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Phase I Desk Study Report

for

The Proposed Commercial Development

at

North Road, Kirkburton, Huddersfield HD8 0RL

for:

Mill Road Group SIPP, The Crescent, King Street, Leicester LE1 6RX

Date	Issued	Revision
24 May 2022	Planning	A

Reference: 82426-01

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Director

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1. INTRODUCTION

This desk study report has been commissioned by Mill Road, Group SIPP and has been prepared by PRP UK Ltd. The subject of this report is the land located to the south west of North Road, Kirkburton, Huddersfield.

1.1. Terms of Reference

This report comprises a desk study in general accordance with the requirements of BS5930 Code of Practice for Ground Investigations (desk study), DEFRA CLR11 Model Procedures for the Management of Land Contamination (conceptual site model and preliminary risk assessment) and to satisfy the requirements of part C of the building regulations, BRE 318 Site investigation for low rise buildings (desk study), NHBC chapter 4.1 Land Quality (desk study) and Highways Agency HD22/08 Managing Geotechnical Risk (preliminary sources study report). Where appropriate it also takes account of the requirements of the National Planning Policy Framework (NPPF), more specifically Planning Policy Statement 23 and has been written to ensure that the client complies with their obligations under the current UK contamination land regime.

1.2. Proposed Development

At the time of writing this report it is proposed to develop the site for commercial use, with a single storey building, together with areas of hardstanding (access road and car park).

1.3. Summary and Clarification of Brief

In accordance with the client's specific objectives, requirements and brief, the purpose of this report is primarily:

- To provide a record of readily available information on the history of the site and former site uses
- To advise on the potential for land contamination at the site
- To advise on exceptional or difficult geotechnical ground conditions at the site that may have an influence on the development design
- To form the basis for the design of a proposed ground investigation

- To comply with the desktop study risk assessment requirements outlined in the NPPF document PPS23

1.4. This report should also be read in conjunction with the information, advice and reports obtained from various sources and listed in section 2.

2. SOURCES OF INFORMATION

2.1. Research

The desk study research comprised:

	Yes	No
Review of information within the public domain (see below)	✓	
Review of information supplied by the client	✓	
Site walkover inspection	✓	
Preliminary discussions with the owners and occupiers	✓	

In preparing the desktop search, PRP obtained Ordnance Survey (OS) maps using the Groundsure database system. In addition to obtaining historical and current OS maps, Groundsure also provide information compiled from a number of agencies, a list of these agencies can be found at https://www.groundsure.com/sources-reference.

The following information has been reviewed:

	Yes	No
Groundsure report	✓	
Groundsure historical OS maps	✓	
Groundsure vulnerability map	✓	
BGS geological map 1:50,000 series	✓	
BGS technical report/memoir		✓
BGS online geological lexicon and borehole database	✓	
Existing services information	✓	
Environment Agency website	✓	
Local authority enquiry	✓	
Local archive library and website information		✓
Coal Authority mining report	✓	
Aerial photographs	✓	

2.2. Responses to Other Enquiries

No enquiries were pursued with any external agency.

3. SITE DETAILS

3.1. Site Locations

3.1.1. The site is located to the south west of North Road, Kirkburton, Huddersfield.

3.1.2. The British National Grid metre coordinates for the centre of the site are easting 419674, northing 412864.

3.2. Site Description

3.2.1. The following description is based on a site walkover survey, which was conducted by PRP on Friday 6 May 2022.

3.2.2. At the time of the site walkover over, the majority of the site was covered with hardstanding (concrete and bound macadam). Concrete cores have been extracted across the site due to previous ground investigation, with standpipes remaining.

3.2.3. A number of below ground fuel tanks are present on site, however during the site walkover the amount, condition and locations could not be determined.

3.2.4. Oil staining was noted on some areas of the concrete slab. This appeared to be relatively fresh, likely caused during the clearing out works conducted the week before the site walkover.

3.2.5. Summary details of the site boundaries and adjacent land uses are:

Boundary	Boundary Construction	Adjacent Land Use	Proximal Land Use
North	Fence	Highway/commercial	Residential
East	Fence	Highway/commercial	Residential/farm land
South	Fence	Residential	Residential/woodland
West	Fence	Residential/ commercial	Woodland/park

3.3. Local Topography, Geography and Geomorphology

3.3.1. The site is located to south west of North Road, Kirkburton, Huddersfield.

3.3.2. The site can be accessed off North Road. The site is surrounded by a combination of commercial, residential, park and woodland.

3.3.3. The site is relatively flat, with the southern/south western section of the site steeply dipping to the south/south west.

4. HISTORY OF THE SITE AND SURROUNDING AREA

4.1. Former and Current Site Uses

The historic maps are presented in appendix V; former and current land uses of the site include the following:

Date	Former and Current Site Uses
1893	The first available plan (1893) shows that the majority of the site is undeveloped. A building of unknown use is noted towards the northern corner
1906	The 1906 plan shows that the majority of the site is covered in trees
1961	Between 1913 and 1961, the trees were removed and the building demolished, with earthworks conducted towards the south western section, believed to be indicating a spoil heap, refuse tip, dump or a quarry
1978	The earthworks are no longer noted and a building was constructed towards the centre of the site. The site is also shown to slope to the south/south west
1991-1995	Between 1991 and 1995, an additional building was constructed along the north western boundary (adjacent North Road)
2022	The buildings on site were demolished

4.2. Former and Current Surrounding Site Uses

Relevant former and current land uses surrounding the site are:

- The earliest available plan from 1893, shows that the area surrounding is largely developed, with predominantly residential dwellings and some industrial buildings, with a steam directly to the south/south west. Residential buildings are located to the north east and west. Burton Mill was located directly to the south. An old quarry is noted approximately 95m to the east.

- No meaningful developments occur within the surrounding area until 1961, when a number of residential dwellings were demolished and a works constructed approximately 70m to the south. The 1961 plan also shows a garage approximately 10m to the east.

- In 1978 Burton Mill was demolished and the garage to the east extended.

- No meaningful developments occur within the surrounding area until 1991 to 1995, when the garage to the east was demolished and residential/ commercial properties constructed.

- 2022 – no notable developments have taken place in the surrounding area since 1991-1995.

4.3. Desk Study Information

The following assessment of the local geology, hydrogeology, hydrology and likely ground conditions has been inferred from the available information and has not been verified by ground investigation. Pertinent information contained in the Groundsure report is summarised below.

4.4. Geology

	Comment	Depth/Thickness
Surfacing and buried structures (source: OS maps, site observation)	Concrete slab across the site. Buried structures may be present	
Made ground (source: OS maps, site observation)	Made ground is likely to be encountered	Unknown
Superficial deposits (source: BGS maps, Groundsure)	None recorded	
Bedrock (source: BGS maps, Groundsure)	Pennine Lower Coal Measures, described as interbedded grey mudstone, siltstone and sandstone and coal seams	Up to 720m thick
Faults (source: BGS maps, Groundsure)	There no faults recorded beneath the site	
Mining (source: Coal Authority, OS maps, BGS maps, Groundsure)	The site is located within a coal mining area. A consultant's coal mining report has been obtained and details the following	

	Comment	Depth/Thickness
	The site is not located within an area of recorded past mining. The site is located within and area of probable unrecorded shallow workings. There are no recorded mine entries within 100m of the site. There are on coal outcrops recorded. There are no faults, fissures or break lines recorded. There are no recorded opencast mines within 500m of the site. There are no damage notices or claims for the site or any property within 50m of the site. There is no recorded mine gas within 500m of the site. There is no record of future underground mining	

4.5. Hydrogeology

Groundwater vulnerability and classification (source: Groundsure)	According to data published by the Environment Agency's Groundwater Protection Policy (2010), classification of the underlying strata below the site is: • Superficial deposits – none recorded • Bedrock – secondary A aquifer A secondary A aquifer is defined as permeable layers capable of supporting water supplies at a local level rather than a strategic scale, in some cases forming an important source of base flow to rivers
Groundwater abstractions (source: Groundsure)	There are twenty six groundwater abstractions within 2000m of the site. The closest of these is located 363m to the north west and noted as historical general use. The closest active groundwater abstraction is located 689m to the west and noted as water bottling. Given the distance, the development of the site is unlikely to affect or be affected by any recorded groundwater abstractions
Groundwater source protection zones (source: EA, Groundsure)	The site is not located within a groundwater source protection zone. These zones have been established by the Environment Agency for nearly 2000 groundwater sources used for public drinking water supply. Zones are defined as: **Zone I (inner):** Where the travel time of water in the aquifer to the source is 50 days or less **Zone II (outer):** Either 25% of the source area or a 400 day travel time, whichever is greater **Zone III (total catchment)**: The total area needed to support the abstraction from the protected source
Groundwater levels (source: OS maps)	Groundwater is likely to be encountered at depths greater than 2.5m
Groundwater flooding susceptibility (source: OS map, BGS, Groundsure)	There is a negligible risk of groundwater flooding

4.6. Hydrology

Surface water (source: OS map, Groundsure)	There are four surface water features within 250m of the site. The closest of the is the Box Ings Dike located along the south eastern boundary. The development of the site is unlikely to affect any surface water features within the area
Flood Zone (source: OS map Groundsure)	The site is located within a flood zone 1, therefore is not at risk from fluvial flooding, less than 1:1000 annual probability of river area flooding in any year
Surface flooding (source: EA Groundsure)	The majority of the site is at a very low risk of surface water flooding; however, the south eastern boundary is at a high risk

4.7. Natural Ground Hazards

Subsidence and instability (source: Groundsure)	• There is a very low risk of shrink swell clays, However the Pennine Lower Coal Measures will weather to coil soils, which may be affected by tree influence • There is a negligible risk of running sands • There is a negligible risk of compressible deposits • There is a very low risk of collapsible deposits • There is a moderate risk of landslides • There is a negligible risk of ground dissolution of soluble rocks
Radon gas (source: BRE, Groundsure)	The site is located within an area, where between 1% and 3% of properties are above the action level, therefore no radon protection measures are required

4.8. Environmental Information – Pollution and Industrial Lane Use

Discharge consents (source: Groundsure)	There is one recorded licensed discharge to controlled water, this is located 479m to the west and noted as sewer storm overflow into a tributary of Dean Bottom Dike issued in 1963. Given the distance, this is unlikely to affect the site
Sensitive land use (source: Groundsure)	Within the Sensitive Lane Use dataset there are no entries within 2000m of the site for the following entries: • Site of Special Scientific Interest (SSSI) • Conserved wetland sites (Ramsar sites) • Special areas of Conservation (SPA) • National Nature Reserves (NNR) • Local nature reserves • Biosphere reserves • Forest parks • Marine Conservation Zone • Proposed Ramsar sites There are fifteen designated ancient woodlands within 2000m of the site. The closes of these is located 533m to the south. Given the distance, the development of the site is unlikely to affect these. There is one area of green belt, located 99m to the south west. The development of the site is unlikely to affect this. The site is located within a nitrate vulnerable zone; however, this only affects agricultural land. The site is located in an SSSI impact risk zone; however consultation is only required for sources of air pollution. See section 10.17 in the Groundsure report for further details
Pollution incidents (source: Groundsure)	There are six recorded pollution incidents within 500m of the site, three of these are located on site, noted as minor affect on water and land and no impact on air. The closest significant impact is located 66m to the south and noted a significant impact on water from sewage material. Given the type of pollution incidents, it is unlikely that the site has been significantly impacted
Radioactive substances (source: Groundsure)	There are no radioactive substances recorded within 500m of the site

Planning hazardous substances consents (source: Groundsure)	There are no recorded Control of Major Accident Hazards (COMAH) within 500m of the site. There is no hazardous substance storage and usage within 500m of the site. There are no regulated explosive sites within 500m of the site
Landfill sites (source: EA, Groundsure, LPA)	There are none of the following landfill sites within 500m of the site. • Active or recent landfills • Historical landfills (BGS records) • Historical landfill (LA/mapping records) • Historical landfill (EA/NRW records) • Licensed waste sites There is one recorded historical waste site within 500m of the site, this is located 359m to the north west and noted as ground workings and refuse heap in 1960. Given the distance this is unlikely to have affected the site
Fuel stations (source: Groundsure)	There are no recorded historical fuel stations within 500m of the site, however the site was historically used as a petrol station. There is one recorded current or recent petrol stations with 500m of the site. This is noted 6m to the north east but is likely referring to the petrol station previous located on site. At the time of writing this report, the fuel tanks remaining on site, with there condition unknown. Investigations should be conducted within the area of the tanks, to determine if the surrounding soils are contaminated
Integrated pollution controls (IPC & IPPC) (source: EA, Groundsure)	There are no IPCs or IPPCs within 500m of the site
Historical Tanks (source: Groundsure)	As their site was used as a petrol station a number of fuel tanks are beneath the site. The exact location, number and condition is unknown. There are five recorded historical tanks within 500m of the site, the closest of these is located 121m to the north west, noted as unspecified tanks present in 1913. Given the depth this is unlikely to affect the site

5. PRELIMINARY CONTAMINATED LAND RISK ASSESSMENT

5.1. The preliminary contaminated land risk assessment, described below and presented in the preliminary contaminated land risk assessment matrix in appendix II, outlines the anticipated conditions of the site based on the information obtained during desk study research.

5.2. Current UK government guidance on the assessment of contaminated land requires to review of risk to human health, to buildings and to the environment using a source-pathway-receptor linkage relationship. If each of these elements is present, the pollution linkage provides a potential risk to the identified receptors.

5.3. The preliminary contaminated land risk assessment of the site is therefore based upon:

- The sources of contamination that may be present on, or may have an effect upon the site
- The possible exposure pathways that may exist between sources and receptors
- The potential receptors that may be present on or adjacent to the site and their sensitivity

5.4. This assessment is set in the content of the proposed development of the site for commercial usage and considers the environmental, geological, hydrogeological and historical information gathered and recorded in this report.

5.5. Potential Sources of Contamination

5.5.1. At the time of the site walkover over, the majority of the site was covered with hardstanding (concrete and bound macadam). Concrete cores have been extracted across the site due to previous ground investigation, with standpipes remaining.

5.5.2. A number of below ground fuel tanks are present on site, however during the site walkover the amount, condition and locations could not be determined.

5.5.3. Minor oil staining was noted on some areas of the concrete slab. This appeared to be relatively fresh, likely caused during the clearing out works conducted the week before the site walkover.

5.5.3.1. Historical On Site Sources

5.5.3.1.1. Part of the site was developed since before 1893, with the majority of the site undeveloped woodland/open space. In 1961, the building was demolished, trees removed and spoil heap, refuse tip, dump or a quarry, noted towards the south eastern section of the site. The site was then developed in 1978. This is believed to be the former petrol station.

5.5.3.1.2. As the site was used as a petrol station TPH contamination may be present within the soils surrounding the fuel tanks. At the time of writing this report, the condition of the tanks is unknown.

5.5.3.1.3. Deep made ground is likely to be present within the area of the spoil heap, refuse tip, dump or a quarry.

5.5.3.1.4. Three pollution incidents are recorded on site; however these are either no or minor impact on land water and air. These are unlikely to have affected the underlying soils, due to the concrete slab.

5.5.3.1.5. The potential for historical on site sources of contamination is considered to be **high**.

5.5.3.2. Current On Site Sources

Any current on site sources of contamination are likely to come from inclusions within the made ground, or from the fuel tanks. During the site walkover, no potential sources of contamination were recorded, other than oil/fuel staining on the existing concrete slab.

5.5.3.3. The potential for current on site sources of contamination for the site is considered to be **high**, due to the presence of below ground fuel tanks.

5.5.3.4. Historical Off Site Sources

5.5.3.4.1. The area surrounding the site was used for predominantly residential use, with some industrial buildings, such as Burton Mill and Dene Works.

5.5.3.4.2. A number of historical tanks are recorded within the area surrounding the site, however little information is available. In addition, there are a number a pollution incidents with 500m of the site. Many of these pollution incidents are recorded as no or minor impact, however a significant impact on water are recorded in several locations.

5.5.3.4.3. The potential for historical off site sources of contamination is considered to be **moderate** to **high**.

5.5.3.5. Current Off Site Sources

5.5.3.5.1. The surrounding area predominantly comprised commercial and residential dwellings.

5.5.3.5.2. The potential for current off site sources of contamination can be considered **low**.

5.6. Potential Contamination Pathways

5.6.1. In accordance with the Environment Agency publication, The Contamination Land Exposure Assessment Model (updated 2014), the potential pathways by which the onsite contaminants may affect the health of the existing and future potential human receptors at the site are:

- Inhalation of vapour; including outdoor and indoor exposure
- Inhalation of fugitive dust; including outdoor windblown dust and indoor dust tracked in from outside
- Ingestion and absorption by direct contact; including hand to mouth contact, absorption through the skin, consumption of soil with vegetables

5.6.2. In addition, potential pathways by which the onsite contaminants may affect the existing and future potential receptors at the site are:

- Migration by surface run off, including in suspension or solution
- Migration and solution via groundwater, including leaching in the unsaturated zone and diffusion in the saturated zone
- Plant uptake through root systems

5.7. Potential Receptors of Contaminants

5.7.1. At the time of writing this report it is proposed to develop the site for residential purposes.

5.7.2. Potential receptors considered for the site are:

- Site workers
- End uses of the site
- The public, especially children, on or near the site
- Adjacent land users and properties
- New and existing infrastructure, buried pipes and services
- Underlying aquifers
- New structural foundations
- Surface water features
- Surface water drainage
- Local flora and fauna
- Future landscaping and planting

5.8. Source-Pathway-Receptor Linkages Risk Assessment

5.8.1. The risk to the end user associated with the historical on site sources is considered to be unknown at this stage, as the extent of any on site contamination has not been quantified by intrusive ground investigation.

5.8.2. The risk associated with direct contact between buried services and possible sources of contamination cannot be ascertained at present and warrants further investigation, this is also consistent with the risk associated with direct contact between property and possible sources of contamination as these cannot be ascertained at present and warrant further investigation.

5.8.3. The risk to the end user associated with the naturally occurring current on site sources is considered to be unknown at this stage, as the extent of any naturally occurring on site contamination has not been quantified by intrusive ground investigation. The majority of the area to be developed will be covered in hardstanding, therefore the source-pathway-receptor linkage will be severed.

5.9. Preliminary Contaminated Land Risk Assessment

A preliminary contaminated land risk assessment has been developed for the site and is summarised in appendix II. The initial findings of the assessment suggest that there is:

5.9.1. Risk to Human Health During Construction

The risk to site workers is considered to be **moderate,** primarily due to the existing fuel tanks.

5.9.2. Risk to Human Health Post Construction

5.9.2.1. The risk to end user health is considered to be **moderate** to **high**. This is purely due to the severity of an occurrence. However, it must be stated that the probability of an occurrence is considered to be low.

5.9.2.2. Any contamination identified during an intrusive ground investigation will be thoroughly assessed and an appropriate remediation strategy will be formed to ensure that the site meets guidance criteria.

5.9.3. Risk to Local Ecology and Landscaping Planting

The risk to local flora and fauna is considered to be **low**. There are few contaminants that are phytotoxic and the probability of these being present is considered to be unlikely.

5.9.4. Risk to Surface Water and Groundwater

The risk to surface water and groundwater is considered to be **low**. The proposed development is unlikely to impact the natural flows. Any contamination identified during an intrusive ground investigation will be mitigated against in the construction design and due to the shallow nature of such occurrences will include dig out and removal from site.

5.9.5. Risk Due to Ground Gas

The risk from ground gas is considered to be **moderate.** The natural geology beneath the site is known to produce quantities of ground gas, with made ground is anticipated across the site, which could include industrial waste. In addition, fuel tanks are present beneath the site.

5.9.6. Risk to Buried Structures and Services Due to Aggressive Ground Conditions

The risk to buried structures and services is considered to be **low**.

5.9.7. Requirement for Further Assessment

The significant environmental issues associated with the redevelopment across the site that requires further assessment during the proposed ground investigation are considered to be

- If present the chemical characteristics of made ground deposits, including total and leachable contaminants appropriate to the former uses at the site as well as the surrounding area
- Contamination of the natural underlying deposits, groundwater and perched groundwater
- The presence and concentration of ground gasses associated with coal seams, coal mining and landfill sites

6. ASSESSMENT OF GEOTECHNICAL ISSUES AND COAL MINING RISK ASSESSMENT

6.1. Preliminary Geohazard and Geotechnical Assessment

6.1.1. Made Ground

The underlying made ground may be unsuitable and of variable strength to support the proposed floor slabs and therefore may require removal from site or ground improvement undertaken.

6.1.2. Hard Excavation

The thickness of the made ground is unknown, it may be as shallow as 0.50m or deeper than 2.50m and therefore hard excavation may be encountered during the development. Given the history of the site significant depth of made ground and hard excavation are likely.

6.1.3. Groundwater

Groundwater is likely to be encountered within the Lower Pennie Coal Measures, however this is likely to be at depths greater than 2.50m.

6.2. Coal Mining Risk Assessment

6.2.1. As the site is located within a coal mining area, a coal mining report has been obtained. The coal mining report states the following.

- No past underground mining recorded
- Probable unrecorded shallow workings (less than 30m deep)
- No mine entries recorded within 100m of the site
- No recorded opencast mines within 500m of the site
- No coal mining subsidence damage notice or claims on site or within 50m
- No mine gas recorded within 500m of the site
- No recorded future underground mining

6.2.2. The coal mining report does not refer to any coal seams beneath the site, however the Coal Authority interactive map shows a coal outcrop close to the site boundary. This outcrop is recorded in the Groundsure report as an inferred coal seam, 10m to the east and 24m to the north of the site.

6.2.3. The risk associated with unrecorded shallow workings will been to be considered further. Given that a coal outcrop is located close to the site boundary, shallow coal workings (less than 30m) may be present beneath the site. Based on the information provide by the Coal Authority and Groundsure report, the risk associated with coal mining is deemed to be **moderate** to **high**.

6.2.4. Further investigation will be required if any unrecorded shallow coal workings are present beneath the site. It is recommended that two 30m deep boreholes are conducted across the site. Given the size of the site, two boreholes will provide suitable coverage.

6.2.5. If no shallow coal workings are encountered then this risk can be reduced to negligible. If shallow coal workings are encountered, suitable remedial measures, such as a grouting, or suitable foundation designs will be required.

6.2.6. Prior to an investigation into the unrecorded shallow coal workings, permission from the Coal Authority will be required before the 30m deep boreholes are sunk.

6.3. Requirement for Further Assessment

The significant geotechnical issues associated with the site development that require further assessment during the proposed investigation are considered to be:

- The distribution, depth and condition of the made ground
- The distribution, depth and condition of the underlying natural deposits
- If present the depth and flow direction of any perched water and groundwater
- The chemical regime of the underlying bedrock in relation to concrete
- Determine if unrecorded shallow coal workings are present

7. BASIS FOR DESIGN OF GROUND INVESTIGATION

A brief review of the currently available data and the initial conceptual site model indicates the following uses that require further investigation:

7.1. General Concept

The general concept of the proposed ground investigation is to:

- Provide clarification of the shallow ground conditions
- Provide clarification of the groundwater regime below the site, including the presence of shallow perched groundwater
- Provide confirmation of the chemical nature of the underlying strata for the purpose of the design of buried structures and services
- Provide confirmation that no potential sources of contamination are present, to update the initial conceptual site model and determine whether further risk assessment is required
- Carry out geotechnical test data for preliminary design purposes
- Determine the characteristic situation of the site. In respect of determining the risk posed by ground gas
- Provide clarification on the presence of unrecorded shallow coal workings

7.2. Restrictions and Constraints for Ground Investigation

The issues below have been identified from the preliminary information provided to date and they should be highlighted to the ground investigation contractor prior to site works.

	Yes	No	?	Comment
Ecology				
Great crested newts		✓		Great crested newts are unlikely to inhabit the site
Badgers		✓		Badgers are unlikely to inhabit the site
Water voles		✓		Water voles unlikely to inhabit the site
Lizards		✓		Lizards unlikely to inhabit the site

	Yes	No	?	Comment
Japanese knotweed		✓		No Japanese knotweed encountered on site
Tree preservation orders	✓			There are a number of trees on site. In accordance with Kirklees council website, the site is in a TPO and conservation area.
Nesting birds			✓	Nesting birds may inhabit the trees on site
Archaeology		✓		
Buried features		✓		No archaeological buried features anticipated to be on site. In addition, Historic England has no record of archaeological features on site
Listed buildings		✓		No listed buildings on or nearby the site
Physical Limitations				
Rough ground		✓		No rough ground on site
Soft ground		✓		No soft ground on site
Steep ground	✓			Steep ground to the south
Narrow access	✓			Access may be narrow for large vehicles
Restricted Access				
Active site		✓		The site is not active
Building with hardstanding	✓			All section covered in hardstanding
Residential area	✓			The site is located near to residential areas
Traffic management	✓			Traffic management required during development
Health and Safety				
Buried contamination			✓	High risk of contamination

	Yes	No	?	Comment
Buried and overhead services			✓	Limited services anticipated. Service plans to be provided prior to investigation
Asbestos			✓	Possible within made ground

8. RECOMMENDATIONS

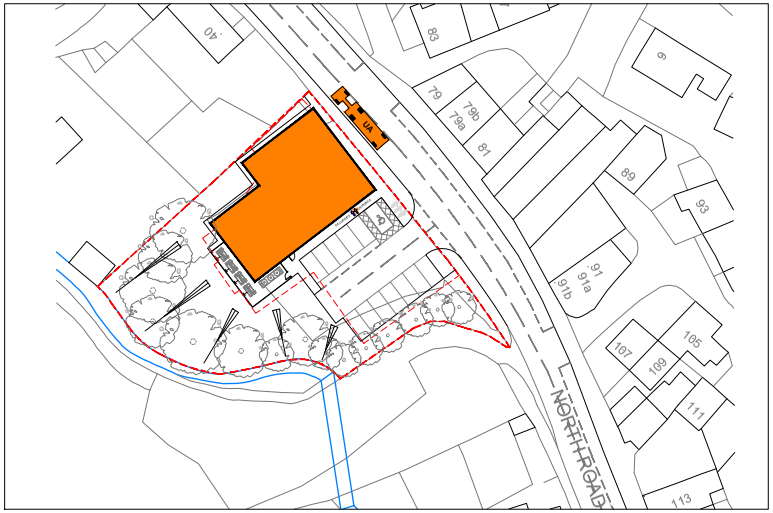
8.1. It is recommended that an intrusive ground investigation targeted at provided detailed data to facilitate assessment of the identified geotechnical and contamination issues is carried out. Below are some of the techniques and tests that should be undertaken as part of the ground investigation.

- Windowless sampler boreholes to determine the depth and characteristics of the underlying geology and groundwater
- Geotechnical testing to determine the geotechnical properties of the underlying soils
- Geochemical testing, including metals, PAH, TPH and asbestos
- Infiltration tests to determine the feasibility of soakaways
- Ground gas monitoring, to determine the risk from ground gas
- Two 30m rotary boreholes to determine the risk associated with unrecorded shallow mine workings
- Given the topography of the site and the proposed site layout, a slope stability investigation should be conducted.

8.2. The ground investigation and testing should provide sufficient data to discharge local authority conditions and, in the event of identification of unsuitable soils, the investigation will enable a specification for a suitable remediation strategy for the site.

