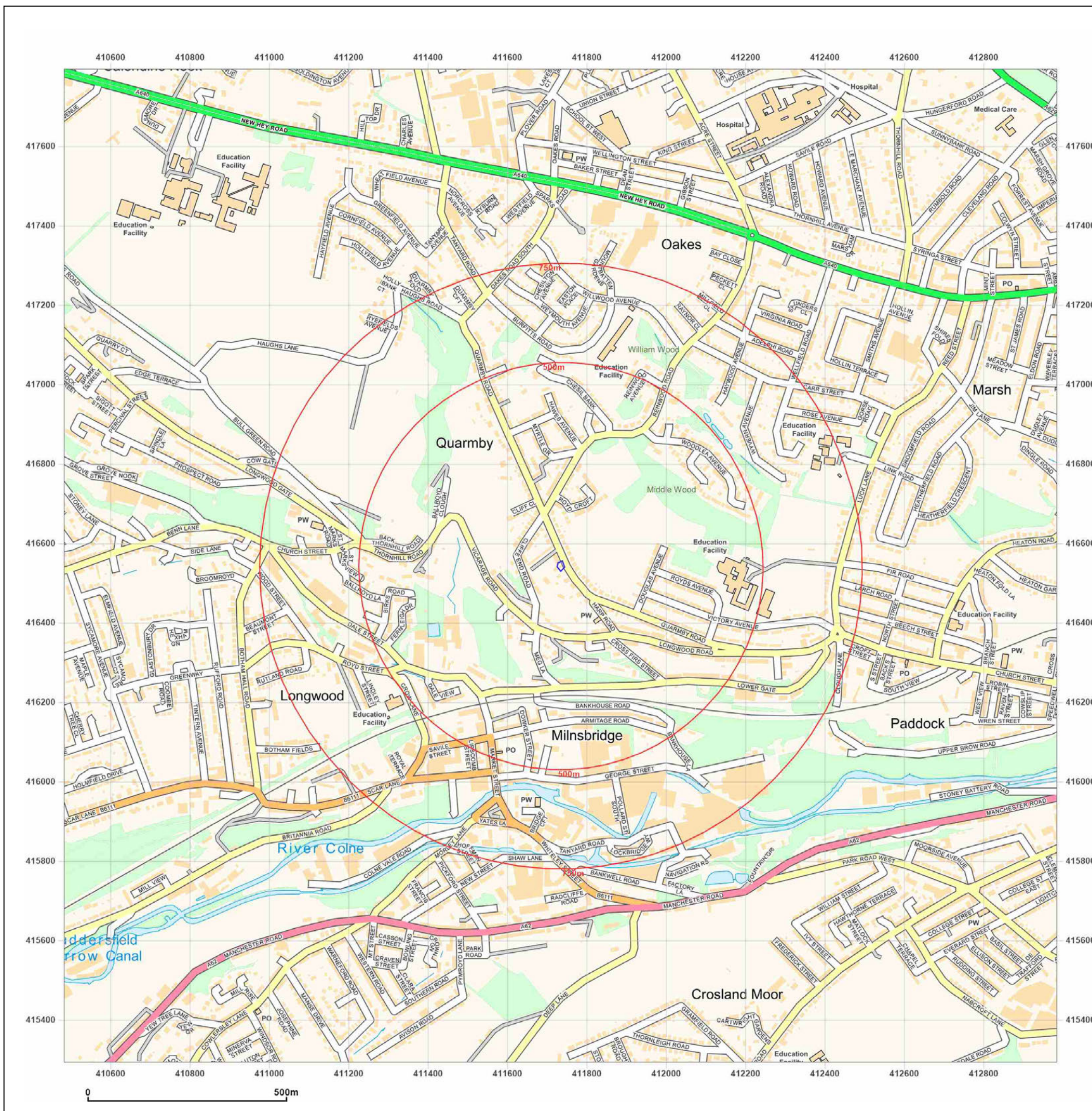


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APPENDIX 5

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 or harm or pollution.	<i>Elevated concentrations of toxic contaminants are present in soils in the top 0.5m in a residential garden.</i> <i>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</i>
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.	<i>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.</i> <i>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.</i>
Low likelihood (Lw)	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.	<i>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.</i> <i>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.</i>
Unlikely (UI)	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.	<i>Elevated concentrations of toxic contaminants are present below hardstanding.</i> <i>Light industrial unit <10 yrs old containing a double skinned UST with annual integrity testing results available.</i>

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.	<i>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.</i> <i>Major fish kill in surface water from large spillage of contaminants from site.</i> <i>Highly elevated concentrations of List 1 and substances present in groundwater close to small potable abstraction (high sensitivity).</i> <i>Explosion, causing building collapse (can also equate to immediate human health risk if buildings are occupied).</i>
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.	<i>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.</i> <i>Damage to building rendering it unsafe to occupy e.g. foundation damage resulting in instability.</i> <i>Ingress of contaminants through plastic potable water pipes.</i>
Mild (MI)	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.	<i>Exposure could lead to slight short - term effects (e.g. mild skin rash).</i> <i>Surface spalling of concrete.</i>
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.	<i>The presence of contaminants at such concentrations that protective equipment is required during site works.</i> <i>The loss of plants in a landscaping scheme.</i> <i>Discolouration of concrete.</i>

* 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 (UI)	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.