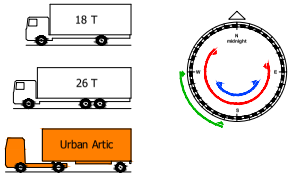
APPENDIX I

DRAWINGS AND SITE PHOTOGRAPHS



SITE LOCATION PLAN - NOT TO SCALE

DELIVERY SOLUTION: HGV TO APPROACH ALONG NORTH ROAD (B6116) FROM SOUTH. PARK ALONGSIDE STORE ON NORTH ROAD. HGV TO LEAVE HEADING NORTH ALONG B6116



SITE RISKS:

- PLANT LOCATION, TYPE AND ACCESS TO BE CONFIRMED
- REFUSE STORAGE AND COLLECTION TBC.
- EXISTING SITE LEVELS TBC.

INDICATIVE BAY COUNT: TBC

AERIAL VIEW OF SITE - NOT TO SCALE

DO NOT SCALE FROM THIS DRAWING - STATED DIMENSIONS REFER. CONTRACTORS SHALL BE RESPONSIBLE FOR THE CHECKING OF ALL STATED DIMENSIONS, WITH ANY ANOMALIES BEING IDENTIFIED TO THE ORIGINATOR PRIOR TO ANY CONSTRUCTION OR FABRICATION WORKS COMMENCING.

CDG1

Sainsbury's AREA SCHEDULE

	m²	ft²
AREA		
SALES EXCL. C/O	228	2454
GROSS SALES	250	2691
BACK UP	125	1346
VERTICAL CIRC.	0	0
MOTHBALLED	0	0
PLANT	42	452
SUB-LET	0	0
TOTAL	375	4037
GROSS AREAS	m²	ft²
GROUND	375	4037
BASEMENT	0	0
FIRST	0	0
GROSS TOTAL	375	4037

DRAWING ORIGIN
DEVELOPER, OTHER ARCHITECTS

SITE STATUS
ACQUISITION, DEVELOPMENT

WORKS RESPONSIBILITY
DEVELOPER OR SSL

SITE PLANNING STATUS

- CHANGE OF USE REQUIRED N
- LISTED BUILDING N
- CONSERVATION AREA N
- CURRENT DESIGN REQUIRE CONSENT Y

SSL PLANNING RESPONSIBILITY
PLANT, SIGNAGE, ALL

STRUCTURAL DESIGN
BASED ON: ASSUMPTION, S.E. DESIGN.

APPROVAL STATUS

SUPPLY CHAIN
HGV DELIVERY STRATEGY
T.R.O REQUIRED - TBC

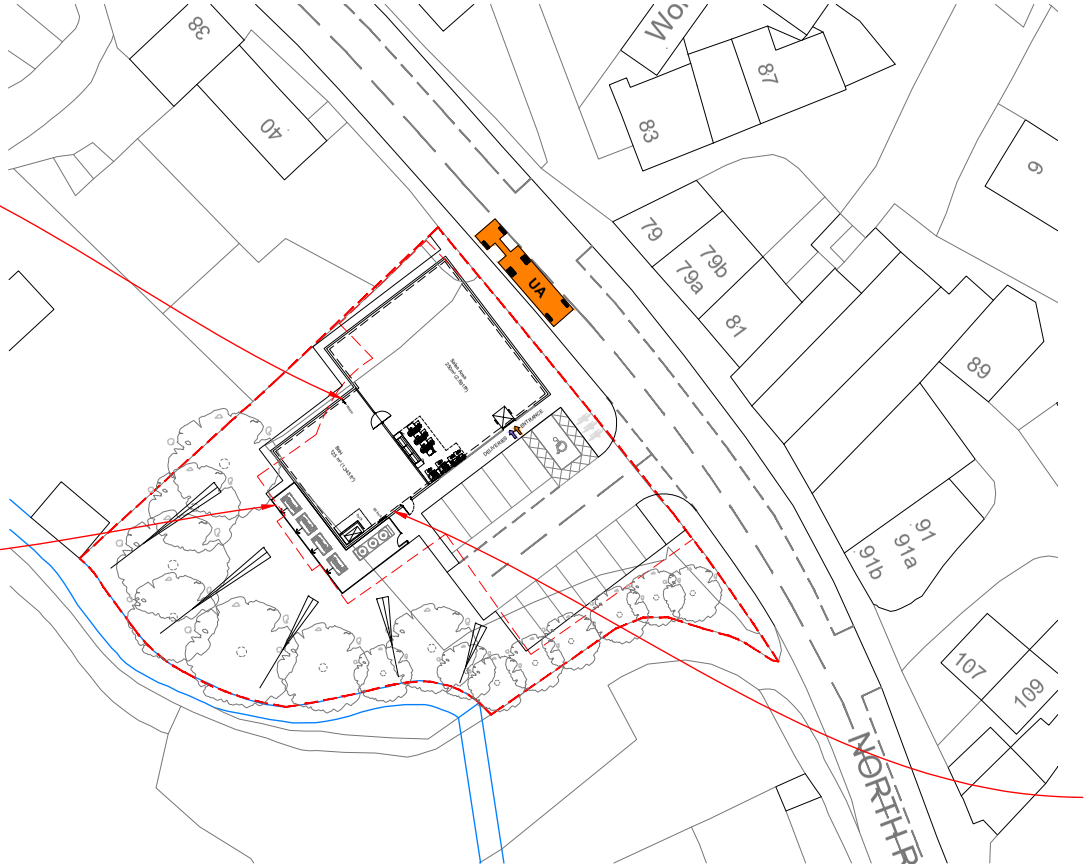
PLANT
PLANT LOCATION
M&E TEAM CONSULTED - N

STORE DESIGN
CEILING HEIGHT TBC, COLUMNS WITHIN SALES AREA & SHELL TBC.

CAR PARK NUMBERS: 13

Preferred incoming water supply location

PLANT SOLUTION:
Standard SSL plant; 3 fan gas cooler + 4 No. a/c condensers in acoustic housing. All within secure metal palisade enclosure & access gate.
Specialist to confirm any further requirements.
Developer to confirm any acoustic requirements



SERVICES PENETRATIONS

500x100mm service slot at high level (above pack).
2x90mm circular louvres -Cash Office.
2x90mm circular louvres -Colleague Room.
2x250x250mm louvres -ducted toilet extracts.
450x450mm Louvre -Bakery

Preferred incoming power supply location

SSL STORE

PROPOSED MASSING- NOT TO SCALE

PROPOSED SITE PLAN - NOT TO SCALE

CDG1 PENDING

Revision	Date	Description	Drawn
-	-	-	-

CHQ ARCHITECTS

Status: PRELIMINARY / FEASIBILITY

Client: Sainsbury's

Project Title: SAINSBURY'S LOCAL NORTH ROAD KIRKBURTON

Drawing Title: PROPOSED SITE PLAN SITE REF: -

PROJECT NO.	ORIGINATOR	ZONE	LEVEL	DRG. NO.	REV
XA-KRKB_0000	CHQ	Z07	00	SK-A-0251	-

JOB NUMBER	Scale	Date
CHQ.21.16299	AS SHOWN @ A3	27.10.2021

Drawn: - Checked: -

CHQ Architects Ltd, The Maltings, 44 Whitehorse Street, Baldock, Hertfordshire SG7 6QQ
Telephone: (01462) 895110 Email: design@chq-architects.co.uk www.chqarchitects.co.uk

ISO A3 Landscape

Photograph 1: Facing south east, showing and overview of the site.

Photograph 2: Facing south, showing an overview of the site.

Photograph 3: Facing south west, showing an overview of the site.

Photograph 4: Facing north, showing an overview of the site.

Photograph 5: Facing north, showing an overview of the site.

Photograph 6: Showing the oil/fuel staining on site.

APPENDIX II

CONTAMINATED LAND RISK ASSESSMENT

Preliminary Contaminated Land Risk Assessment Matrix

In accordance with DEFRA CLR 11 'Model Procedures for the Management of Land Contamination' a preliminary contaminated land risk assessment has been developed for the Site and is summarised in Table B1, Appendix B.

The risk assessment has been carried out using the risk model defined and outline in the table below.

Potential sources have been identified from the desk study information and the guidance in the Environment Agency's 'The Contaminated Land Exposure Assessment Model' (updated 2014).

Hazard Linkages will be determined by the proposed investigation and the risk assessment on the basis of the viability of the linkage.

If the hazard linkage is confirmed then remediation or management solutions will be proposed to ensure that no unacceptable risk remains following development.

	Category	Definition
Potential Severity	Severe	Acute risk to human health, catastrophic damage to buildings/property, major pollution of controlled waters.
	Medium	Chronic risk to human health, pollution of sensitive controlled waters, significant effects on sensitive ecosystems or species, significant damage to buildings or structures.
	Mild	Pollution of non-sensitive waters, minor damage to buildings or structures.
	Minor	Requirement for protective equipment during site works to mitigate health effects, damage to non-sensitive ecosystems or species.
Probability of Risk	High Likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long-term, or there is evidence of harm to the receptor.
	Likely	Pollutant linkage may be present, and it is probably that the risk will occur over the long-term.
	Low Likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so.
	Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable.

		Potential Severity			
		Severe	Medium	Mild	Minor
Probability of Risk	High Likelihood	Very High	High	Moderate	Moderate/Low
	Likely	High	Moderate	Moderate/Low	Low
	Low Likelihood	Moderate	Moderate/Low	Low	Negligible
	Unlikely	Moderate/Low	Low	Negligible	Negligible

Contaminated Land Risk Assessment Matrix (Conceptual Site Model)

Source (type and location)	Pathway	Receptor	Initial Assessment for Desk Study Information			Proposed Investigation	Hazard Linkage	Revised Risk	Prosed Remediation/ Management	Residual Risk
			Severity	Prob.	Risk					
Petroleum hydrocarbon compounds (petrol, diesel & oil) and associated compounds within shallow soil / groundwater.	Inhalation of vapour	Site workers	Medium	Likely	Moderate	Observation, identification, sampling and laboratory testing across site.	TBC	TBC	TBC	TBC
		End-users	Severe	Likely	High		TBC	TBC	TBC	TBC
	Ingestion and absorption via direct contact	Site workers	Medium	Likely	Moderate		TBC	TBC	TBC	TBC
		End-users	Severe	Low Likelihood	Moderate		TBC	TBC	TBC	TBC
	Migration by surface run-off	Surface water drainage	Medium	Low Likelihood	Mod/low		TBC	TBC	TBC	TBC
	Migration by liquid flow	Surface water drainage	Medium	Low Likelihood	Mod/low		TBC	TBC	TBC	TBC
		Aquifer	Mild	Low Likelihood	Low		TBC	TBC	TBC	TBC
	Plant uptake	Local flora	Mild	Unlikely	Negligible		TBC	TBC	TBC	TBC
Toxic & phytotoxic heavy metals within shallow soil / groundwater.	Inhalation of fugitive dust	Site workers	Medium	Low Likelihood	Mod/low	Sampling and laboratory testing across the Site.	TBC	TBC	TBC	TBC
		End-users	Severe	Low Likelihood	Moderate		TBC	TBC	TBC	TBC
	Ingestion and absorption via direct contact	Site workers	Medium	Low Likelihood	Mod/low		TBC	TBC	TBC	TBC
		End-users	Severe	Low Likelihood	Moderate		TBC	TBC	TBC	TBC
	Migration by surface run-off	Surface water drainage	Medium	Unlikely	Low		TBC	TBC	TBC	TBC
	Migration in solution via groundwater	Surface water drainage	Medium	Unlikely	Low	Leachate testing and assess ground permeability	TBC	TBC	TBC	TBC
		Aquifer	Mild	Unlikely	Negligible		TBC	TBC	TBC	TBC
	Plant uptake	Local flora	Mild	Unlikely	Negligible		TBC	TBC	TBC	TBC

Source (type and location)	Pathway	Receptor	Initial Assessment for Desk Study Information			Proposed Investigation	Hazard Linkage	Revised Risk	Prosed Remediation/ Management	Residual Risk
			Severity	Prob.	Risk					
Toxic and phytotoxic semi-metals and non-metals within shallow soil / groundwater.	Inhalation of fugitive dust	Site workers	Medium	Low Likelihood	Mod/low	Sampling and laboratory testing across the Site.	TBC	TBC	TBC	TBC
		End-users	Severe	Low Likelihood	Moderate		TBC	TBC	TBC	TBC
	Ingestion and absorption via direct contact	Site workers	Medium	Low Likelihood	Mod/low		TBC	TBC	TBC	TBC
		End-users	Severe	Low Likelihood	Moderate		TBC	TBC	TBC	TBC
	Migration by surface run-off	Surface water drainage	Mild	Unlikely	Negligible		TBC	TBC	TBC	TBC
	Migration in solution via groundwater flow	Surface water drainage	Mild	Unlikely	Negligible	Leachate testing and assess ground permeability	TBC	TBC	TBC	TBC
		Aquifer	Minor	Unlikely	Negligible		TBC	TBC	TBC	TBC
	Plant uptake	Local flora	Minor	Unlikely	Negligible		TBC	TBC	TBC	TBC
Asbestos within Made Ground	Inhalation of fugitive dust	Site workers	Severe	Unlikely	Mod/Low	No source on site. Ground investigation to confirm.	TBC	TBC	TBC	TBC
		End-users	Severe	Unlikely	Mod/Low		TBC	TBC	TBC	TBC
Ground Gas from Made Ground and natural strata	Migration into excavations	Site workers	Medium	Likely	Moderate	Ground investigation to confirm.	TBC	TBC	TBC	TBC
	Migration into development	End-users	Severe	Likely	High		TBC	TBC	TBC	TBC
Aggressive substances (sulphates, acids, phenols, petroleum) in shallow soils / groundwater	Direct contact with construction materials	Buried Structures	Medium	Unlikely	Low	Observation, identification, sampling and laboratory testing across site.	TBC	TBC	TBC	TBC
		Buried Services	Medium	Unlikely	Low		TBC	TBC	TBC	TBC

TBC – To be confirmed by ground investigation and further assessment.

APPENDIX III

GEOTECHNICAL RISK REGISTER

Geotechnical Risk Register

At the time of writing this report it is proposed to develop the site for commercial use, with a single storey building, together with areas of hardstanding (access road and car park).

This risk register is based on desk study information and has been related to a general assumption of the layout supplied by the architects and should be reviewed as the project progresses.

Geotechnical Risk Register

The Geotechnical Risk Register has been compiled to show the degree of risk attached to various ground related aspects of the proposed development. The purpose of the register is to provide an assessment of the risk to the project posed by common ground related problems and identify suitable mitigation measures to control the risk to an acceptable level. The risk register should be developed and refined as the geotechnical design and assessment progresses such that the register will allow the management of the geotechnical risks.

The inclusion of a risk in the register does not constitute confirmation that the problem actually exists at the Site. A probability of 'very unlikely' is indicative of a condition which the available data suggests should not be present. The calculated risk is not the risk that the impact will occur it is the risk that the mitigation will be required to enable the project to progress. For the purposes of this risk register the magnitude of each impact and the resulting severity of risk is measured against that which would could 'normally' be expected for each element. Before incorporation into a project risk register the impacts and risks for each element should be moderated by an assessment of the cost and time implication of individual mitigation measures.

The Geotechnical Risk Register has been developed in general accordance with the guidance presented in the ICE/DETR Document 'Managing Geotechnical Risk' (2001) and the HA documents HD41/03 and HD22/08. The degree of risk (R) is determined by combining an assessment of the probability (P) of the hazard occurring with an assessment of the Impact (I) of the hazard and the associated mitigation required if it occurs (R = P x I). The scale against which the probability and impact are measured and the resulting degree of risk determined is presented below.

Probability	(P)
Very Likely (VLk)	5
Likely (Lk)	4
Plausible (P)	3
Unlikely (U)	2
Very Unlikely (VU)	1

X

Impact	(I)
Very High (VH)	5
High (H)	4
Medium (M)	3
Low (Lw)	2
Very Low (VLw)	1

=

(R)	Risk
20 – 25	Severe (Sv)
15 – 19	Substantial (Sb)
10 – 14	Moderate (Md)
5 – 9	Minor (Mn)
1 – 4	None / Negligible (N)

	Site / Ground Conditions	Hazard	Potential Impact	Before Control			Comments and Proposed Mitigation	Residual Risk after Mitigation
				Probability of Hazard	Magnitude of Impact	Risk		
Contaminated Land	Previous site use.	Contaminated ground.	H&S, environmental damage, pollution requiring remediation. Extra cost to remove or remediate.	Lk 4	VLw 1	N 4	Contaminated Land Risk Assessment included in Desk Study suggests a **moderate** to **high risk** of contamination on site.	N
	Previous site use.	Invasive non-native plant species.	Delays to development. Extra cost to treat and remove.	P 3	M 3	Mn 9	Ecology surveys should be conducted on slope to the rear of the site.	N
Underground Voids	Mine shafts.	Shaft collapse.	Surface deformation, structural damage. H&S. Extra cost and prolonged development programme.	P 3	H 4	Md 12	The Site is located within a coal mining area.	N/A
	Shallow mining.	Workings collapse crown holes, subsidence.	Surface deformation, structural damage. Extra cost and prolonged development programme.	P 3	H 4	Md 12		N/A
	Future deep mining.	Workings consolidation, subsidence.	Surface deformation. Extra cost and prolonged development programme.	VU 1	H 4	N 4		N/A
	Natural cavities; solution features, Caves and Gulls.	Unstable natural ground.	Surface deformation, structural damage. H&S. Extra cost and prolonged development programme.	VU 1	H 4	N 4	The ground underlying the Site is not considered to be susceptible to solution features or natural cavities.	N
	Other voids; basements, sumps, tanks etc.	Collapse, subsidence.	Surface deformation, structural damage. H&S. Extra cost and prolonged development programme.	VLk 5	M 3	Sb 15	Former petrol station, below ground tanks present.	N/A
Slopes and Earthworks	Existing steep slopes on or adjacent to site.	Slope failure.	Site stability; surface deformation, structural damage.	U 2	M 3	Mn 6	Steep slope to the rear of the site, however no ground reprofiling anticipated in this area.	N/A
	Insufficient land available to accommodate design slopes.	Insufficient land available - retaining walls required for slope requirements as conventional earthwork slope may not be possible.	Increased cost of development and prolonged programme.	VU 1	H 4	N 4	Site area is considered adequate for proposal requirements.	N/A
	As-dug cut material unsuitable as fill.	Unstable earthworks.	Surface deformation, structural damage. Extra cost for disposal off site.	VU 1	H 4	N 4	Made Ground is not anticpated to be present on site and the proposal does not require Fill.	N/A
	Insufficient suitable fill.	Import required to achieve design levels.	Increased cost of development.	VU 1	M 3	N 3	No requirement for Fill in proposed development is anticipated.	N/A

	Site / Ground Conditions	Hazard	Potential Impact	Before Control			Comments and Proposed Mitigation	Residual Risk after Mitigation
				Probability of Hazard	Magnitude of Impact	Risk		
Foundations & Substructures	Loose or soft compressible soils at shallow depth.	Ground unsuitable for conventional shallow construction.	Excess settlement/bearing capacity failure. Requirement for alternative foundations. Extra costs associated with mitigation solutions.	U 2	M 3	Mn 6	Underlying strata in anticipated to the firm and suitable for the proposed development.	N
	Hard strata interbedded with softer strata.	Differential settlement.	Damage to foundations. Requirement for alternative foundations. Extra cost associated with mitigation solutions.	P 3	Lw 2	Mn 6	Underlying bedrock is indicated to be at ground level. Ground investigation to confirm depths.	N
	Deep Cut and Fill Earthworks.	Differential movement.	Damage to Floor Slab.	VU 1	Lw 2	N 2	Initial design proposes pad foundations. Bedrock anticipated to be close to surface.	N/A
	Adjacent infrastructure.	Works affecting nearby off-site structures.	Damage to structures. Extra costs and prolonged development programme due to repair works.	VU 1	M 3	N 3	No services on site.	N
	Aggressive Ground Chemistry.	Attack on buried concrete - may affect strength of foundation.	Protection required - potential increase in cost of concrete for use in foundations.	VU 1	Lw 2	N 2	Ground investigation to confirm.	N
Floor slabs and Road Pavements	Soft and compressible near surface soil	Low CBR due to soft formation.	Surface damage or alternative design.	P 3	M 3	Mn 9	Although bedrock is anticipated to be near-surface, soft ground may be encountered, due to significant made ground.	N
	Soft and compressible near surface soil	Settlement of drainage and utility infrastructure.	Increase cost in construction of alternative design.	P 3	Lw 2	Mn 6	Although bedrock is anticipated to be near-surface, soft ground may be encountered, due to significant made ground.	N
	Soils susceptible to volume change with moisture content fluctuation.	Removal of trees may cause heave.	Surface level changes, damage to floor slab and/or foundations.	P 3	H 4	Md 12	Establish PI during ground investigation and design foundations and floor slabs appropriately.	N
	Frost susceptible soils	Frost heave.	Surface damage or alternative design.	VLk 5	Lw 2	Md 10	Underlying bedrock of mudstoen, weathering to clay Ground investigation to confirm depths.	N
	Deep Cut and Fill earthworks	Differential movement.	Damage to floor slab.	VU 1	H 4	N 4	No requirement in the proposed development design.	N/A

	Site / Ground Conditions	Hazard	Potential Impact	Before Control			Comments and Proposed Mitigation	Residual Risk after Mitigation
				Probability of Hazard	Magnitude of Impact	Risk		
Drainage & Flooding	Shallow groundwater / perched water	Exposure of spring lines in cut slopes.	Specialist drainage requirements - increased cost of development.	P 3	M 3	Mn 9	The underlying strata is secondary A aquifer. There is no superficial strata recorded. Groundwater likley to be encountered. Ground investigation will confirm.	N/A
	Low ground and local watercourses	Flooding.	Flood protection required - increase cost and prolonged development programme.	VU 1	M 3	N 3	The Site is not within an area of recorded flooding from surface water.	N/A
	Low permeability strata	Ineffective soakaways.	Alternative drainage design required.	Lk 4	Lw 2	Mn 8	Shallow impermeable bedrock, ground investigation to confirm.	N/A
Temporary Works & Construction Issues	Loose strata at shallow depth	Excavation instability - failure of slope.	Design of temporary support required. Health and safety.	U 2	Lw 2	N 4	Ground investigation will confirm.	N/A
	Hard strata / obstructions at shallow depth	Hard Digging / hard driving / damage to services.	Increased cost and delay to development programme.	P 3	Lw 2	Mn 6	Ground investigation to confirm.	N/A
	Shallow groundwater / perched water	Inundation of excavations.	Increase cost and delay to development programme. Health and safety.	P 3	Lw 2	Mn 6	The underlying strata is secondary A aquifer. There is no superficial strata recorded. Groundwater likley to be encountered. Ground investigation will confirm.	N/A
	Contaminated ground and Japanese Knotweed	Precautions for ground workers.	Increase cost and delay to development programme. Health and safety.	Lk 4	Lw 2	Mn 8	Moderate to high risk of contamination. No Japanese Knotweed encountered on site.	N/A
	UXO's	Unearthing and/or detonation of buried WWII UXO's.	Health and safety - harm to human life. Suspension of groundwork's and development and increased cost.	VU 1	H 4	N 4	Site is not considered to be affected by UXO.	N/A
	Buried services	Unidentified services encountered during excavations.	Health and safety - harm to human life. Suspension of groundwork's and development and increased cost.	VU 1	Lw 2	N 2	Service plans to be provided prior to ground investigation. However, minimal risk is anticipated.	N/A
	Contaminated ground	Increased disposal costs.	Increase cost and delay to development programme. Health and safety.	U 2	Lw 2	N 4	Contaminated Land Risk Assessment included in Desk Study suggests a moderate to high risk of contamination on site.	N/A

APPENDIX IV

GROUNDSURE REPORT

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

419683 , 412872

Order Details

Date: 06/05/2022

Your ref: 82426

Our Ref: GS-8726812

Client: Dom Larkins

Site Details

Location: 419674 412864

Area: 0.17 ha

Authority: Kirklees Council

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

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	2	3	16	41	-
16	1.2	Historical tanks	0	0	1	4	-
16	1.3	Historical energy features	0	0	4	6	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	2	0	0	-
18	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
19	2.1	Historical industrial land uses	2	4	21	59	-
23	2.2	Historical tanks	0	0	1	9	-
23	2.3	Historical energy features	0	0	6	14	-
24	2.4	Historical petrol stations	0	0	0	0	-
24	2.5	Historical garages	0	3	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
26	3.1	Active or recent landfill	0	0	0	0	-
26	3.2	Historical landfill (BGS records)	0	0	0	0	-
27	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
27	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
27	3.5	Historical waste sites	0	0	0	1	-
27	3.6	Licensed waste sites	0	0	0	0	-
28	3.7	Waste exemptions	0	0	0	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
29	4.1	Recent industrial land uses	0	4	7	-	-
30	4.2	Current or recent petrol stations	0	1	0	0	-
31	4.3	Electricity cables	0	0	0	0	-
31	4.4	Gas pipelines	0	0	0	0	-
31	4.5	Sites determined as Contaminated Land	0	0	0	0	-

31	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
31	4.7	Regulated explosive sites	0	0	0	0	-
32	4.8	Hazardous substance storage/usage	0	0	0	0	-
32	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
32	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
32	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
32	4.12	Radioactive Substance Authorisations	0	0	0	0	-
33	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	1	-
33	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
33	4.15	Pollutant release to public sewer	0	0	0	0	-
33	4.16	List 1 Dangerous Substances	0	0	0	0	-
34	4.17	List 2 Dangerous Substances	0	0	0	0	-
34	**4.18**	**Pollution Incidents (EA/NRW)**	3	0	1	2	-
35	4.19	Pollution inventory substances	0	0	0	0	-
35	4.20	Pollution inventory waste transfers	0	0	0	0	-
35	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
36	5.1	Superficial aquifer	None (within 500m)				
37	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
39	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
40	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
40	5.5	Groundwater vulnerability- local information	None (within 0m)				
41	**5.6**	**Groundwater abstractions**	0	0	0	2	24
48	**5.7**	**Surface water abstractions**	0	0	0	0	7
49	**5.8**	**Potable abstractions**	0	0	0	0	9
52	5.9	Source Protection Zones	0	0	0	0	-
52	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
53	**6.1**	**Water Network (OS MasterMap)**	0	2	9	-	-

54	6.2	Surface water features	1	1	2	-	-
55	6.3	WFD Surface water body catchments	1	-	-	-	-
55	6.4	WFD Surface water bodies	0	0	0	-	-
56	6.5	WFD Groundwater bodies	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
57	7.1	Risk of flooding from rivers and the sea	High (within 50m)				
58	7.2	Historical Flood Events	0	0	1	-	-
58	7.3	Flood Defences	0	0	0	-	-
58	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
59	7.5	Flood Storage Areas	0	0	0	-	-
60	7.6	Flood Zone 2	Identified (within 50m)				
61	7.7	Flood Zone 3	Identified (within 50m)				
Page	Section	Surface water flooding					
62	8.1	Surface water flooding	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
64	9.1	Groundwater flooding	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
65	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
66	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
66	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
66	10.4	Special Protection Areas (SPA)	0	0	0	0	0
66	10.5	National Nature Reserves (NNR)	0	0	0	0	0
67	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
67	10.7	Designated Ancient Woodland	0	0	0	0	15
68	10.8	Biosphere Reserves	0	0	0	0	0
68	10.9	Forest Parks	0	0	0	0	0
68	10.10	Marine Conservation Zones	0	0	0	0	0
68	10.11	Green Belt	0	0	1	0	0
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
69	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
69	10.15	Nitrate Sensitive Areas	0	0	0	0	0
70	**10.16**	**Nitrate Vulnerable Zones**	0	0	0	0	1
71	**10.17**	**SSSI Impact Risk Zones**	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	11.4	Listed Buildings	0	0	0	-	-
74	**11.5**	**Conservation Areas**	1	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	**12.1**	**Agricultural Land Classification**	Grade 3 (within 250m)				
77	12.2	Open Access Land	0	0	0	-	-
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	**13.1**	**Priority Habitat Inventory**	1	3	11	-	-
79	13.2	Habitat Networks	0	0	0	-	-
79	13.3	Open Mosaic Habitat	0	0	0	-	-
80	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
81	**14.1**	**10k Availability**	Identified (within 500m)				
82	**14.2**	**Artificial and made ground (10k)**	0	0	2	11	-
84	14.3	Superficial geology (10k)	0	0	0	0	-

84	14.4	Landslip (10k)	0	0	0	0	-
85	**14.5**	**Bedrock geology (10k)**	1	1	0	5	-
86	**14.6**	**Bedrock faults and other linear features (10k)**	0	2	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
87	**15.1**	**50k Availability**	Identified (within 500m)				
88	15.2	Artificial and made ground (50k)	0	0	0	0	-
88	15.3	Artificial ground permeability (50k)	0	0	-	-	-
89	15.4	Superficial geology (50k)	0	0	0	0	-
89	15.5	Superficial permeability (50k)	None (within 50m)				
89	15.6	Landslip (50k)	0	0	0	0	-
89	15.7	Landslip permeability (50k)	None (within 50m)				
90	**15.8**	**Bedrock geology (50k)**	2	2	0	4	-
91	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
91	**15.10**	**Bedrock faults and other linear features (50k)**	0	2	1	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
93	**16.1**	**BGS Boreholes**	0	0	6	-	-
Page	Section	Natural ground subsidence					
95	**17.1**	**Shrink swell clays**	Very low (within 50m)				
96	**17.2**	**Running sands**	Negligible (within 50m)				
97	**17.3**	**Compressible deposits**	Negligible (within 50m)				
98	**17.4**	**Collapsible deposits**	Very low (within 50m)				
99	**17.5**	**Landslides**	Moderate (within 50m)				
101	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
103	18.1	Natural cavities	0	0	0	0	-
104	**18.2**	**BritPits**	0	0	2	8	-
105	**18.3**	**Surface ground workings**	0	0	14	-	-
106	**18.4**	**Underground workings**	0	0	0	0	13
107	18.5	Historical Mineral Planning Areas	0	0	0	0	-

107	18.6	Non-coal mining	0	0	0	0	0
107	18.7	Mining cavities	0	0	0	0	0
108	18.8	JPB mining areas	None (within 0m)				
108	**18.9**	**Coal mining**	Identified (within 0m)				
108	18.10	Brine areas	None (within 0m)				
108	18.11	Gypsum areas	None (within 0m)				
108	18.12	Tin mining	None (within 0m)				
109	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
110	**19.1**	**Radon**	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
111	**20.1**	**BGS Estimated Background Soil Chemistry**	3	1	-	-	-
111	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
112	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
113	21.1	Underground railways (London)	0	0	0	-	-
113	21.2	Underground railways (Non-London)	0	0	0	-	-
113	21.3	Railway tunnels	0	0	0	-	-
113	21.4	Historical railway and tunnel features	0	0	0	-	-
113	21.5	Royal Mail tunnels	0	0	0	-	-
114	21.6	Historical railways	0	0	0	-	-
114	21.7	Railways	0	0	0	-	-
114	21.8	Crossrail 1	0	0	0	0	-
114	21.9	Crossrail 2	0	0	0	0	-
114	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 30/05/2021

Site Area: 0.17ha

Recent site history - 2018 aerial photograph

Capture Date: 01/07/2018

Site Area: 0.17ha

Recent site history - 2012 aerial photograph

Capture Date: 26/03/2012

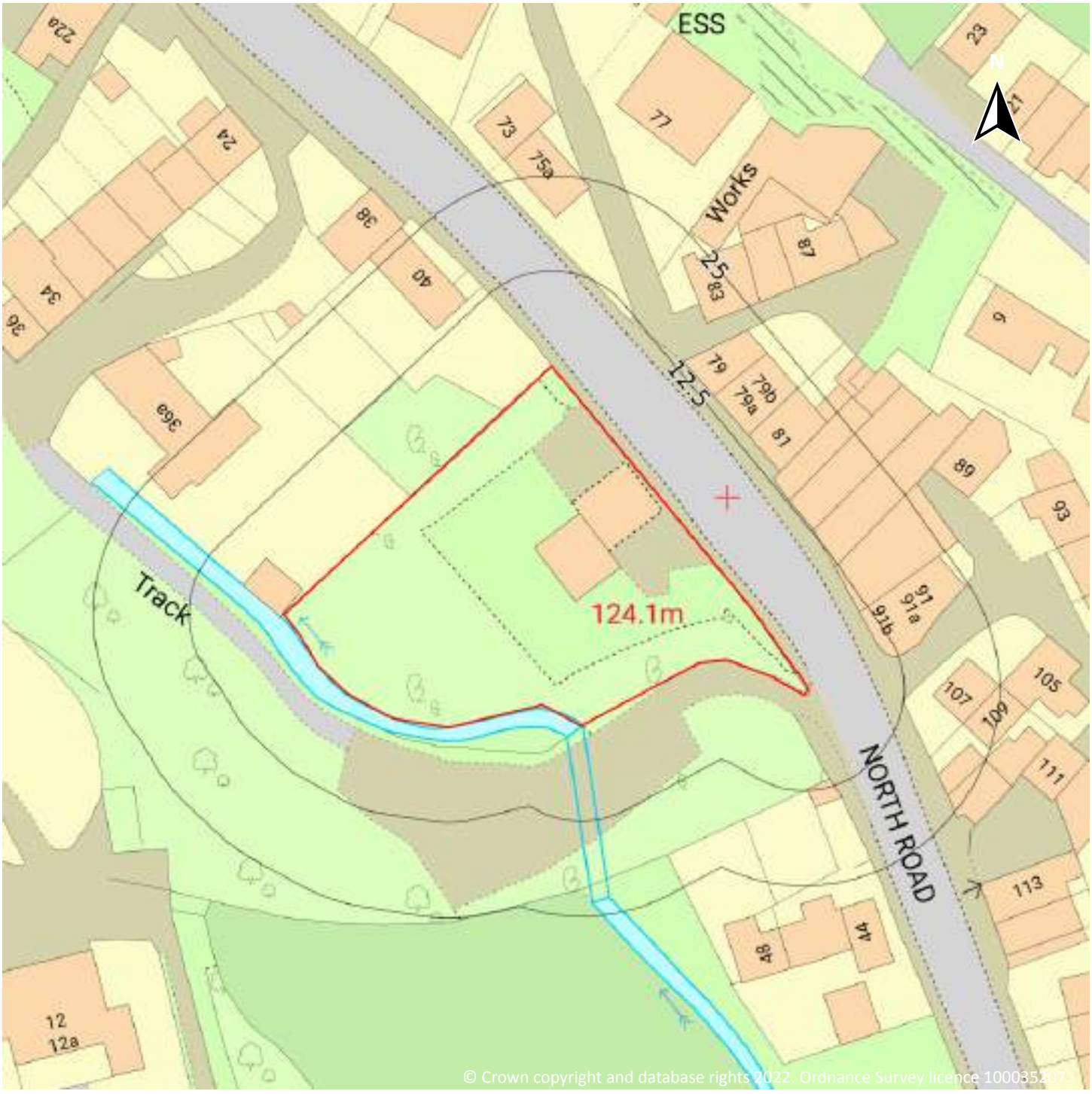
Site Area: 0.17ha

Recent site history - 1999 aerial photograph

Capture Date: 10/07/1999

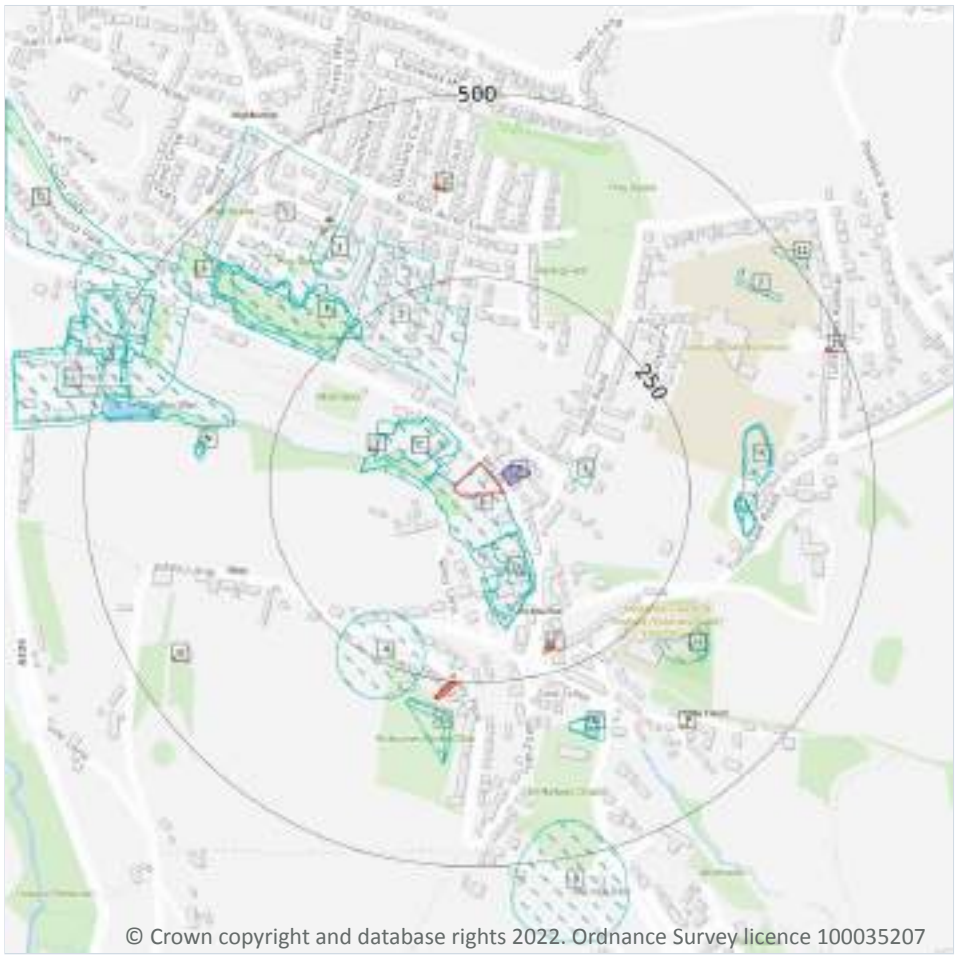
Site Area: 0.17ha

OS MasterMap site plan



Site Area: 0.17ha

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	62

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**	**Unspecified Commercial/Industrial**	**1977**	**1410507**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Unspecified Mills**	**1968**	**1419278**
C	27m NW	Unspecified Disused Mill	1948 - 1951	1470863
C	31m NW	Unspecified Commercial/Industrial	1977	1410508
C	31m NW	Unspecified Mill	1968	1421657
C	51m NW	Unspecified Works	1904	1438198
C	51m NW	Unspecified Disused Mill	1938	1501795
D	53m S	Unspecified Works	1951	1507426
D	53m S	Unspecified Works	1968 - 1990	1537180
D	55m S	Unspecified Works	1938	1487211
D	55m S	Unspecified Works	1904	1500376
1	90m E	Unspecified Old Quarry	1892	1440824
2	93m N	Isolation Hospital	1938 - 1948	1529911
D	100m S	Unspecified Works	1948	1492501
4	183m SW	Unspecified Old Shaft	1904	1418279
F	231m NW	Unspecified Quarry	1968	1502779
F	231m NW	Unspecified Disused Quarry	1977 - 1990	1516350
F	231m NW	Unspecified Disused Quarry	1948 - 1951	1543334
F	235m NW	Unspecified Disused Quarry	1938	1484828
F	235m NW	Unspecified Quarry	1904	1551068
F	237m NW	Unspecified Quarry	1892	1462441
G	282m S	Unspecified Heap	1938	1415148
G	286m S	Unspecified Ground Workings	1948	1551330
H	286m SE	Unspecified Quarry	1892 - 1904	1482639
I	308m W	Unspecified Mill	1968	1421656
I	308m W	Unspecified Mills	1951	1499295
I	308m W	Unspecified Commercial/Industrial	1977 - 1990	1510572
J	311m NW	Unspecified Mill	1990	1503125
K	311m E	Unspecified Disused Quarry	1951	1465116

ID	Location	Land use	Dates present	Group ID
L	312m E	Unspecified Heap	1948	1519142
L	312m E	Unspecified Quarry	1938	1523453
L	315m E	Unspecified Quarry	1904	1510104
5	316m NW	Unspecified Mill	1968 - 1977	1541386
M	320m S	Police Station	1938	1497252
M	321m S	Police Station	1990	1510127
M	321m S	Police Station	1948	1502671
K	324m E	Unspecified Disused Quarry	1938 - 1948	1493654
M	326m S	Police Station	1951	1525072
M	326m S	Police Station	1968 - 1977	1536349
K	328m E	Unspecified Disused Quarry	1967 - 1979	1513658
H	338m SE	Refuse Heap	1938	1436598
N	340m W	Unspecified Heap	1951	1550429
N	342m W	Unspecified Heap	1938	1540217
N	342m W	Unspecified Heap	1948	1480755
J	378m NW	Chimney	1977	1448231
6	406m NW	Unspecified Mill	1977 - 1990	1496189
I	408m W	Sewage Works	1938	1532744
I	409m W	Mill Pond	1948 - 1951	1503717
I	411m W	Unspecified Mills	1938 - 1948	1476902
I	411m W	Mill Pond	1938	1542110
7	422m NE	Unspecified Ground Workings	1979 - 1993	1516074
9	449m S	Disused Colliery	1904	1500073
I	456m NW	Spinning Mills	1951	1441800
I	456m NW	Unspecified Commercial/Industrial	1968 - 1990	1515680
I	457m W	Unspecified Mills	1892 - 1904	1478164
I	463m NW	Unspecified Commercial/Industrial	1968	1410511
I	463m NW	Sewage Works	1951	1490087

ID	Location	Land use	Dates present	Group ID
I	463m NW	Sewage Works	1948	1461563
I	475m W	Unspecified Mills	1938	1472654
11	488m NE	Unspecified Pit	1979 - 1993	1478327
Q	493m NW	Railway Sidings	1968	1476764
Q	493m NW	Railway Sidings	1951	1503062

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**5**

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

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

ID	Location	Land use	Dates present	Group ID
3	121m NW	Unspecified Tank	1913	223376
J	374m NW	Tanks	1977 - 1991	234596
P	394m SE	Unspecified Tank	1913	223373
P	396m SE	Unspecified Tank	1960	223374
8	443m SW	Unspecified Tank	1990	223372

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**10**

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

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

ID	Location	Land use	Dates present	Group ID
E	209m S	Electricity Substation	1990 - 1995	140742
E	214m S	Electricity Substation	1976	136996
G	249m S	Electricity Substation	1990 - 1995	144481
G	249m S	Electricity Substation	1976	137299
O	370m N	Electricity Substation	1977 - 1988	134600
O	375m N	Electricity Substation	1991	139417
J	382m NW	Electricity Substations	1977	137931
J	384m NW	Electricity Substation	1991	129052
J	385m NW	Electricity Substations	1978 - 1988	142535
10	474m NE	Electricity Substation	1977 - 1990	142644

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	**2**

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

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

ID	Location	Land use	Dates present	Group ID
B	11m NE	Garage	1990	43339

ID	Location	Land use	Dates present	Group ID
B	13m NE	Garage	1960 - 1976	45326

This data is sourced from Ordnance Survey / Groundsure.

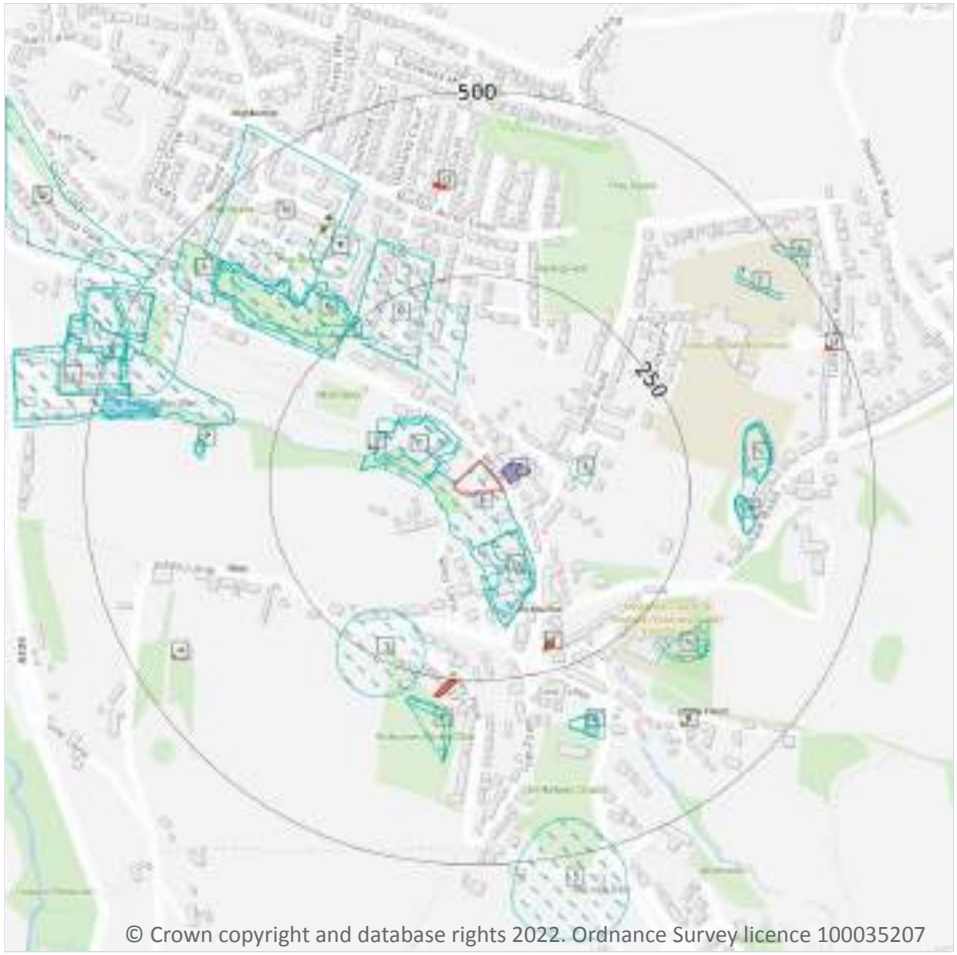
1.6 Historical military land

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	86

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 19**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Unspecified Mills**	**1968**	**1419278**
A	**On site**	**Unspecified Commercial/Industrial**	**1977**	**1410507**
C	27m NW	Unspecified Disused Mill	1948	1470863

ID	Location	Land Use	Date	Group ID
C	31m NW	Unspecified Mill	1968	1421657
C	31m NW	Unspecified Commercial/Industrial	1977	1410508
C	31m NW	Unspecified Disused Mill	1951	1470863
C	51m NW	Unspecified Disused Mill	1938	1501795
C	51m NW	Unspecified Works	1904	1438198
D	53m S	Unspecified Works	1968	1537180
D	53m S	Unspecified Works	1977	1537180
D	53m S	Unspecified Works	1990	1537180
D	53m S	Unspecified Works	1951	1507426
D	55m S	Unspecified Works	1938	1487211
D	55m S	Unspecified Works	1904	1500376
1	90m E	Unspecified Old Quarry	1892	1440824
E	93m N	Isolation Hospital	1938	1529911
D	100m S	Unspecified Works	1948	1492501
E	149m NW	Isolation Hospital	1948	1529911
3	183m SW	Unspecified Old Shaft	1904	1418279
G	231m NW	Unspecified Quarry	1968	1502779
G	231m NW	Unspecified Disused Quarry	1977	1516350
G	231m NW	Unspecified Disused Quarry	1990	1516350
G	231m NW	Unspecified Disused Quarry	1951	1543334
G	235m NW	Unspecified Disused Quarry	1938	1484828
G	235m NW	Unspecified Quarry	1904	1551068
G	237m NW	Unspecified Quarry	1892	1462441
G	247m NW	Unspecified Disused Quarry	1948	1543334
H	282m S	Unspecified Heap	1938	1415148
H	286m S	Unspecified Ground Workings	1948	1551330
H	286m S	Unspecified Ground Workings	1948	1551330
I	286m SE	Unspecified Quarry	1892	1482639

ID	Location	Land Use	Date	Group ID
I	303m SE	Unspecified Quarry	1904	1482639
J	308m W	Unspecified Mill	1968	1421656
J	308m W	Unspecified Commercial/Industrial	1977	1510572
J	308m W	Unspecified Commercial/Industrial	1990	1510572
J	308m W	Unspecified Mills	1951	1499295
K	311m NW	Unspecified Mill	1990	1503125
L	311m E	Unspecified Disused Quarry	1951	1465116
M	312m E	Unspecified Quarry	1938	1523453
M	312m E	Unspecified Heap	1948	1519142
M	312m E	Unspecified Heap	1948	1519142
M	315m E	Unspecified Quarry	1904	1510104
N	316m NW	Unspecified Mill	1968	1541386
N	316m NW	Unspecified Mill	1977	1541386
O	320m S	Police Station	1938	1497252
O	321m S	Police Station	1990	1510127
O	321m S	Police Station	1948	1502671
L	324m E	Unspecified Disused Quarry	1948	1493654
L	324m E	Unspecified Disused Quarry	1938	1493654
O	326m S	Police Station	1968	1536349
O	326m S	Police Station	1977	1536349
O	326m S	Police Station	1951	1525072
L	328m E	Unspecified Disused Quarry	1979	1513658
L	328m E	Unspecified Disused Quarry	1967	1513658
I	338m SE	Refuse Heap	1938	1436598
P	340m W	Unspecified Heap	1951	1550429
P	342m W	Unspecified Heap	1938	1540217
P	342m W	Unspecified Heap	1948	1480755
P	342m W	Unspecified Heap	1948	1480755

ID	Location	Land Use	Date	Group ID
K	378m NW	Chimney	1977	1448231
S	406m NW	Unspecified Mill	1977	1496189
S	406m NW	Unspecified Mill	1990	1496189
J	408m W	Sewage Works	1938	1532744
J	409m W	Mill Pond	1951	1503717
J	411m W	Mill Pond	1938	1542110
J	411m W	Unspecified Mills	1938	1476902
J	412m W	Unspecified Mills	1948	1476902
J	412m W	Mill Pond	1948	1503717
T	422m NE	Unspecified Ground Workings	1993	1516074
T	422m NE	Unspecified Ground Workings	1979	1516074
5	449m S	Disused Colliery	1904	1500073
J	456m NW	Unspecified Commercial/Industrial	1968	1515680
J	456m NW	Unspecified Commercial/Industrial	1977	1515680
J	456m NW	Unspecified Commercial/Industrial	1990	1515680
J	456m NW	Spinning Mills	1951	1441800
J	457m W	Unspecified Mills	1892	1478164
J	458m W	Unspecified Mills	1904	1478164
J	463m NW	Unspecified Commercial/Industrial	1968	1410511
J	463m NW	Sewage Works	1951	1490087
J	463m NW	Sewage Works	1948	1461563
J	463m NW	Sewage Works	1948	1461563
J	475m W	Unspecified Mills	1938	1472654
V	488m NE	Unspecified Pit	1993	1478327
V	488m NE	Unspecified Pit	1979	1478327
W	493m NW	Railway Sidings	1968	1476764
W	493m NW	Railway Sidings	1951	1503062

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	10

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 19**

ID	Location	Land Use	Date	Group ID
2	121m NW	Unspecified Tank	1913	223376
K	374m NW	Tanks	1977	234596
K	374m NW	Tanks	1991	234596
K	374m NW	Tanks	1983	234596
K	374m NW	Tanks	1978	234596
K	374m NW	Tanks	1985	234596
K	374m NW	Tanks	1988	234596
R	394m SE	Unspecified Tank	1913	223373
R	396m SE	Unspecified Tank	1960	223374
4	443m SW	Unspecified Tank	1990	223372

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	20

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 19**

ID	Location	Land Use	Date	Group ID
F	209m S	Electricity Substation	1990	140742
F	210m S	Electricity Substation	1995	140742
F	214m S	Electricity Substation	1976	136996
H	249m S	Electricity Substation	1995	144481

ID	Location	Land Use	Date	Group ID
H	249m S	Electricity Substation	1976	137299
H	250m S	Electricity Substation	1990	144481
Q	370m N	Electricity Substation	1977	134600
Q	371m N	Electricity Substation	1983	134600
Q	371m N	Electricity Substation	1978	134600
Q	371m N	Electricity Substation	1985	134600
Q	371m N	Electricity Substation	1988	134600
Q	375m N	Electricity Substation	1991	139417
K	382m NW	Electricity Substations	1977	137931
K	384m NW	Electricity Substation	1991	129052
K	385m NW	Electricity Substations	1983	142535
K	385m NW	Electricity Substations	1978	142535
K	385m NW	Electricity Substations	1985	142535
K	385m NW	Electricity Substations	1988	142535
U	474m NE	Electricity Substation	1990	142644
U	474m NE	Electricity Substation	1977	142644

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	3

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 19**

ID	Location	Land Use	Date	Group ID
B	11m NE	Garage	1990	43339
B	13m NE	Garage	1976	45326
B	13m NE	Garage	1960	45326

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill

Site Outline

Search buffers in metres (m)

Historical 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	0

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

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

3.5 Historical waste sites

Records within 500m	1

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

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

ID	Location	Address	Further Details	Date
1	359m NW	Site Address: N/A	Type of Site: Ground Workings and Refuse Heap Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1960

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	2

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

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

ID	Location	Site	Reference	Category	Sub-Category	Description
A	370m N	Springields, Burton Acres Lane, Kirkburton, Huddersfield, HD8 0QR	WEX123278	Using waste exemption	Not on a farm	Use of waste in construction
A	370m N	Springields, Burton Acres Lane, Kirkburton, Huddersfield, HD8 0QR	WEX123278	Using waste exemption	Not on a farm	Use of mulch

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

4 Current industrial land use

Site Outline

Search buffers in metres (m)

Recent industrial land uses

Current or recent petrol stations

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	**11**

Current potentially contaminative industrial sites.

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

ID	Location	Company	Address	Activity	Category
A	29m NE	Works	West Yorkshire, HD8	Unspecified Works Or Factories	Industrial Features
A	30m NW	Northern Fibre	Imperial House 38, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RH	Cable, Wire and Fibre Optics	Industrial Products
A	39m E	N T Systems	Burton House, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RL	Electronic Equipment	Industrial Products

ID	Location	Company	Address	Activity	Category
A	42m N	Electricity Sub Station	West Yorkshire, HD8	Electrical Features	Infrastructure and Facilities
A	71m SE	Telephone Exchange	West Yorkshire, HD8	Telecommunications Features	Infrastructure and Facilities
B	95m S	Face Consultants Ltd	Dene House, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RW	Construction Completion Services	Construction Services
B	95m S	C G Flooring Systems Ltd	Dene House, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RW	Construction Completion Services	Construction Services
B	95m S	Concrete Grinding Ltd	Dene House, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RW	Construction Completion Services	Construction Services
1	142m NW	Sewage Pumping Station	West Yorkshire, HD8	Waste Storage, Processing and Disposal	Infrastructure and Facilities
2	166m SE	Kirk Burton Hardware	155, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RR	General Construction Supplies	Industrial Products
3	221m S	Electricity Sub Station	West Yorkshire, HD8	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m **1**

Open, closed, under development and obsolete petrol stations.

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

ID	Location	Company	Address	LPG	Status
A	6m NE	OBSOLETE	North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0QE	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	1

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 29**

ID	Location	Address	Details	
6	479m W	SPRINGFIELD LANE CSO, SPRINGFIELD LANE, KIRKBURTON, HUDDERSFIELD, HD8 0NZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: S/UD/112 Permit Version: 1 Receiving Water: TRIBUTARY OF DEAN BOTTOM DIKE	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 31/05/1963 Effective Date: 31/05/1963 Revocation Date: -

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	6

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 29**

ID	Location	Details	
A	**On site**	**Incident Date: 24/02/2003** **Incident Identification: 139026** **Pollutant: Inert Materials and Wastes** **Pollutant Description: Other Inert Material or Waste**	**Water Impact: Category 3 (Minor)** **Land Impact: Category 3 (Minor)** **Air Impact: Category 4 (No Impact)**
A	**On site**	**Incident Date: 24/02/2003** **Incident Identification: 139026** **Pollutant: Contaminated Water** **Pollutant Description: Vehicle and Plant Washings**	**Water Impact: Category 3 (Minor)** **Land Impact: Category 3 (Minor)** **Air Impact: Category 4 (No Impact)**
A	**On site**	**Incident Date: 24/02/2003** **Incident Identification: 139026** **Pollutant: Inert Materials and Wastes:Contaminated Water** **Pollutant Description: Other Inert Material or Waste:Vehicle and Plant Washings**	**Water Impact: Category 3 (Minor)** **Land Impact: Category 3 (Minor)** **Air Impact: Category 4 (No Impact)**
B	66m S	Incident Date: 31/08/2010 Incident Identification: 817887 Pollutant: Sewage Materials Pollutant Description: Other Sewage Material	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	278m S	Incident Date: 05/09/2001 Incident Identification: 29072 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
5	286m S	Incident Date: 19/12/2005 Incident Identification: 366755 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer

5.1 Superficial aquifer

Records within 500m	0

Aquifer status of groundwater held within superficial geology.

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

Bedrock aquifer

Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	2

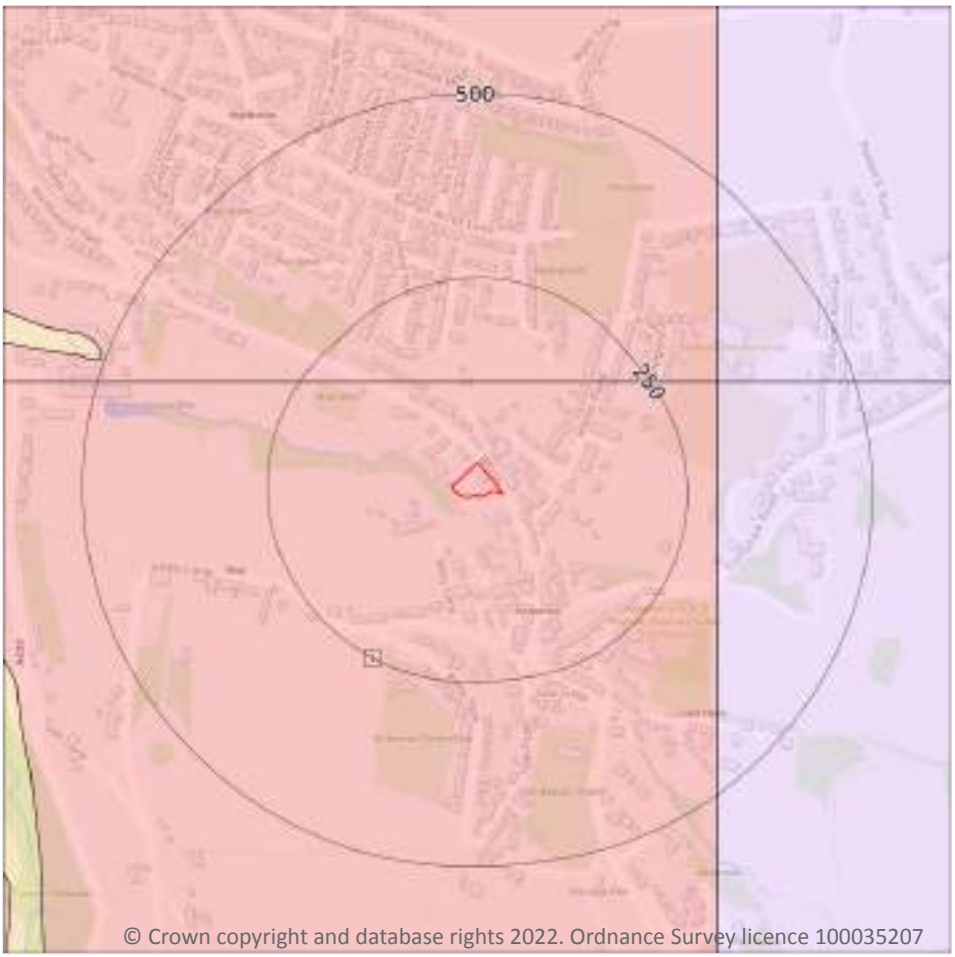
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 37**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	289m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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 39**

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

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**0**

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

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

5.5 Groundwater vulnerability- local information

Records on site	**0**

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

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

Abstractions and Source Protection Zones

Site Outline

Search buffers in metres (m)

Source Protection Zone 1
Inner catchment

Source Protection Zone 2
Outer catchment

Source Protection Zone 3
Total catchment

Source Protection Zone 4
Zone of Special Interest

Source Protection Zone 1c
Inner catchment - confined aquifer

Source Protection Zone 2c
Outer catchment - confined aquifer

Source Protection Zone 3c
Total catchment - confined aquifer

Drinking water abstraction licences

Drinking water abstraction licences
Polygon features

Drinking water abstraction licences
Linear features

Groundwater abstraction licence (point)

Groundwater abstraction licence (area)

Groundwater abstraction licence (linear)

Surface Water Abstractions (point)

Surface Water Abstractions (area)

Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	26

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 41**

ID	Location	Details	
A	363m NW	Status: Historical Licence No: 2/27/11/181 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: THOMAS BIRKHEAD & SONS LIMITED Easting: 419470 Northing: 413190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/12/1997 Expiry Date: - Issue No: 100 Version Start Date: 17/12/1997 Version End Date: -
A	363m NW	Status: Historical Licence No: 2/27/11/181 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - HIGH BURTON Data Type: Point Name: THOMAS BIRKHEAD & SONS LIMITED Easting: 419470 Northing: 413190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/12/1997 Expiry Date: - Issue No: 100 Version Start Date: 17/12/1997 Version End Date: -
-	641m W	Status: Historical Licence No: 2/27/11/167 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: WHITLEY WILLOWS LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 103 Version Start Date: 08/09/2005 Version End Date: -
-	641m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 104 Version Start Date: 26/07/2006 Version End Date: -

ID	Location	Details	
-	641m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE A-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 106 Version Start Date: 17/08/2016 Version End Date: -
-	689m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B3-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418989 Northing: 413081	Annual Volume (m^3): 500,000 Max Daily Volume (m^3): 1,440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	709m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418940 Northing: 412960	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 104 Version Start Date: 26/07/2006 Version End Date: -
-	709m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418940 Northing: 412960	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 107 Version Start Date: 17/08/2016 Version End Date: -

ID	Location	Details	
-	716m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B1-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418941 Northing: 413009	Annual Volume (m^3): 500,000 Max Daily Volume (m^3): 1,440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	721m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B2-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418949 Northing: 413061	Annual Volume (m^3): 500,000 Max Daily Volume (m^3): 1,440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	732m W	Status: Historical Licence No: 2/27/11/167 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEASURES-KIRKBURTON Data Type: Point Name: WHITLEY WILLOWS LTD Easting: 418910 Northing: 412900	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 103 Version Start Date: 08/09/2005 Version End Date: -
-	738m NW	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE - LOWER COAL MEASURES - BROOKFIELD MILLS Data Type: Point Name: PENMOOR UK LTD Easting: 418964 Northing: 413151	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 107 Version Start Date: 17/08/2016 Version End Date: -

ID	Location	Details	
-	742m W	Status: Historical Licence No: 2/27/11/167 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - LOWER COAL MEASURES - KIRKBURTON Data Type: Point Name: WHITLEY WILLOWS LTD Easting: 418900 Northing: 412900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 102 Version Start Date: 01/02/2002 Version End Date: -
-	1191m W	Status: Historical Licence No: 2/27/11/177 Details: Raw Water Supply Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - KIRKBURTON Data Type: Point Name: UNIVERSITY OF HUDDERSFIELD Easting: 418500 Northing: 413200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/10/1995 Expiry Date: - Issue No: 102 Version Start Date: 31/07/1999 Version End Date: -
-	1200m W	Status: Historical Licence No: 2/27/11/177 Details: Raw Water Supply Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-KIRKBURTON Data Type: Point Name: UNIVERSITY OF HUDDERSFIELD Easting: 418510 Northing: 413260	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/10/1995 Expiry Date: - Issue No: 103 Version Start Date: 08/11/2002 Version End Date: -
-	1200m W	Status: Active Licence No: 2/27/11/177 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-KIRKBURTON Data Type: Point Name: UBRIQUE INVESTMENTS LTD Easting: 418510 Northing: 413260	Annual Volume (m^3): 71,000 Max Daily Volume (m^3): 210 Original Application No: 6690 Original Start Date: 10/10/1995 Expiry Date: - Issue No: 105 Version Start Date: 15/06/2006 Version End Date: -

ID	Location	Details	
-	1642m NW	Status: Historical Licence No: 2/27/11/077 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418850 Northing: 414310	Annual Volume (m^3): 59099 Max Daily Volume (m^3): 286.4 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 20/04/2005 Version End Date: -
-	1642m NW	Status: Historical Licence No: 2/27/11/077 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418850 Northing: 414310	Annual Volume (m^3): 360000 Max Daily Volume (m^3): 1200 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 103 Version Start Date: 22/06/2006 Version End Date: -
-	1642m NW	Status: Historical Licence No: 2/27/11/077 Details: Non-Evaporative Cooling Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418850 Northing: 414310	Annual Volume (m^3): 360000 Max Daily Volume (m^3): 1200 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 103 Version Start Date: 22/06/2006 Version End Date: -
-	1643m NW	Status: Active Licence No: 2/27/11/077 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418848 Northing: 414310	Annual Volume (m^3): 85,000 Max Daily Volume (m^3): 1,200 Original Application No: NPS/WR/016706 Original Start Date: 17/03/1966 Expiry Date: - Issue No: 104 Version Start Date: 13/10/2014 Version End Date: -
-	1643m NW	Status: Active Licence No: 2/27/11/077 Details: Non-Evaporative Cooling Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418848 Northing: 414310	Annual Volume (m^3): 85,000 Max Daily Volume (m^3): 1,200 Original Application No: NPS/WR/016706 Original Start Date: 17/03/1966 Expiry Date: - Issue No: 104 Version Start Date: 13/10/2014 Version End Date: -

ID	Location	Details	
-	1659m NW	Status: Historical Licence No: 2/27/11/077 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: SPRINGWOOD ENGINEERING CO LTD Easting: 418800 Northing: 414300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/12/1981 Version End Date: -
-	1659m NW	Status: Historical Licence No: 2/27/11/077 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - FENAY BRIDGE Data Type: Point Name: RELIANCE GEAR CO LTD Easting: 418800 Northing: 414300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 03/07/2001 Version End Date: -
-	1798m SE	Status: Historical Licence No: 2/27/11/178 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: DEARNLEY Easting: 420900 Northing: 411500	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 07/11/1995 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -
-	1798m SE	Status: Active Licence No: 2/27/11/178 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - SHELLEY Data Type: Point Name: DEARNLEY Easting: 420900 Northing: 411500	Annual Volume (m^3): 9,855 Max Daily Volume (m^3): 27 Original Application No: 6692 Original Start Date: 07/11/1995 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1984m NW	Status: Active Licence No: NE/027/0011/029 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE IN SANDSTONE AT WOODSOME HALL Data Type: Point Name: WOODSOME HALL GOLF CLUB LTD Easting: 418356 Northing: 414372	Annual Volume (m^3): 9,400 Max Daily Volume (m^3): 63 Original Application No: NPS/WR/032376 Original Start Date: 15/10/2020 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 15/10/2020 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**7**

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 41**

ID	Location	Details	
-	742m W	Status: Historical Licence No: 2/27/11/168 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: SHEPLEY DYKE Data Type: Point Name: PENMOOR UK LTD Easting: 418900 Northing: 412900	Annual Volume (m^3): 10500 Max Daily Volume (m^3): 136 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 103 Version Start Date: 26/07/2006 Version End Date: -
-	742m W	Status: Historical Licence No: 2/27/11/168 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: SHEPLEY DYKE - HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418900 Northing: 412900	Annual Volume (m^3): 10500 Max Daily Volume (m^3): 136 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 103 Version Start Date: 16/03/2015 Version End Date: -
-	1352m NW	Status: Historical Licence No: 2/27/11/174 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: WOODSOME BECK Data Type: Point Name: KIRKLEES METROPOLITAN COUNCIL & KIRKLEES COUNTRYSIDE UNIT Easting: 418680 Northing: 413810	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/07/1994 Expiry Date: - Issue No: 100 Version Start Date: 14/07/1994 Version End Date: -

ID	Location	Details	
-	1392m N	Status: Historical Licence No: 2/27/11/078 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: BELDON BROOK Data Type: Point Name: SPRINGWOOD ENGINEERING CO LTD Easting: 419200 Northing: 414200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 30/06/1980 Version End Date: -
-	1392m N	Status: Historical Licence No: 2/27/11/078 Details: Lake & Pond Throughflow Direct Source: SURFACE WATER Point: BELDON BROOK - FENAY BRIDGE Data Type: Point Name: RELIANCE GEAR COMPANY LIMITED Easting: 419200 Northing: 414200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 18/06/2002 Version End Date: -
-	1392m N	Status: Historical Licence No: 2/27/11/078 Details: Lake & Pond Throughflow Direct Source: SURFACE WATER Point: BELDON BROOK - FENAY BRIDGE Data Type: Point Name: RELIANCE GEAR CO LTD Easting: 419200 Northing: 414200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 18/06/2002 Version End Date: -
-	1405m N	Status: Historical Licence No: 2/27/11/078 Details: Lake & Pond Throughflow Direct Source: SURFACE WATER Point: BELDON BROOK-FENAY BRIDGE-HUDDERSFIELD Data Type: Point Name: MALLINSON Easting: 419190 Northing: 414210	Annual Volume (m^3): 7,728 Max Daily Volume (m^3): 254.58 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 103 Version Start Date: 20/06/2004 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**9**

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 41**

ID	Location	Details	
-	641m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 104 Version Start Date: 26/07/2006 Version End Date: -
-	641m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE A-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 106 Version Start Date: 17/08/2016 Version End Date: -
-	689m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B3-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418989 Northing: 413081	Annual Volume (m^3): 500,000 Max Daily Volume (m^3): 1,440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	709m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418940 Northing: 412960	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 104 Version Start Date: 26/07/2006 Version End Date: -

ID	Location	Details	
-	709m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418940 Northing: 412960	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 107 Version Start Date: 17/08/2016 Version End Date: -
-	716m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B1-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418941 Northing: 413009	Annual Volume (m^3): 500,000 Max Daily Volume (m^3): 1,440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	721m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B2-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418949 Northing: 413061	Annual Volume (m^3): 500,000 Max Daily Volume (m^3): 1,440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	738m NW	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE - LOWER COAL MEASURES - BROOKFIELD MILLS Data Type: Point Name: PENMOOR UK LTD Easting: 418964 Northing: 413151	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 107 Version Start Date: 17/08/2016 Version End Date: -

ID	Location	Details	
-	1200m W	Status: Active Licence No: 2/27/11/177 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-KIRKBURTON Data Type: Point Name: UBRIQUE INVESTMENTS LTD Easting: 418510 Northing: 413260	Annual Volume (m^3): 71,000 Max Daily Volume (m^3): 210 Original Application No: 6690 Original Start Date: 10/10/1995 Expiry Date: - Issue No: 105 Version Start Date: 15/06/2006 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	**11**

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 53**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**Box Ings Dike**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	30m NW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Dean Bottom Dike
A	50m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Dean Bottom Dike
A	65m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Box Ings Dike
A	69m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Box Ings Dike
A	78m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
2	84m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Box Ings Dike
3	84m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	85m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Dean Bottom Dike
B	131m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	202m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Box Ings Dike

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**4**

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 53**

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 53**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Fenay beck from Source to River Colne**	**GB104027063340**	**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 53**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	674m W	River	Fenay beck from Source to River Colne	GB104027063340	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 53**

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

Site Outline

Search buffers in metres (m)

River and coastal flooding:

High

Medium

Low

Very Low

Historical Flood Events

Areas Used for Flood Storage

Areas Benefiting from Flood Defences

Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	7

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

Features are displayed on the River and coastal flooding map on **page 57**

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

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

7.2 Historical Flood Events

Records within 250m	**1**

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.

Features are displayed on the River and coastal flooding map on **page 57**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
G	184m S	Low Gate Lane, Kirkburton	2008-01-10 2008-01-10	Main river	Obstruction/blockage - culvert	Fluvial

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

Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

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.

Features are displayed on the River and coastal flooding map on **page 57**

Location	Type
On site	**Zone 2 - (Fluvial /Tidal Models)**

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

7.7 Flood Zone 3

Records within 50m	1

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

Features are displayed on the River and coastal flooding map on **page 57**

Location	Type
On site	**Zone 3 - (Fluvial Models)**

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

8 Surface water flooding

Site Outline
Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, Greater than 1.0m**
Highest risk within 50m	**1 in 30 year, Greater than 1.0m**

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

Features are displayed on the Surface water flooding map on **page 62**

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

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding

Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

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

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

Features are displayed on the Groundwater flooding map on **page 64**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	15

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

Features are displayed on the Environmental designations map on **page 65**

ID	Location	Name	Woodland Type
2	533m S	Shelley Wood	Ancient & Semi-Natural Woodland
3	708m SW	Hartley Bank Wood	Ancient Replanted Woodland
4	735m S	Shelley Wood	Ancient & Semi-Natural Woodland
5	922m SW	Hartley Bank Wood	Ancient Replanted Woodland
6	1037m SW	Hartley Bank Wood	Ancient Replanted Woodland
7	1083m SE	Shelley Wood	Ancient Replanted Woodland
8	1127m N	Lepton Great Wood	Ancient & Semi-Natural Woodland
-	1306m W	North Spring Wood	Ancient Replanted Woodland
-	1404m W	Carr Wood	Ancient & Semi-Natural Woodland
11	1643m SW	Hartley Bank Wood	Ancient Replanted Woodland
-	1920m SW	Birks Wood	Ancient & Semi-Natural Woodland
-	1932m SW	Birks Wood	Ancient Replanted Woodland
-	1936m S	Shepley Mill Wood	Ancient & Semi-Natural Woodland
-	1951m S	Shepley Mill Wood	Ancient & Semi-Natural Woodland
-	1978m S	Shepley Mill Wood	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	1

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

Features are displayed on the Environmental designations map on **page 65**

ID	Location	Name	Local Authority name
1	99m 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

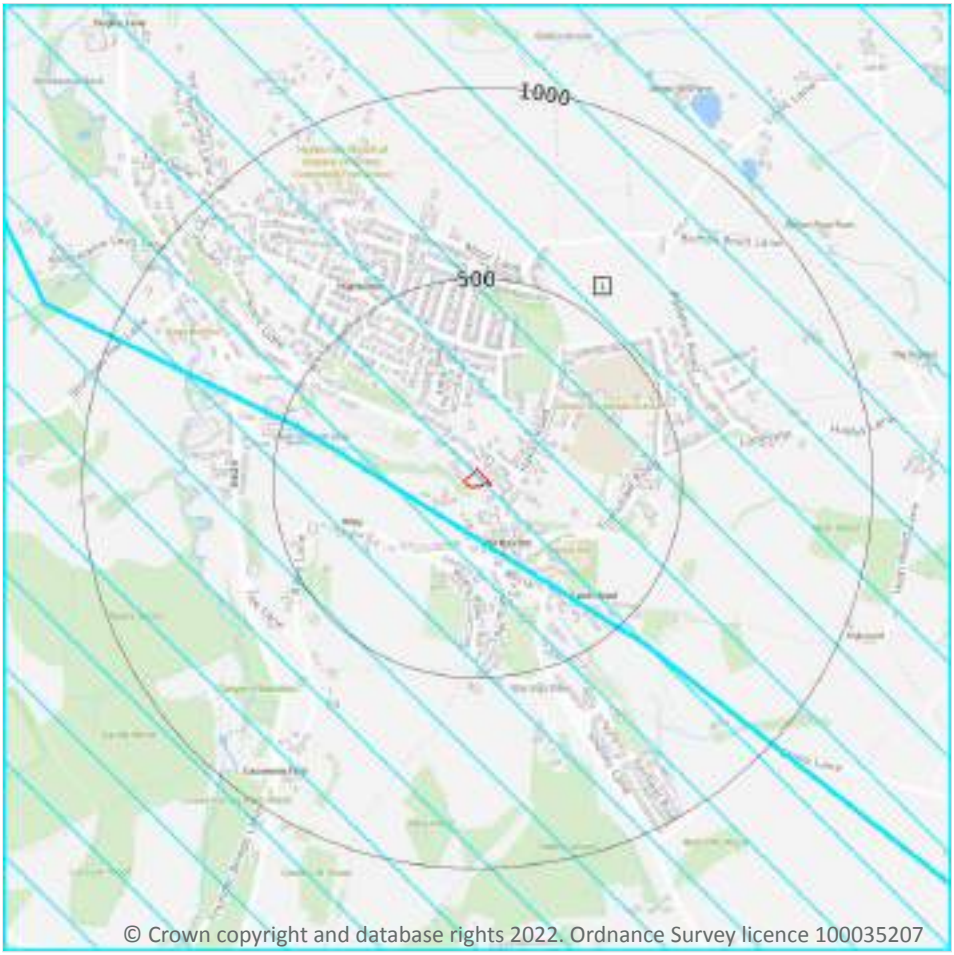
Records within 2000m	**1**

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

Location	Name	Type	NVZ ID	Status
1518m SE	River Dearne NVZ	Surface Water	278	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	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**	**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.

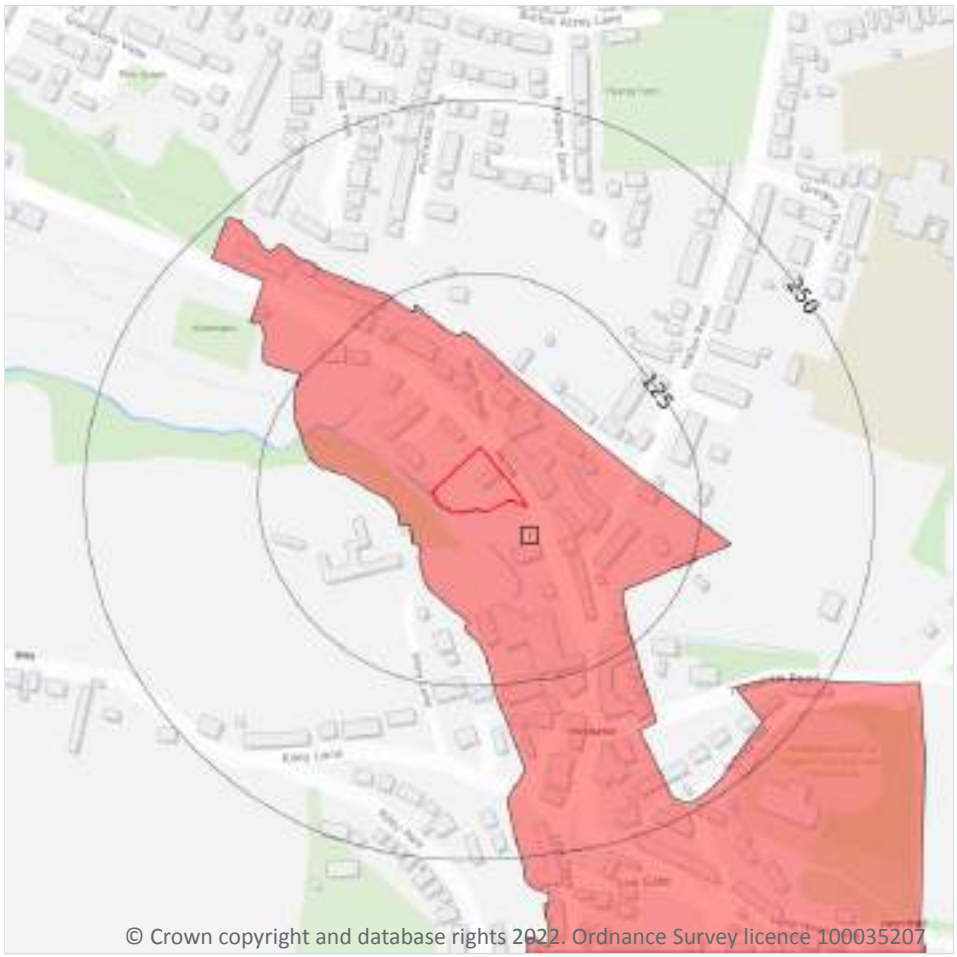
10.18 SSSI Units

Records within 2000m	0

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	0

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.

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

11.5 Conservation Areas

Records within 250m	1

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

Features are displayed on the Visual and cultural designations map on **page 73**

ID	Location	Name	District	Date of designation
1	**On site**	**Kirkburton**	**Kirklees**	**01/08/1980**

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

11.6 Scheduled Ancient Monuments

Records within 250m	**0**

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

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

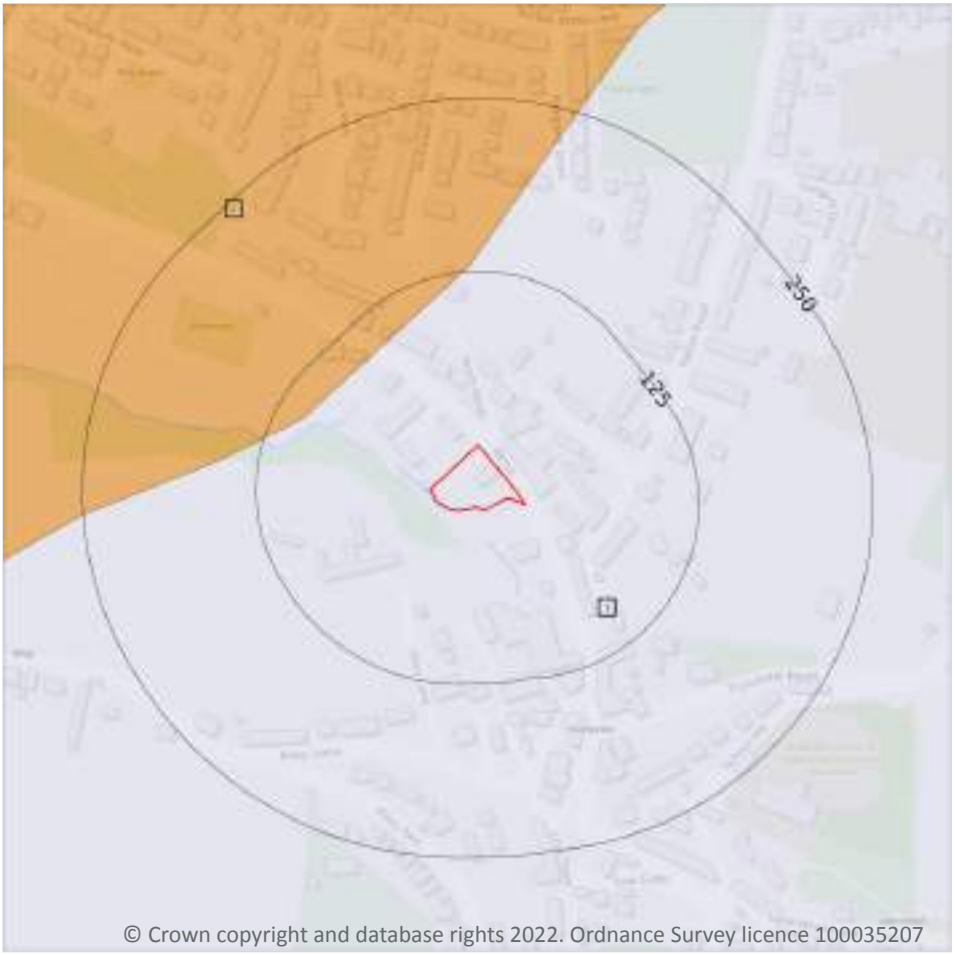
11.7 Registered Parks and Gardens

Records within 250m	**0**

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

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

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

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

ID	Location	Classification	Description
2	100m NW	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

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

13.1 Priority Habitat Inventory

Records within 250m	**15**

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	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
2	3m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	46m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	50m NW	No main habitat but additional habitats present	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
A	68m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	85m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	104m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	131m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	197m NE	No main habitat but additional habitats present	Additional: TORCH (INV 50%)
B	201m NE	Traditional orchard	Overruled by Traditional Orchards HAP Inventory dataset
6	220m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	236m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	240m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	246m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
10	249m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	**0**

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	**0**

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	2

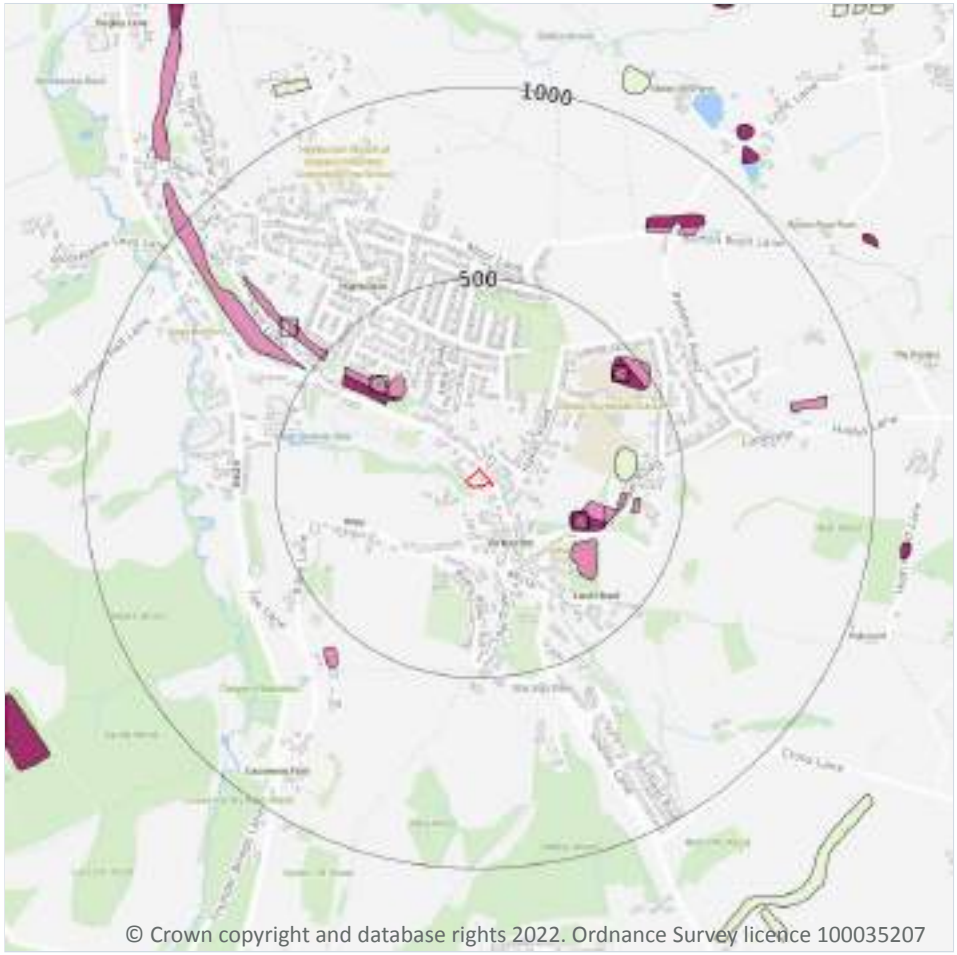
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 81**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SE11SE**
2	289m E	Full	Full	Full	Full	SE21SW

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 **13**

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 82**

ID	Location	LEX Code	Description	Rock description
A	219m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	248m E	WGR-VOID	Worked Ground (Undivided)	Void
A	265m SE	WGR-VOID	Worked Ground (Undivided)	Void
B	276m NW	WGR-VOID	Worked Ground (Undivided)	Void

ID	Location	LEX Code	Description	Rock description
B	277m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	295m E	WGR-VOID	Worked Ground (Undivided)	Void
A	305m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	325m E	WMGR-ARTDP	Infilled Ground	Artificial Deposit
A	331m E	WGR-VOID	Worked Ground (Undivided)	Void
A	370m E	WGR-VOID	Worked Ground (Undivided)	Void
C	417m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
C	468m NE	WGR-VOID	Worked Ground (Undivided)	Void
1	488m NW	WGR-VOID	Worked Ground (Undivided)	Void

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

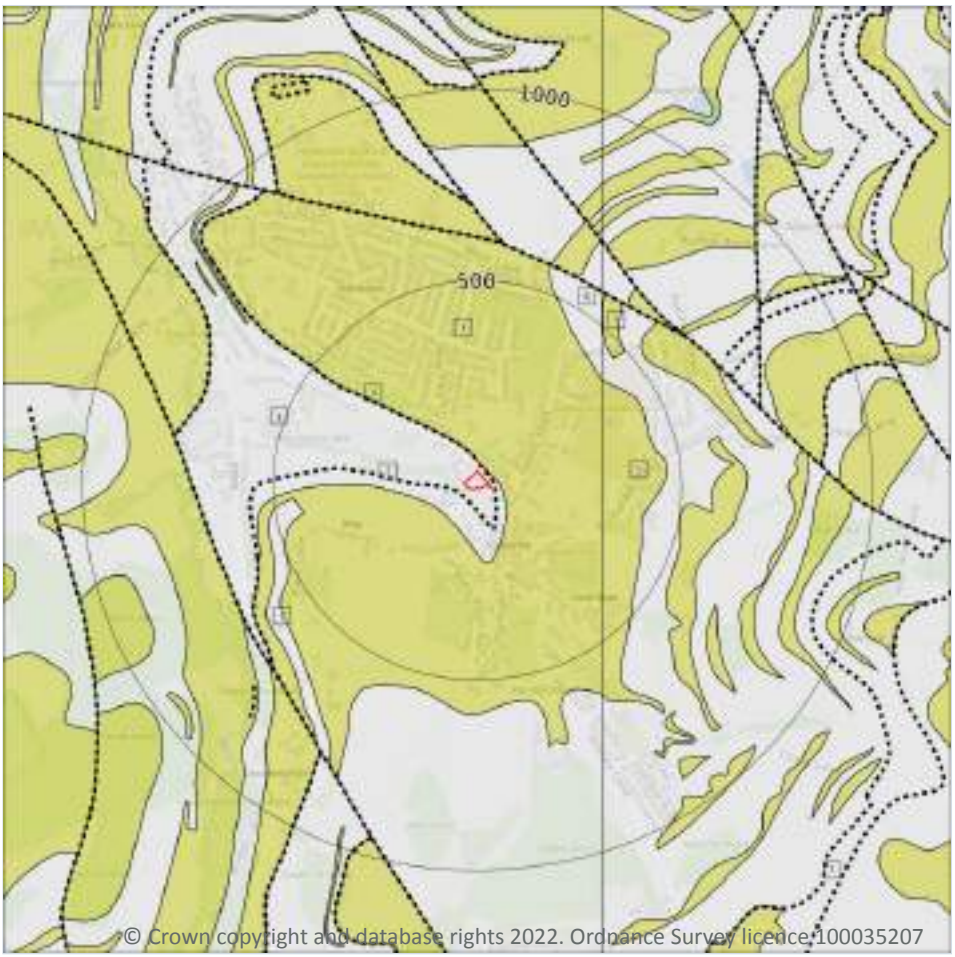
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m **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**	**PLCM-MDSS**	**Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone**	**Langsettian Sub-age**
3	17m NE	KKBS-SDST	Kirkburton Sandstone - Sandstone	Langsettian Sub-age
5	289m E	KKBS-SDST	Kirkburton Sandstone - Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
6	403m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
7	403m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
8	427m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
9	462m NE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	**2**

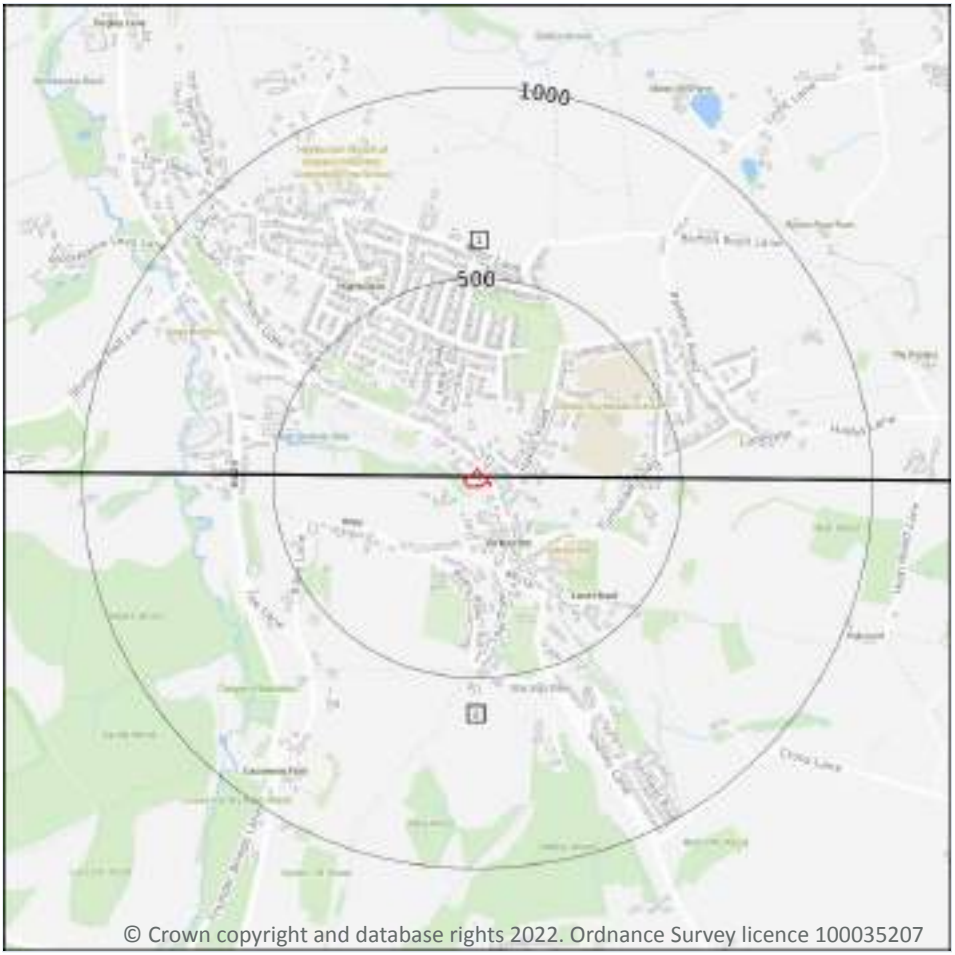
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

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

ID	Location	Category	Description
2	10m E	ROCK	Coal seam, inferred
4	24m N	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	2

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**
2	**On site**	**Full**	**Full**	**Full**	**Full**	**EW086_glossop_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

15.4 Superficial geology (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

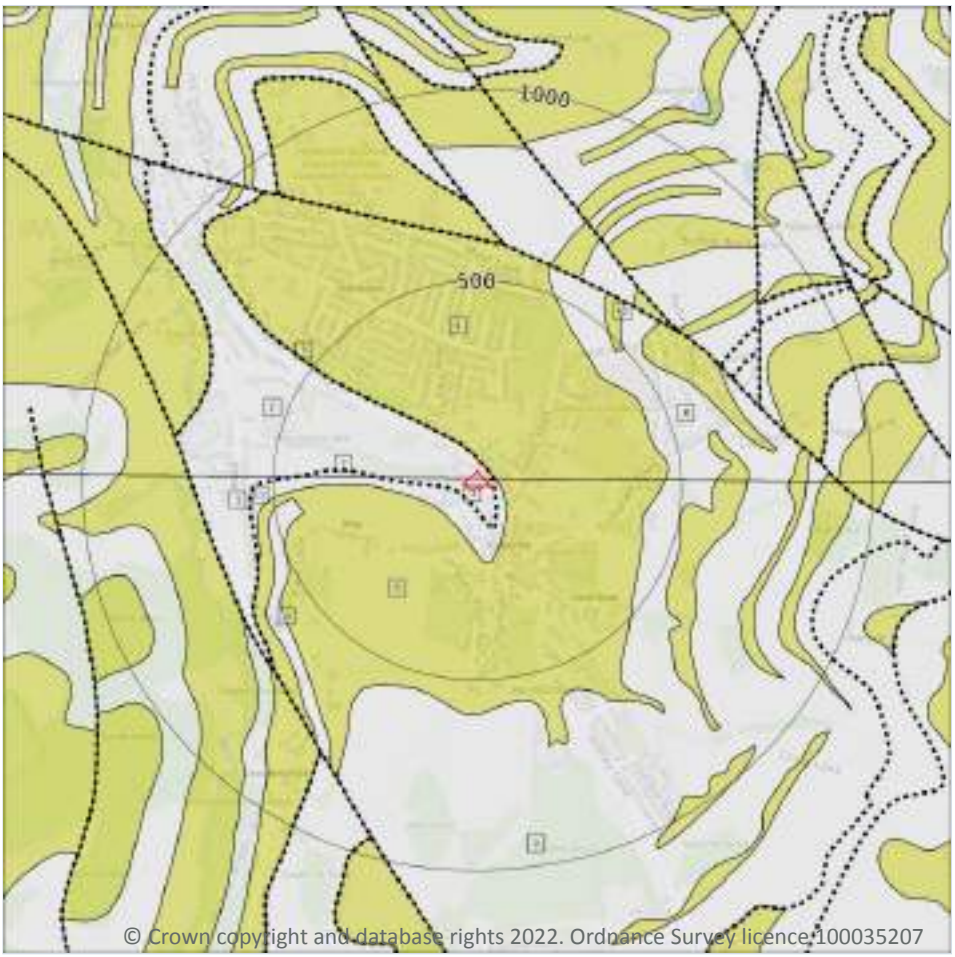
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m **8**

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 90**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PLCM-MDSS**	**PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE**	**WESTPHALIAN**
2	**On site**	**PLCM-MDSS**	**PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE**	**WESTPHALIAN**
4	21m NE	KKBS-SDST	KIRKBURTON SANDSTONE - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
6	21m NE	KKBS-SDST	KIRKBURTON SANDSTONE - SANDSTONE	WESTPHALIAN
8	405m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
9	407m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	427m W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
12	479m NE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**2**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Moderate**	**Low**
21m NW	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**4**

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

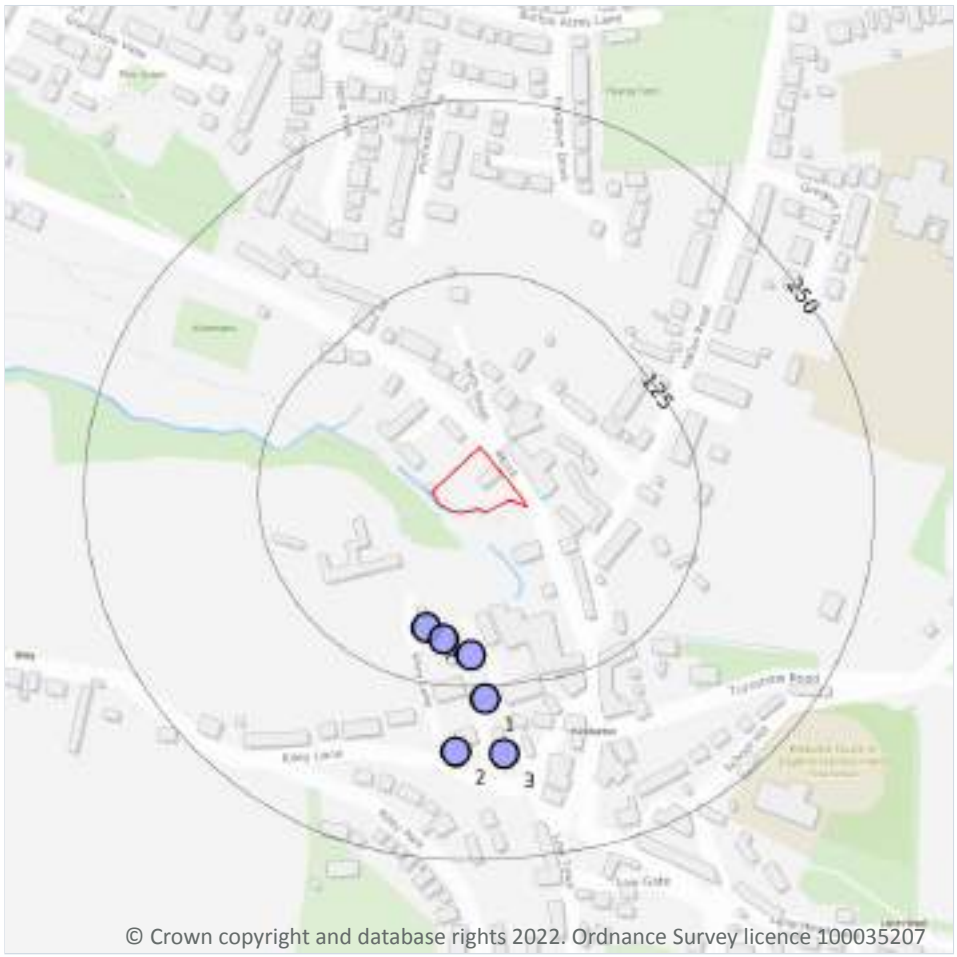
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 90**

ID	Location	Category	Description
3	9m E	ROCK	Coal seam, inferred
5	21m NE	ROCK	Coal seam, inferred
7	221m W	ROCK	Coal seam, inferred

ID	Location	Category	Description
11	443m W	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	6

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

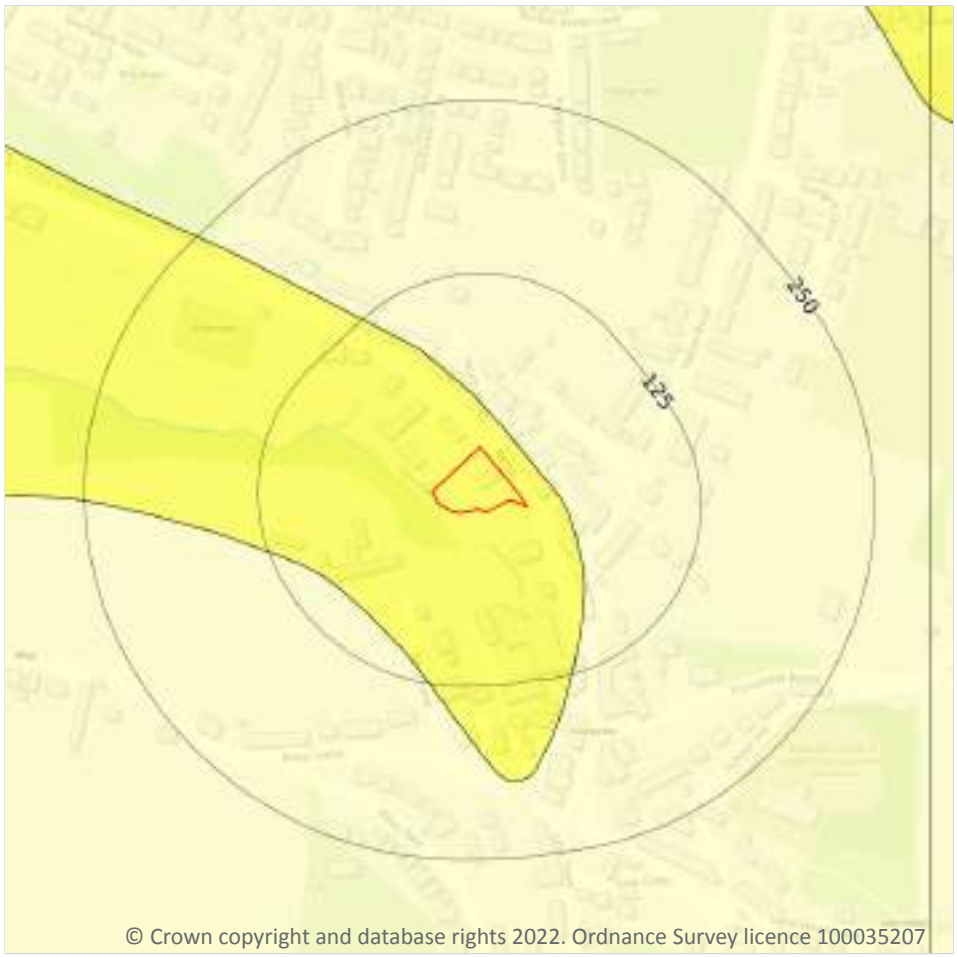
Features are displayed on the Boreholes map on **page 93**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	86m S	419638 412761	KIRKBURTON MENTAL HOME 1	4.5	N	41468
A	92m S	419650 412753	KIRKBURTON MENTAL HOME 3	4.5	N	41470
A	103m S	419670 412741	KIRKBURTON MENTAL HOME 2	4.25	N	41469

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	134m S	419680 412710	KIRKBURTON MENTAL HOME 4	3.15	N	41471
2	172m S	419659 412672	KIRKBURTON MENTAL HOME 5	4.25	N	41472
3	175m S	419694 412670	KIRKBURTON MENTAL HOME 6	3.0	N	41473

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	2

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

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

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**
21m NE	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands

Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	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

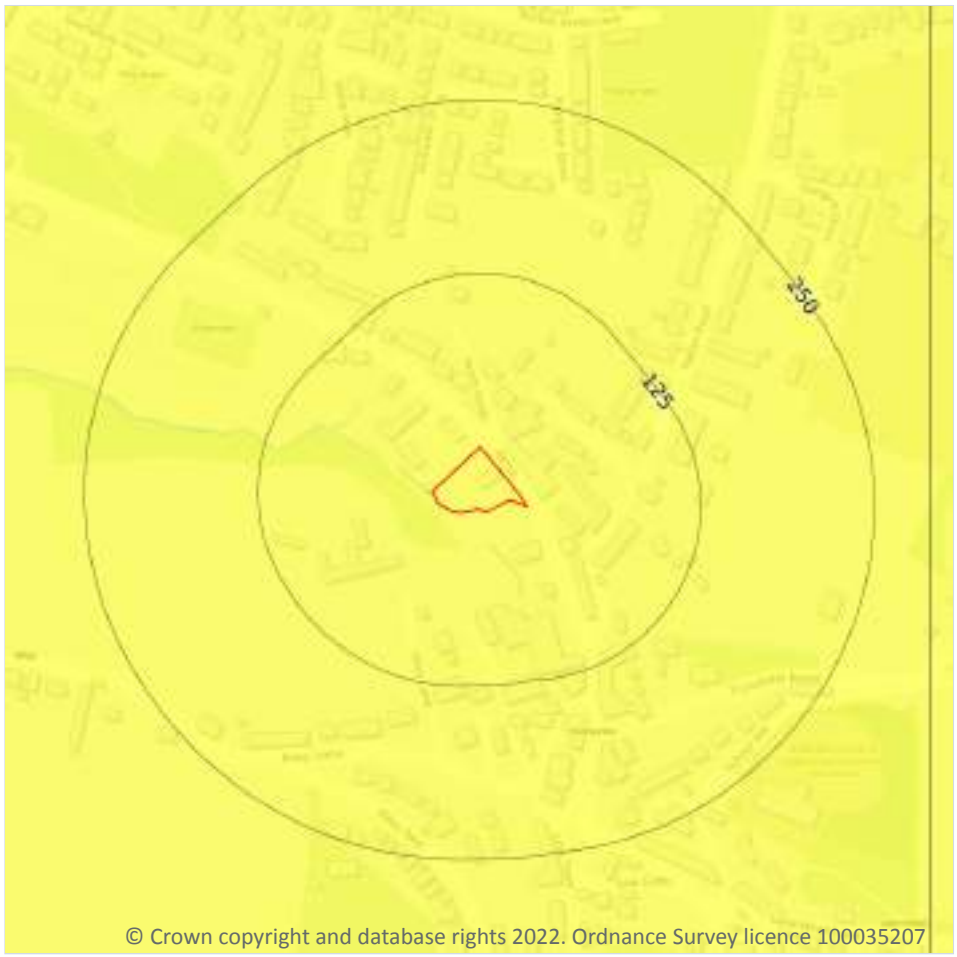
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

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

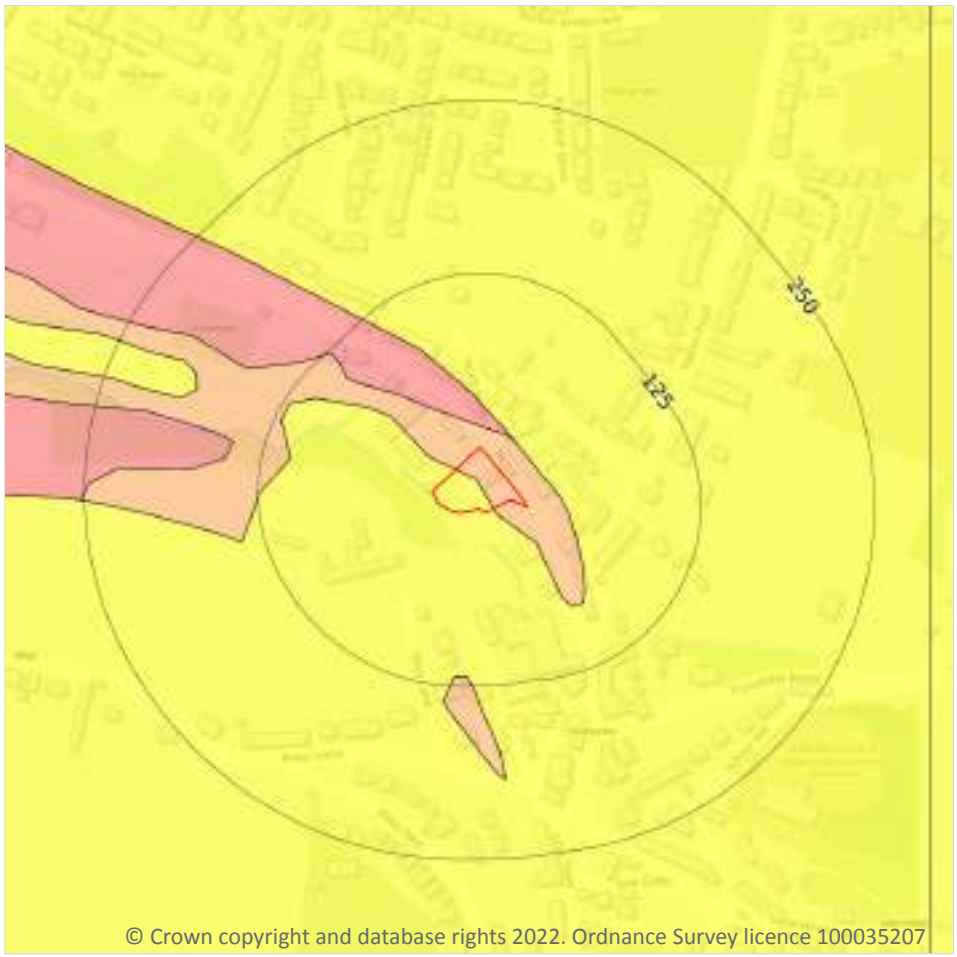
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

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



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	3

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.**

Location	Hazard rating	Details
On site	**Low**	**Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.**
14m N	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks

Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

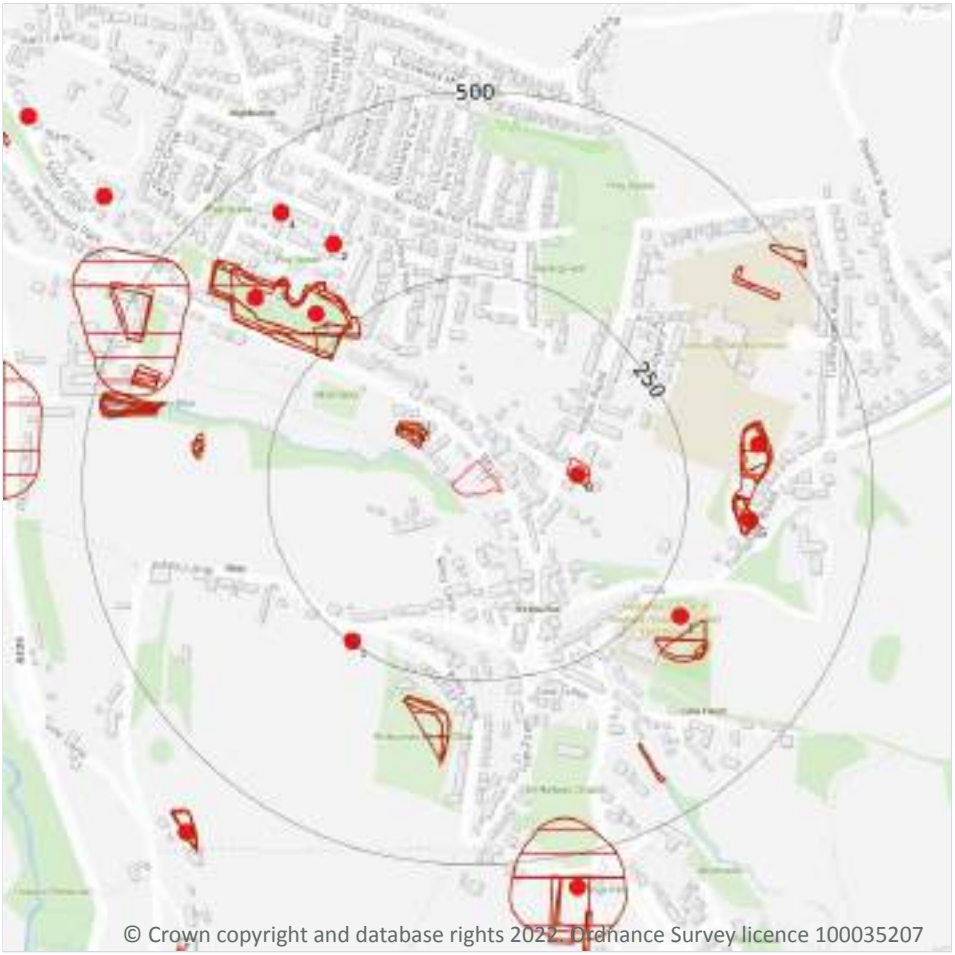
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 101**

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	10

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 103**

ID	Location	Details	Description
B	103m E	Name: Dean Top Address: Kirkburton, 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
1	246m SW	Name: Riley Pit Address: Kirkburton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
E	293m SE	Name: Little Bretton Address: Kirkburton, 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	294m NW	Name: Burton Dean Address: Highburton, 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
G	336m E	Name: Dene House Address: Kirkburton, 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

ID	Location	Details	Description
F	351m E	Name: Shepley Side Address: Kirkburton, 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
2	352m NW	Name: Blind Lane Quarries Address: Highburton, 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
G	354m E	Name: Little Bretton Address: Kirkburton, 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	366m NW	Name: Burton Dean Address: Highburton, 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
4	427m NW	Name: Blind Lane Quarries Address: Highburton, 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	**14**

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 103**

ID	Location	Land Use	Year of mapping	Mapping scale
A	66m NW	Reservoirs	1948	1:10560
A	71m NW	Reservoir	1938	1:10560
A	71m NW	Ponds	1904	1:10560
A	72m NW	Ponds	1892	1:10560
A	72m NW	Reservoirs	1951	1:10560
B	90m E	Unspecified Old Quarry	1892	1:10560
C	231m NW	Unspecified Disused Quarry	1990	1:10000
C	231m NW	Unspecified Disused Quarry	1951	1:10560
C	231m NW	Unspecified Quarry	1968	1:10560
C	231m NW	Unspecified Disused Quarry	1977	1:10000
C	235m NW	Unspecified Disused Quarry	1938	1:10560
C	235m NW	Unspecified Quarry	1904	1:10560
C	237m NW	Unspecified Quarry	1892	1:10560
C	247m NW	Unspecified Disused Quarry	1948	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m **13**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 103**

ID	Location	Land Use	Year of mapping	Mapping scale
-	717m N	Unspecified Shaft	1904	1:10560
-	721m N	Unspecified Old Shaft	1938	1:10560
P	722m SW	Air Shaft	1968	1:10560
P	724m SW	Air Shaft	1951	1:10560
-	728m N	Unspecified Disused Shaft	1968	1:10560
-	728m N	Unspecified Disused Shaft	1977	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
-	728m N	Unspecified Disused Shaft	1990	1:10000
-	728m N	Unspecified Old Shaft	1951	1:10560
-	731m SW	Air Shaft	1948	1:10560
-	731m SW	Air Shaft	1904	1:10560
-	781m N	Air Shaft	1938	1:10560
-	781m N	Air Shaft	1904	1:10560
-	789m N	Air Shaft	1951	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	**0**

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	**0**

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	1

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

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

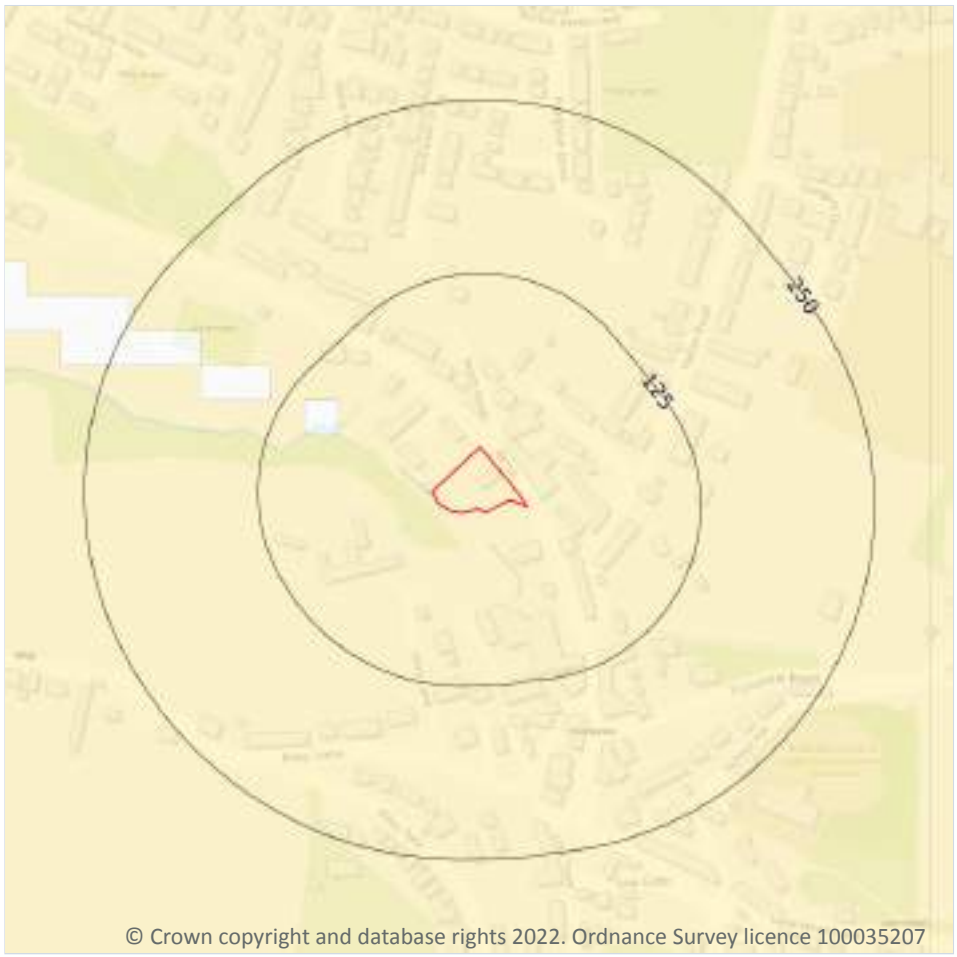
18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

Greater than 30%

Between 10% and 30%

Between 5% and 10%

Between 3% and 5%

Between 1% and 3%

Less than 1%

19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 110**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 1% and 3%**	**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	4

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
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**
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**
15m NE	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 km^2).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

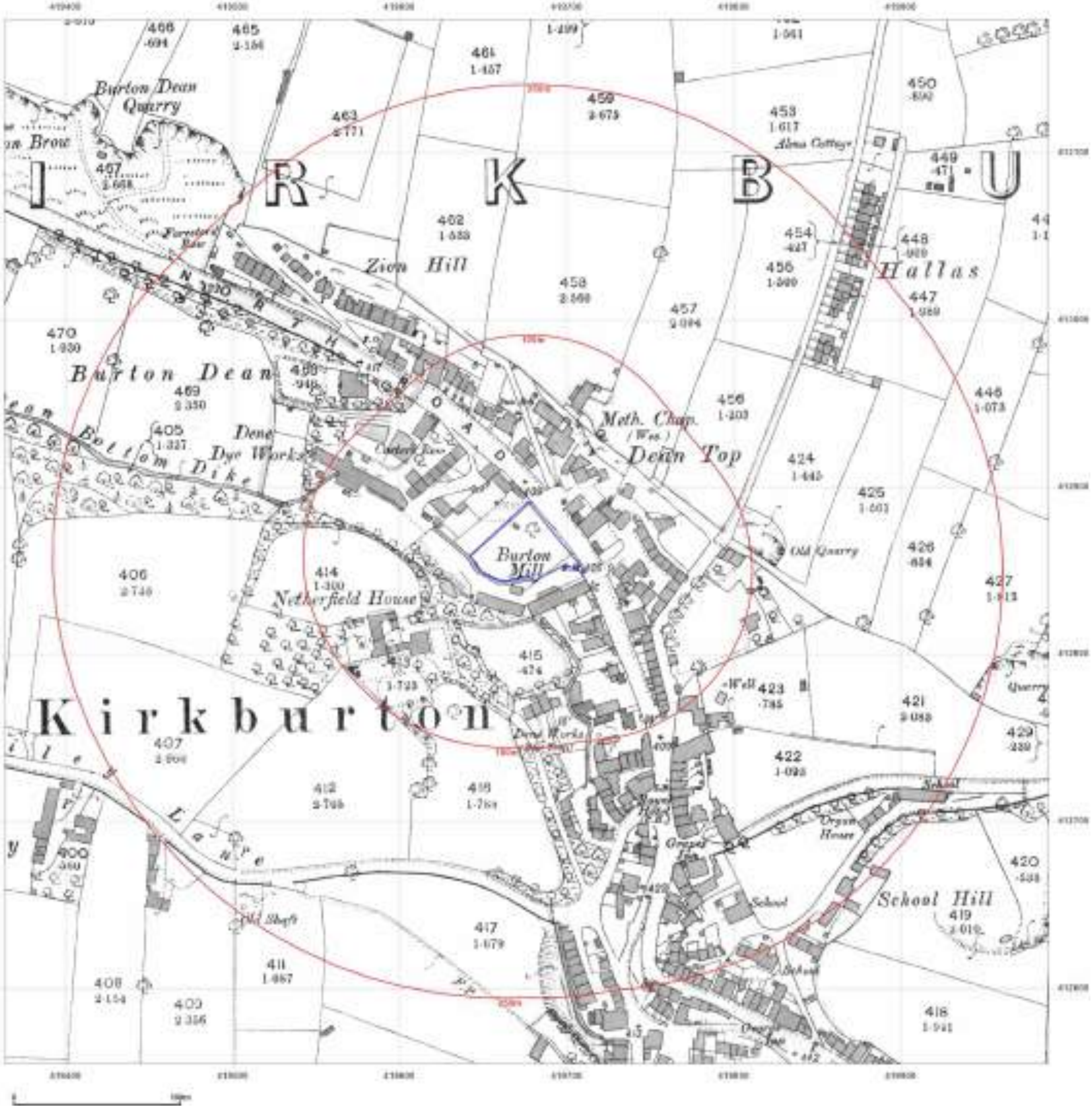
Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

Terms and conditions

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

APPENDIX V

HISTORICAL MAPS



Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series

Map date: **1893**

Scale: 1:2,500

Printed at: 1:2,500

N E S W

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

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

Production date: 06 May 2022

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

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series
Map date: 1906
Scale: 1:2,500
Printed at: 1:2,500

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

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Production date: 06 May 2022

Map legend available at:
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Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series
Map date: **1913**
Scale: 1:2,500
Printed at: 1:2,500

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W E
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Surveyed 1913
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 06 May 2022

Map legend available at:
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Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: **1961**
Scale: 1:2,500
Printed at: 1:2,500

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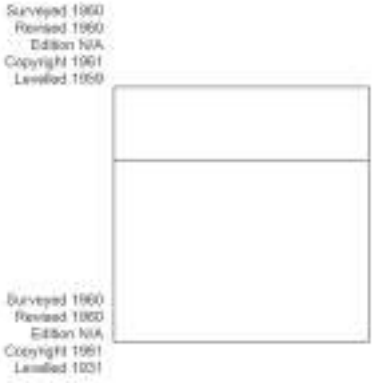

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Production date: 06 May 2022

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

Groundsure INSIGHTS

Site Details:

419683 , 412872

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Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: 1961
Scale: 1:2,500
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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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

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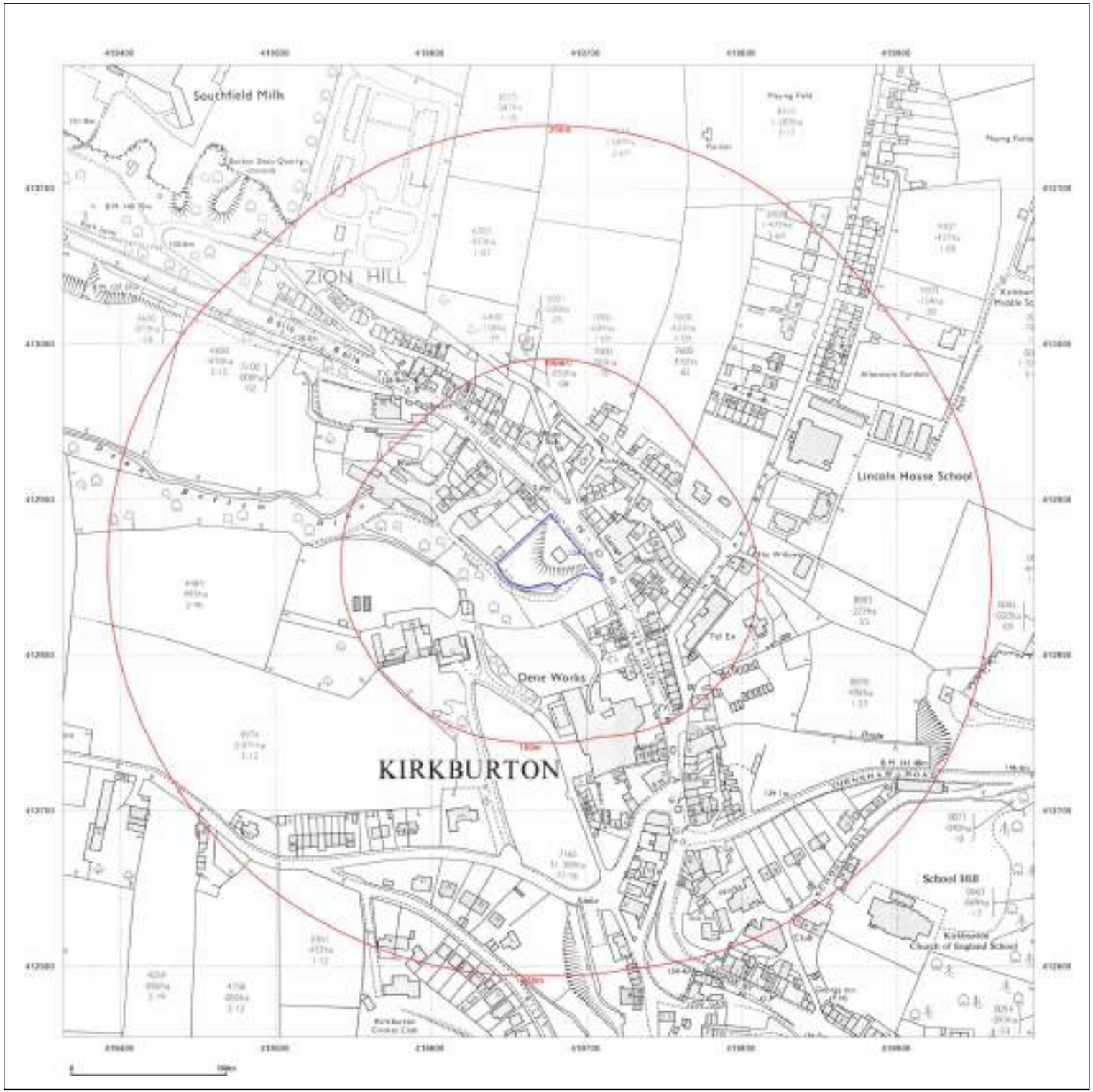

Groundsure INSIGHTS

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Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: **1978**
Scale: 1:2,500
Printed at: 1:2,500

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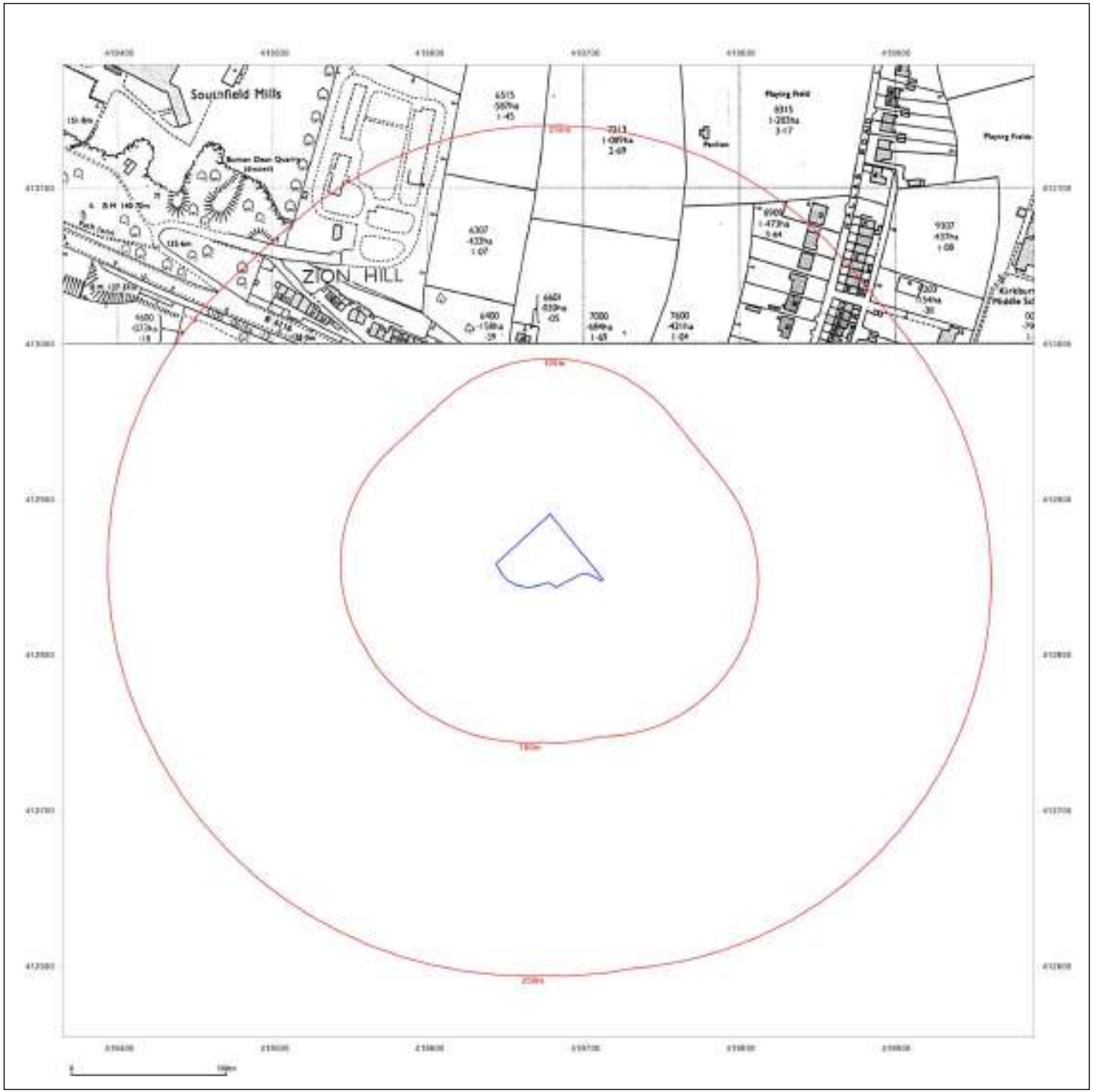
Production date: 06 May 2022

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



Groundsure INSIGHTS

Site Details:

419683 , 412872

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Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: **1978**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

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

Powered by OS

Produced by
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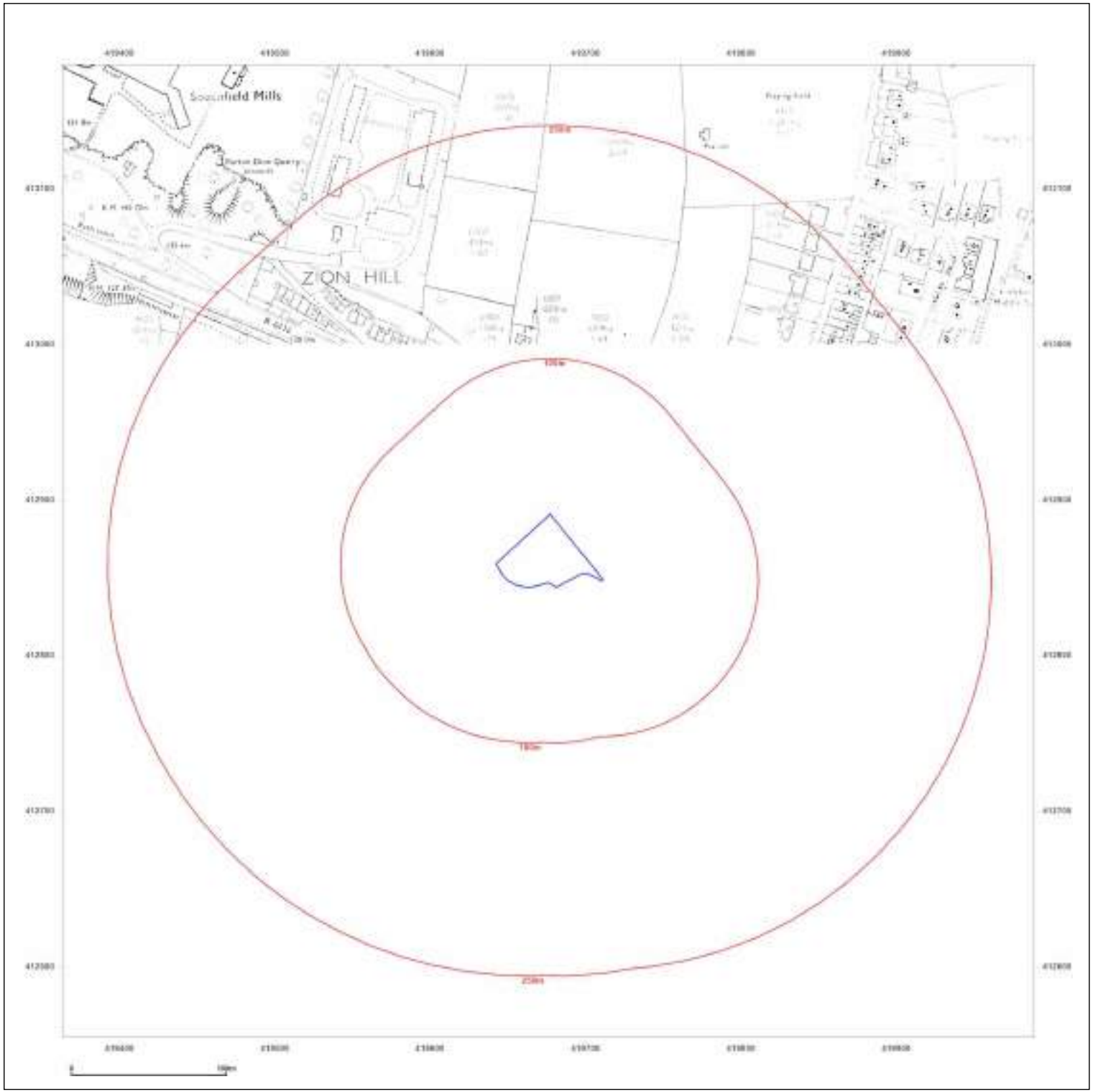
E: info@groundsure.com
W: www.groundsure.com

Production date: 06 May 2022

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



Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: **1983**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1983
Levelled 1959

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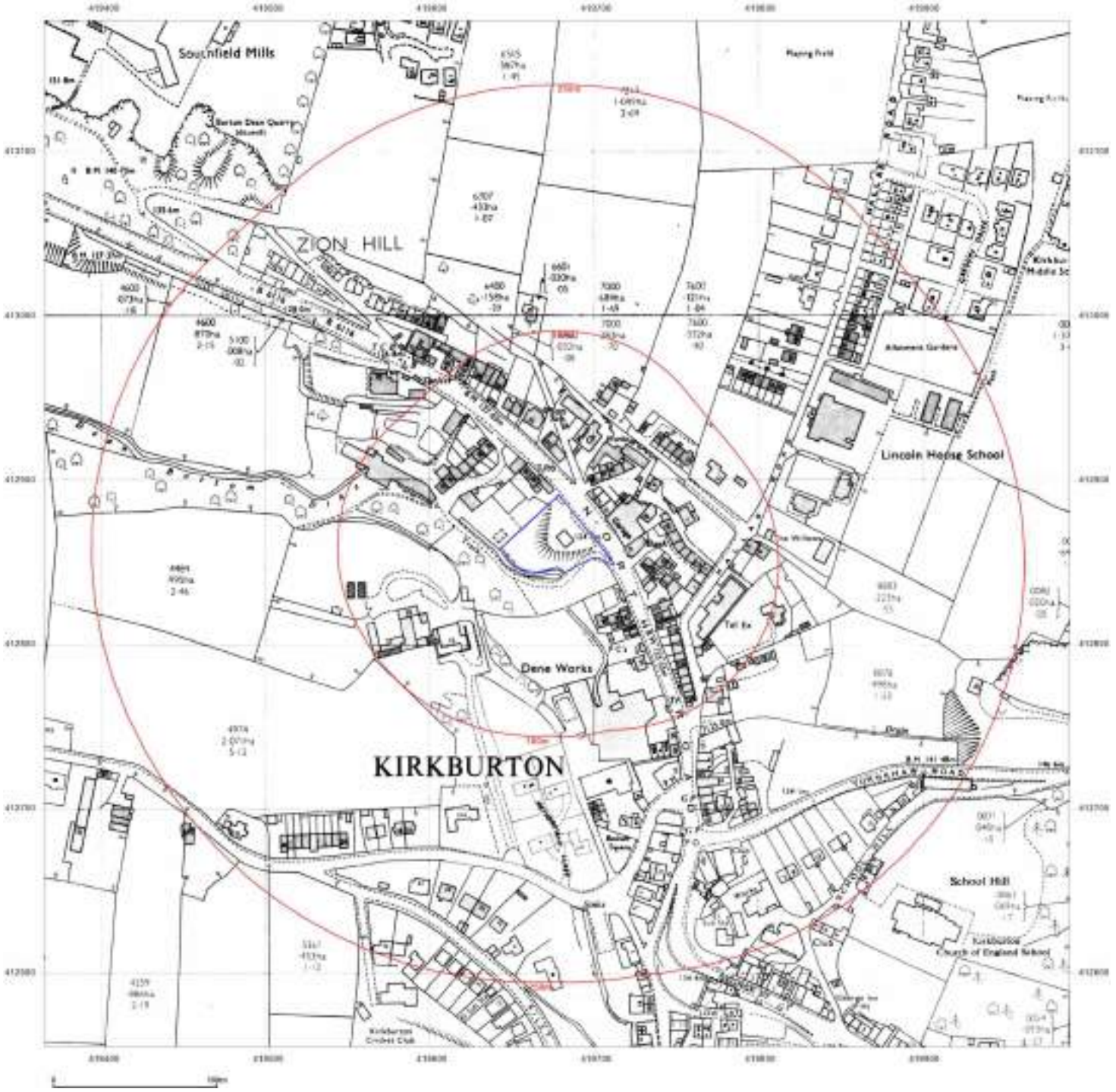

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid

Map date: **1985-1990**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1953
Revised 1985
Edition N/A
Copyright 1985
Levelled 1950

Surveyed 1969
Revised 1990
Edition N/A
Copyright 1990
Levelled 1950

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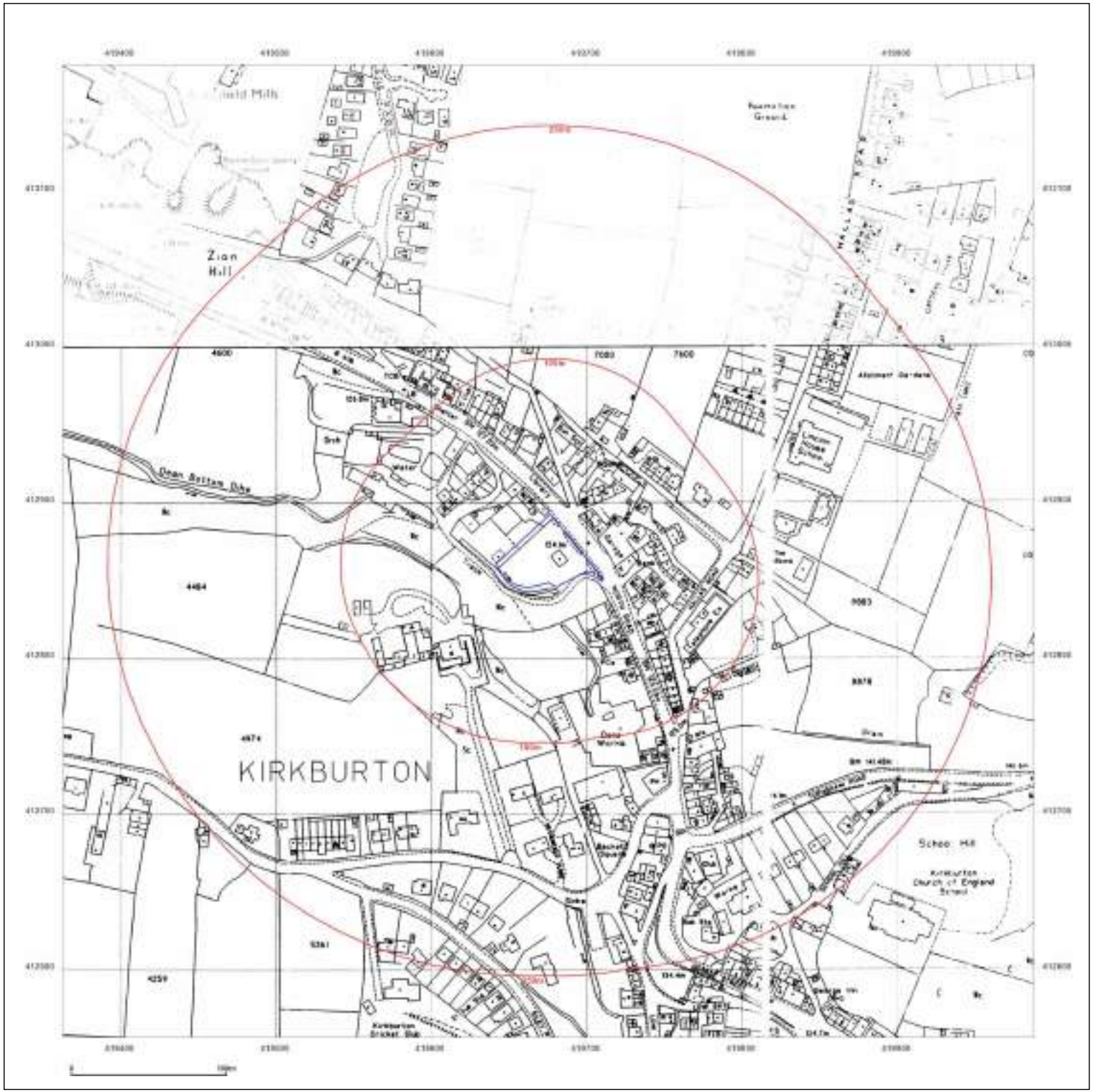

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid

Map date: **1988-1992**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1959
Revised 1988
Edition N/A
Copyright 1988
Levelled 1959

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

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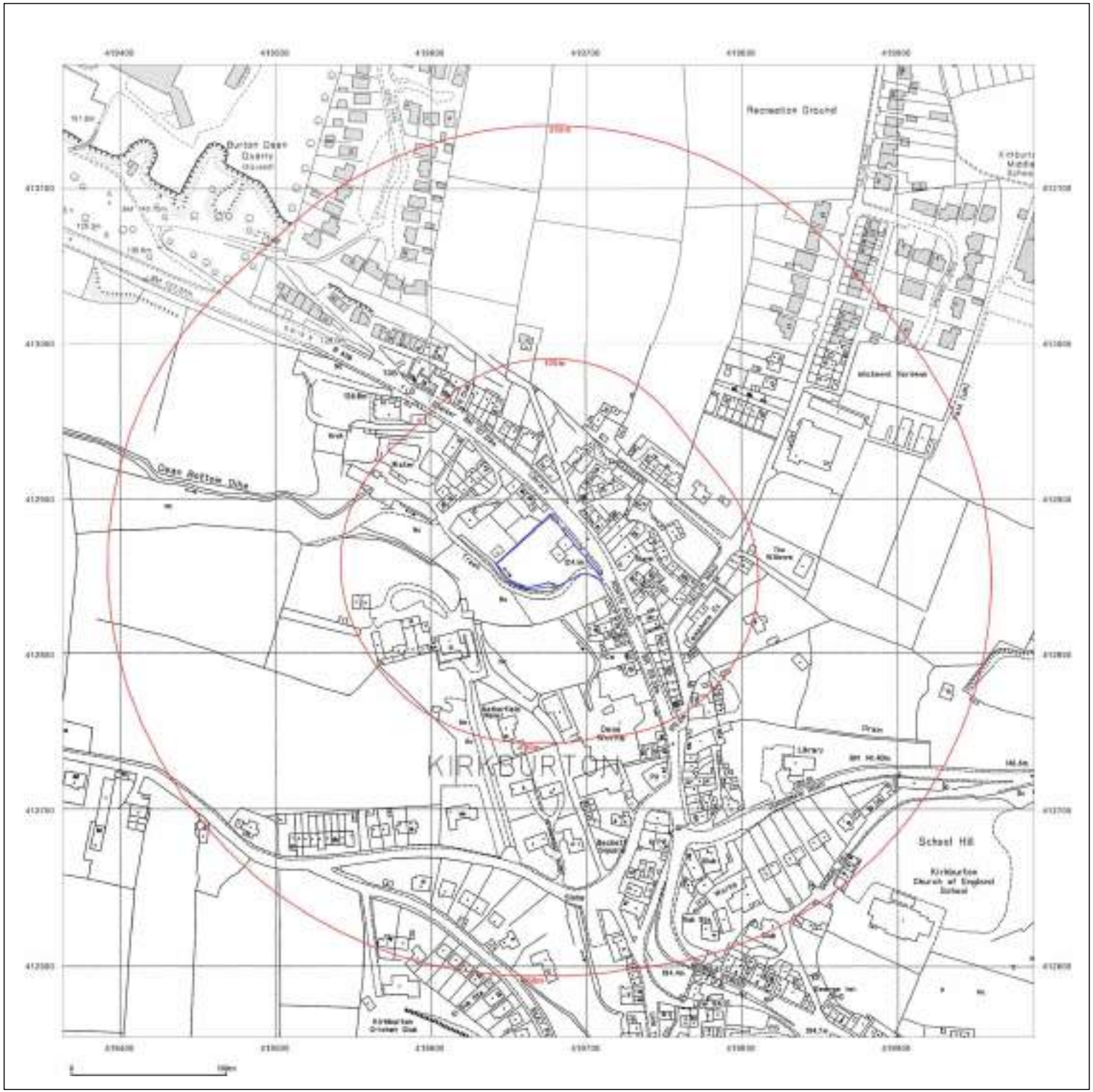

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid

Map date: **1991-1995**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed 1995
Revised 1995
Edition N/A
Copyright 1995
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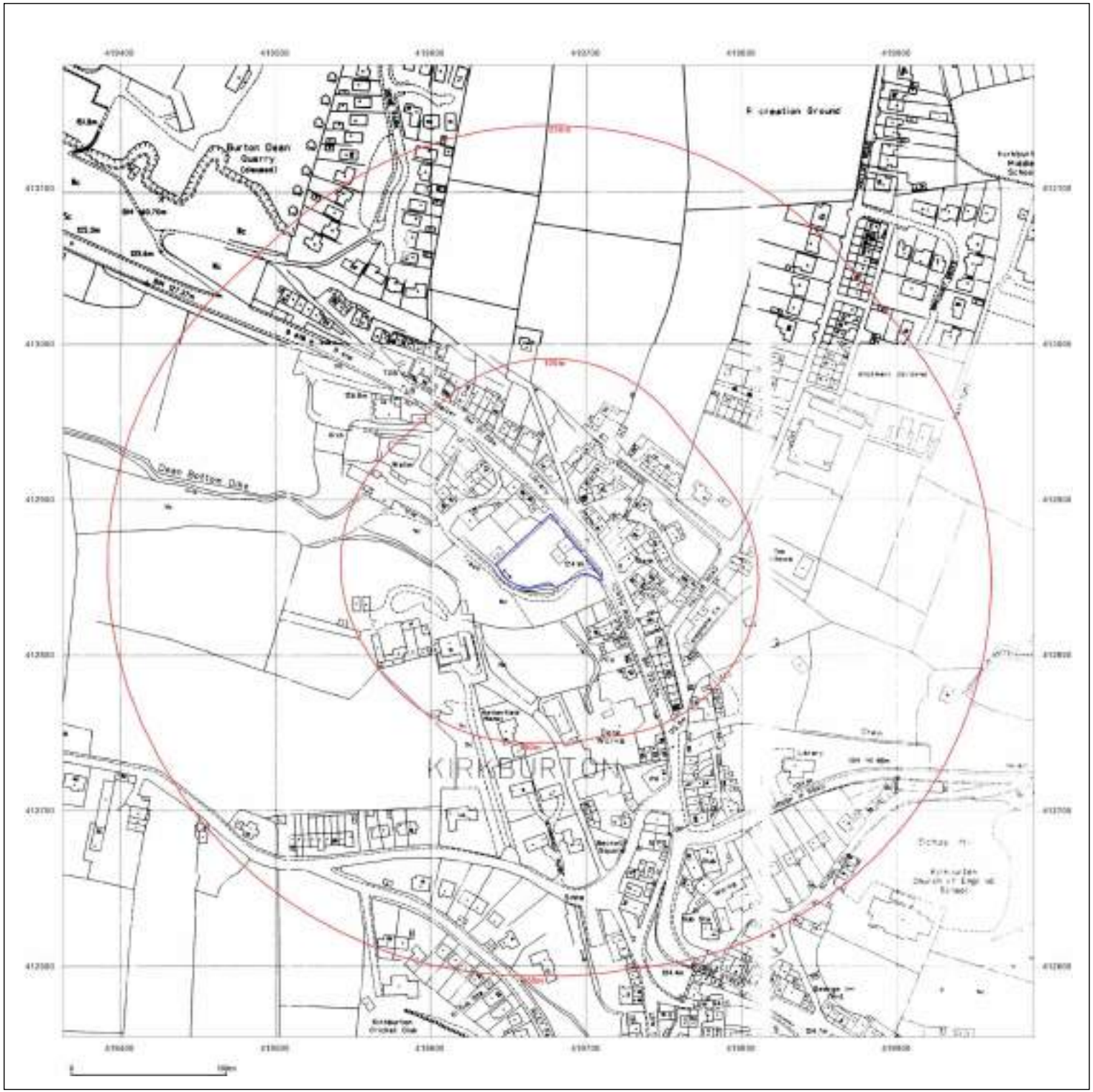

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid

Map date: **1992-1995**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed N/A
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Edition N/A
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Production date: 06 May 2022

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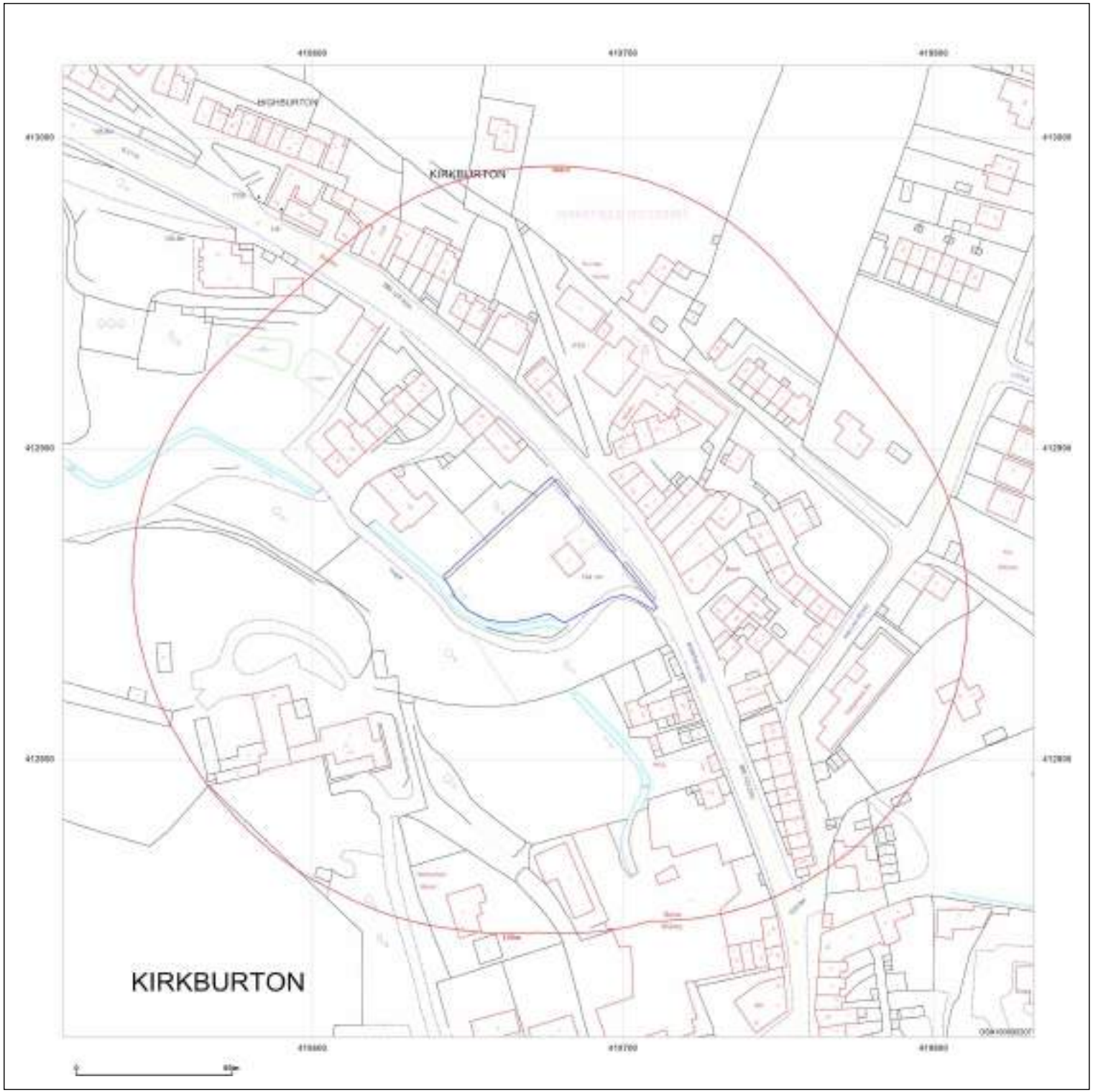

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

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

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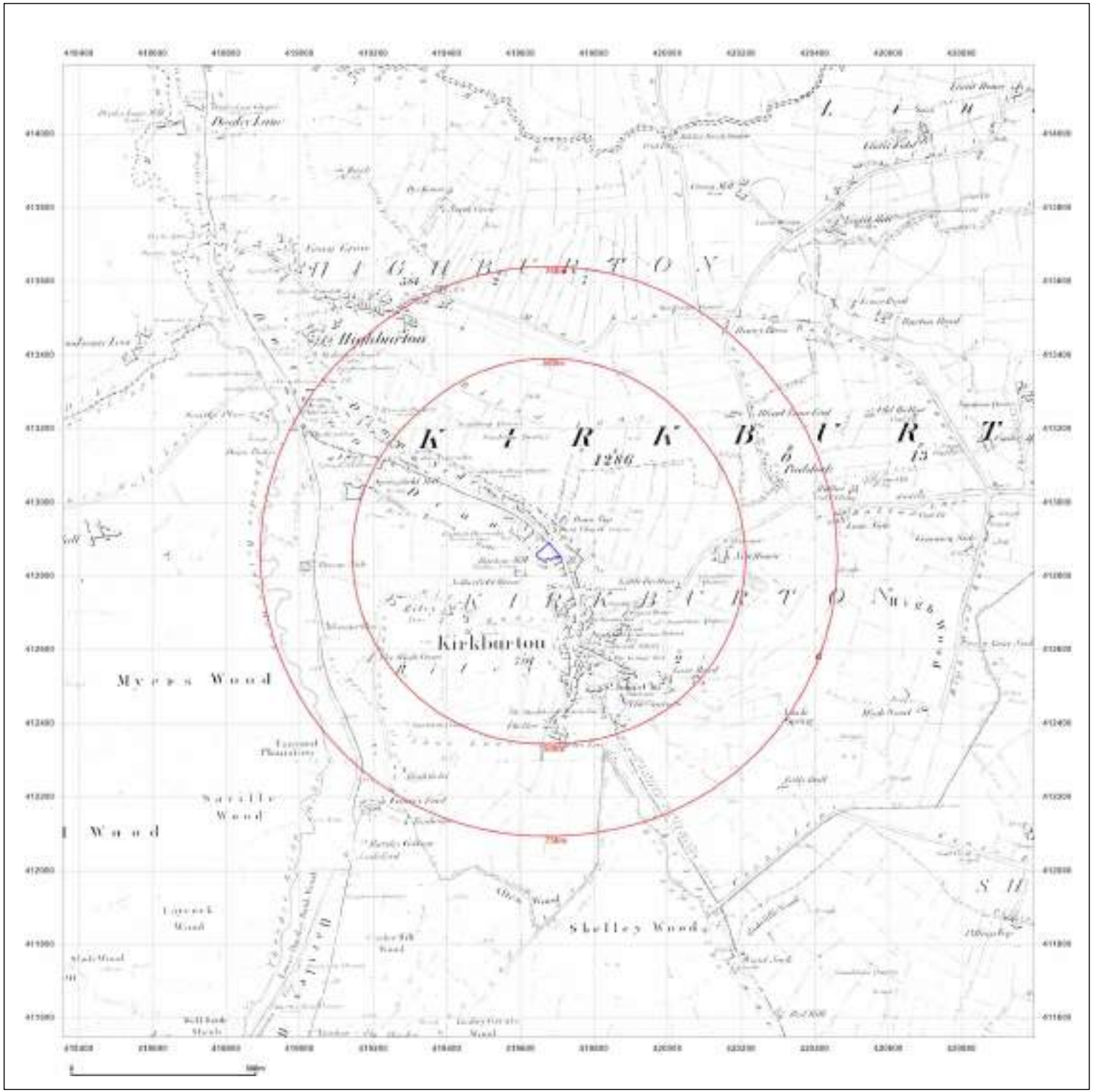

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series
Map date: **1854**
Scale: 1:10,560
Printed at: 1:10,560

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

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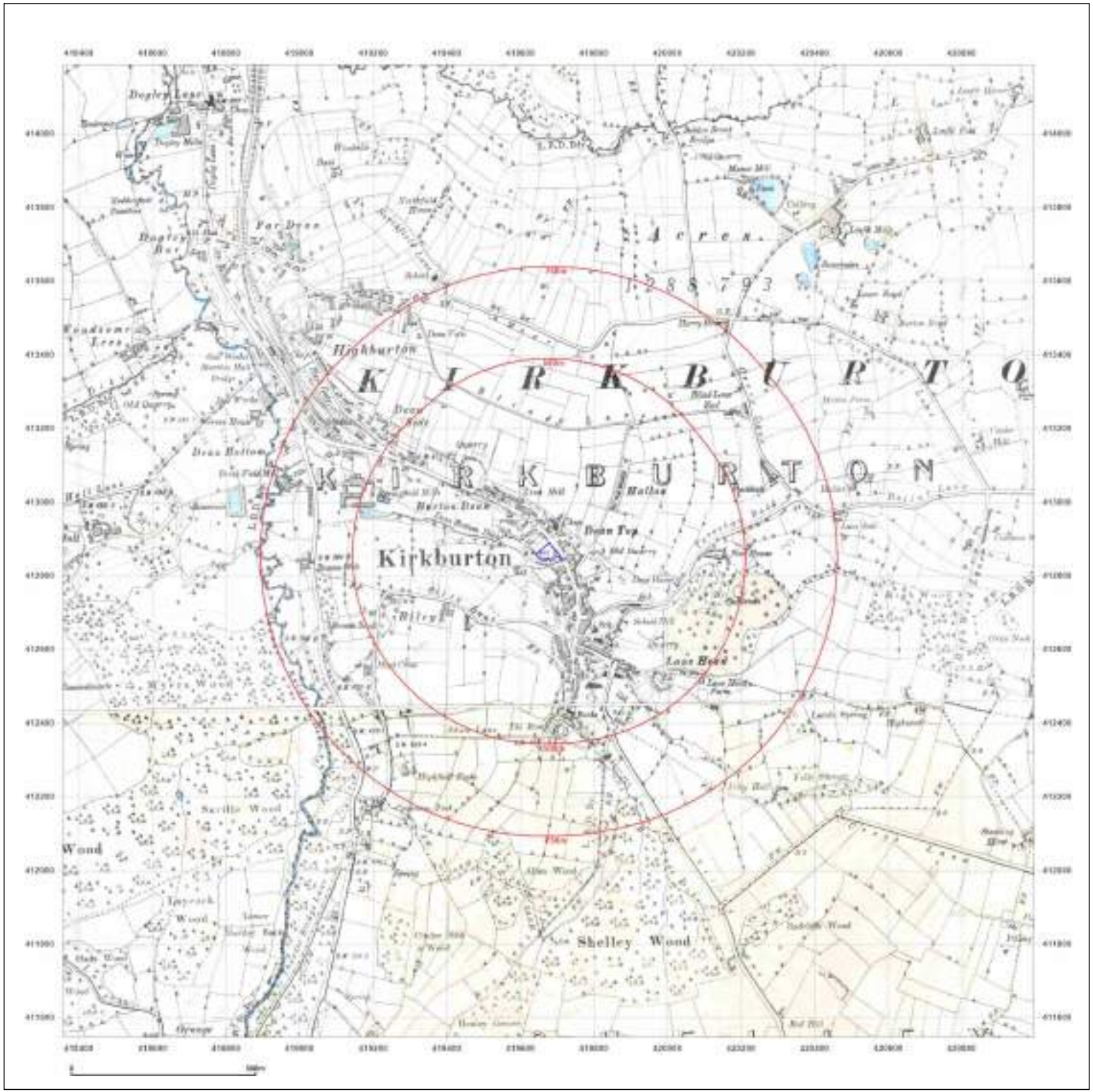

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series
Map date: **1892**
Scale: 1:10,560
Printed at: 1:10,560

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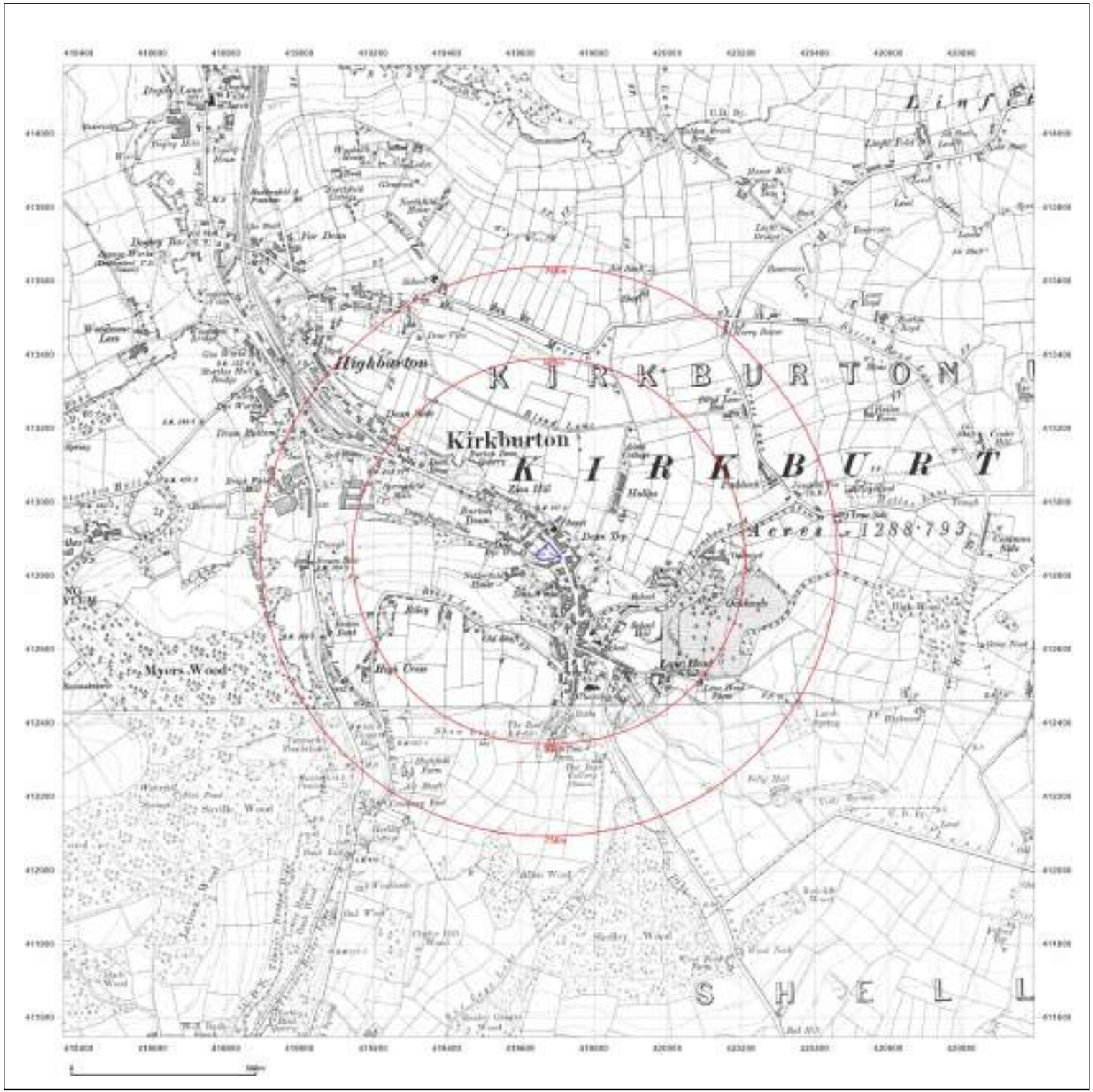

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series
Map date: **1904**
Scale: 1:10,560
Printed at: 1:10,560

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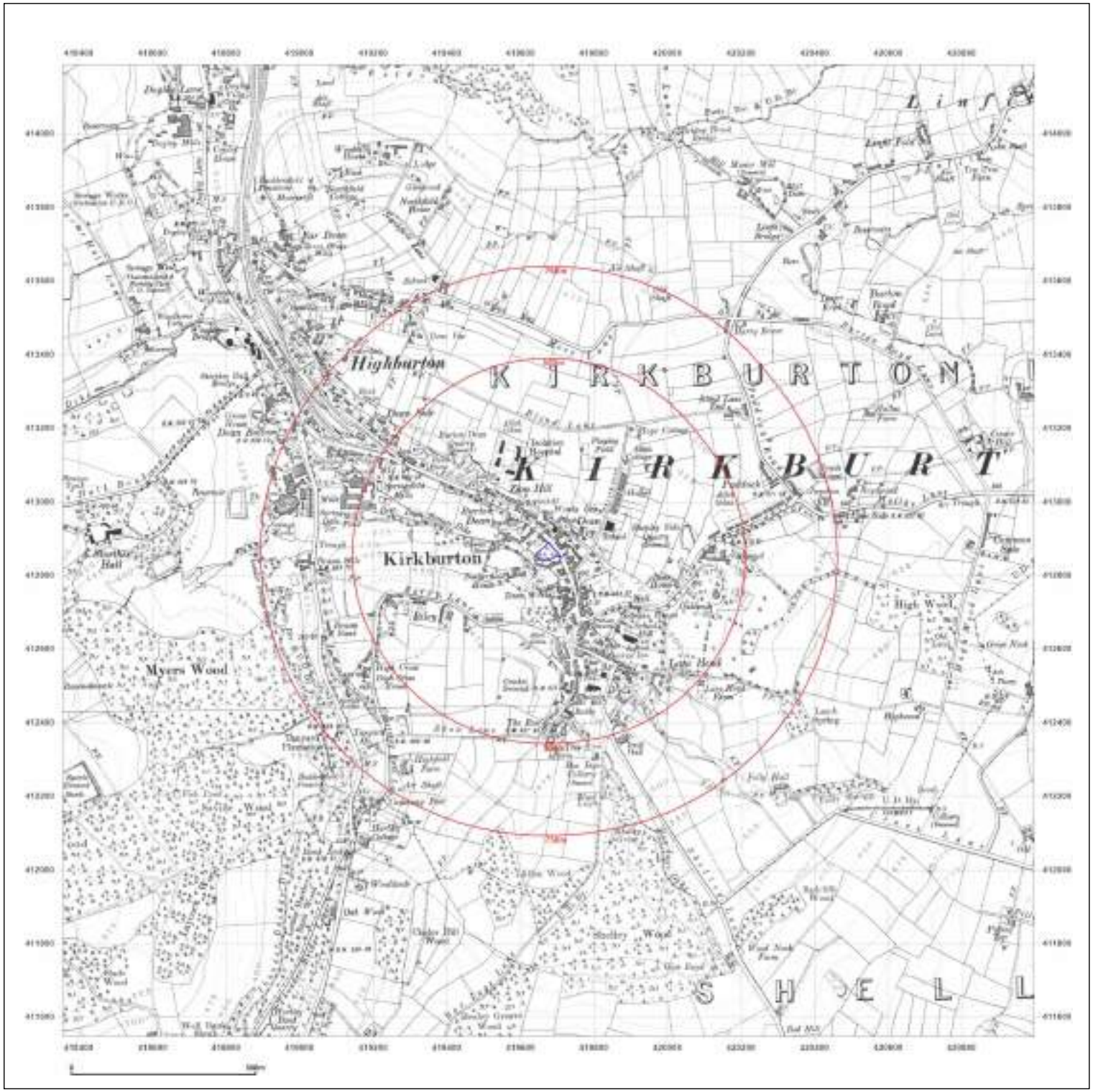

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series
Map date: **1930-1932**
Scale: 1:10,560
Printed at: 1:10,560

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Production date: 06 May 2022

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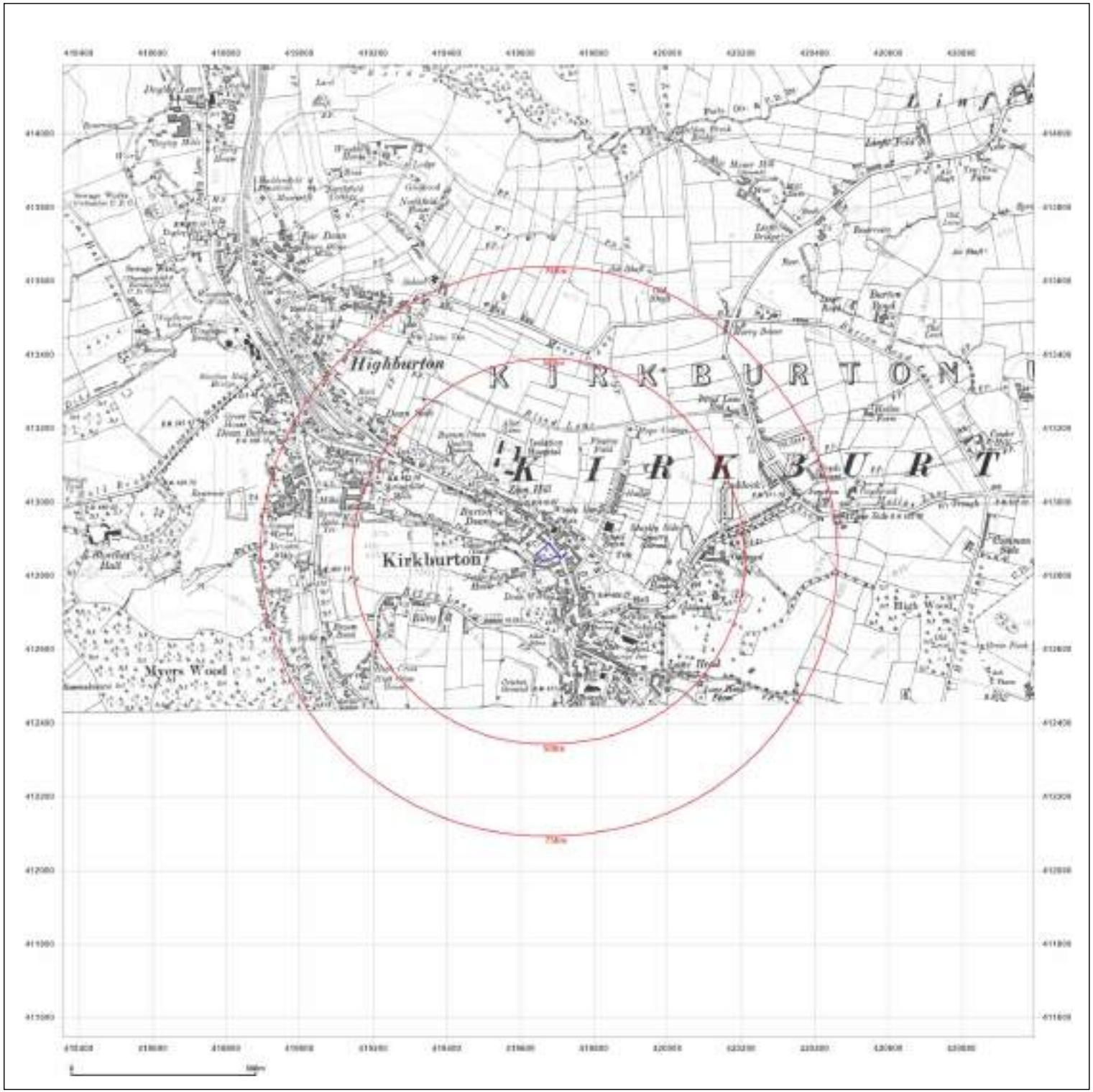

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series
Map date: 1938
Scale: 1:10,560
Printed at: 1:10,560

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Production date: 06 May 2022

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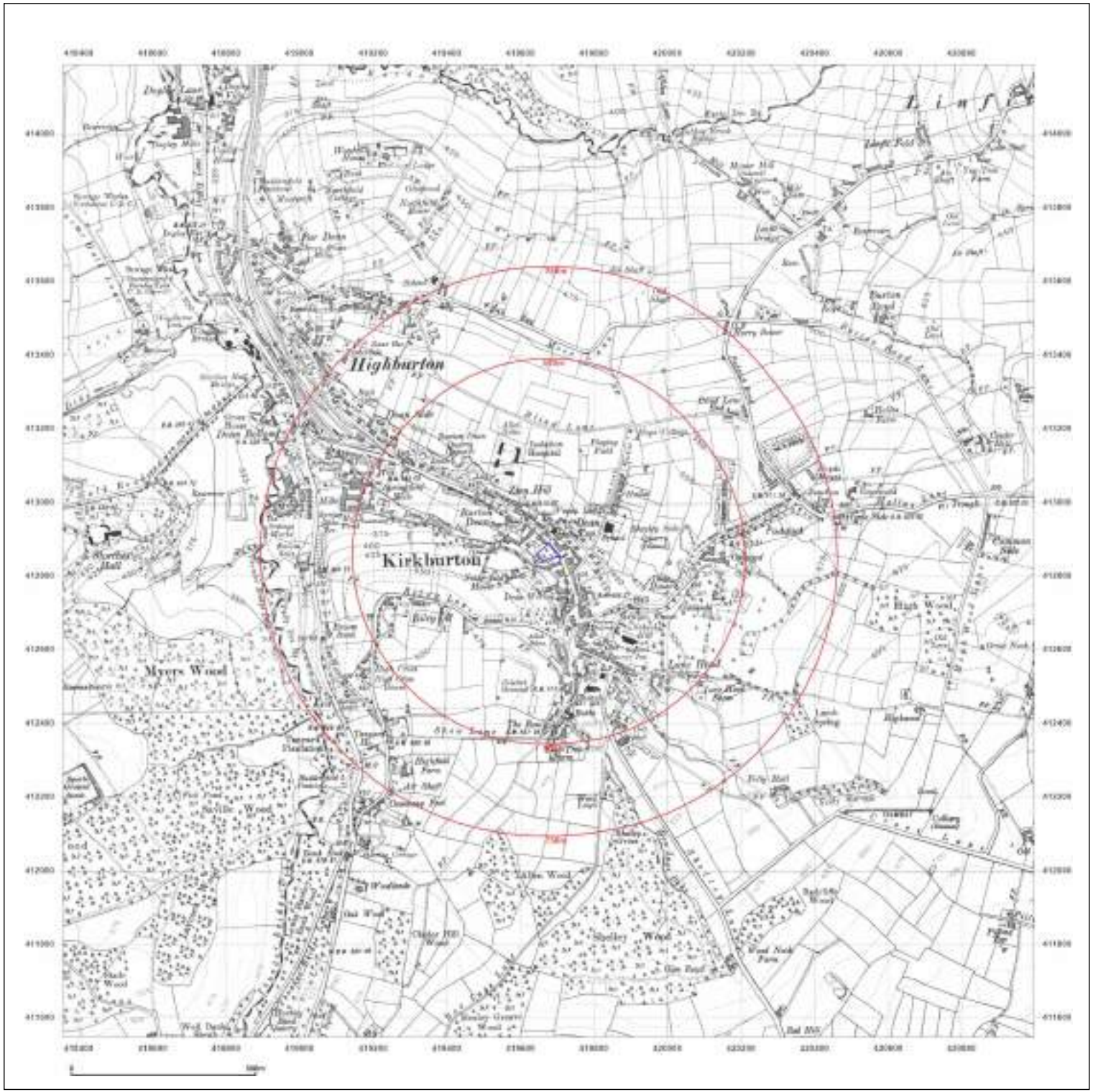

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: County Series
Map date: **1948**
Scale: 1:10,560
Printed at: 1:10,560

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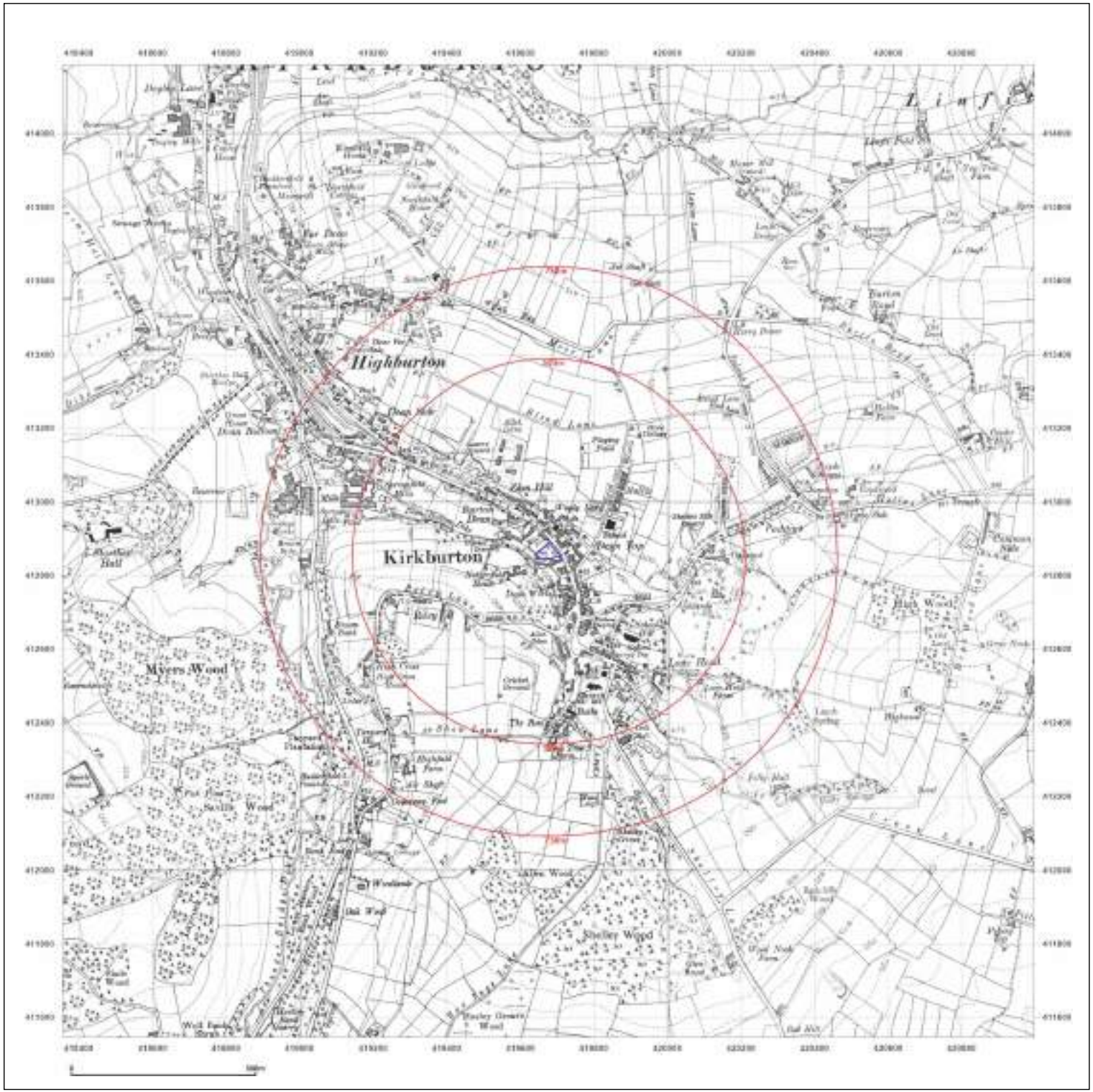

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: Provisional
Map date: **1955**
Scale: 1:10,560
Printed at: 1:10,560

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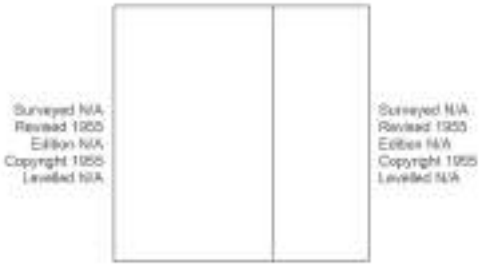

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Production date: 06 May 2022

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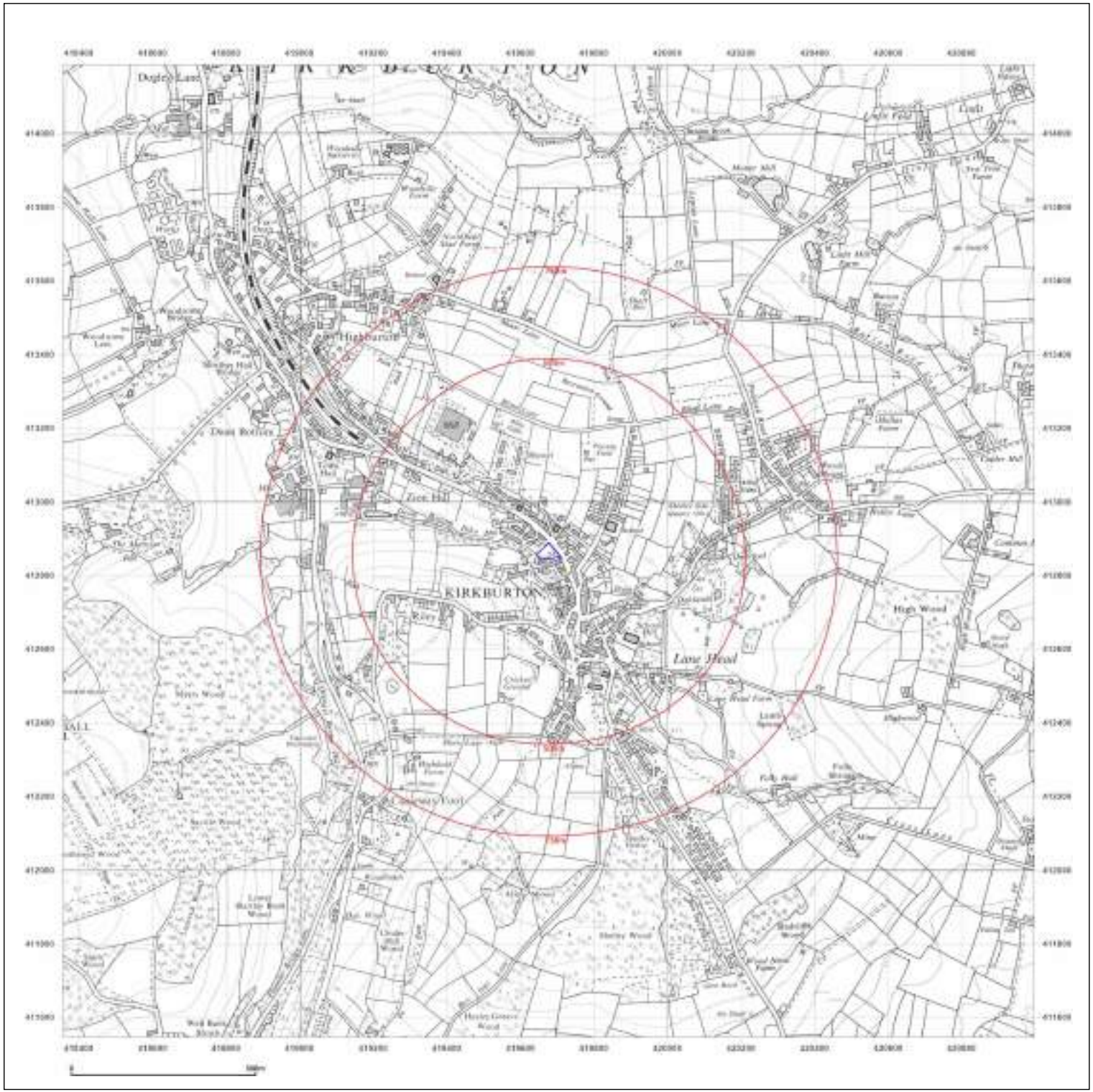

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: Provisional
Map date: **1967-1968**
Scale: 1:10,560
Printed at: 1:10,560

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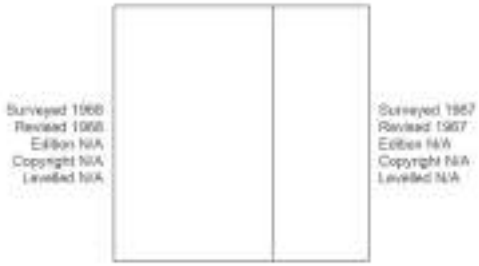

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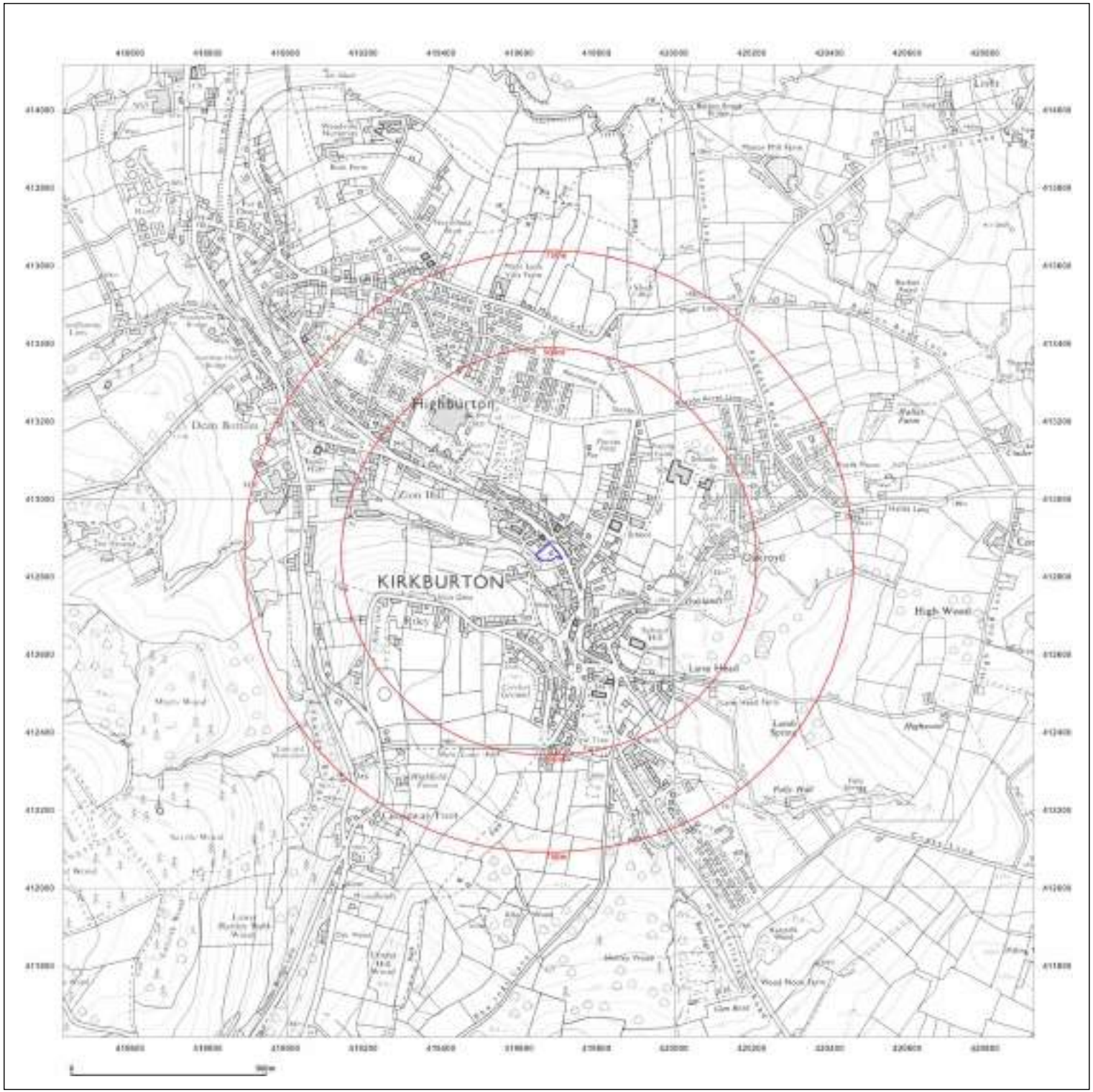

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: **1977-1979**
Scale: 1:10,000
Printed at: 1:10,000

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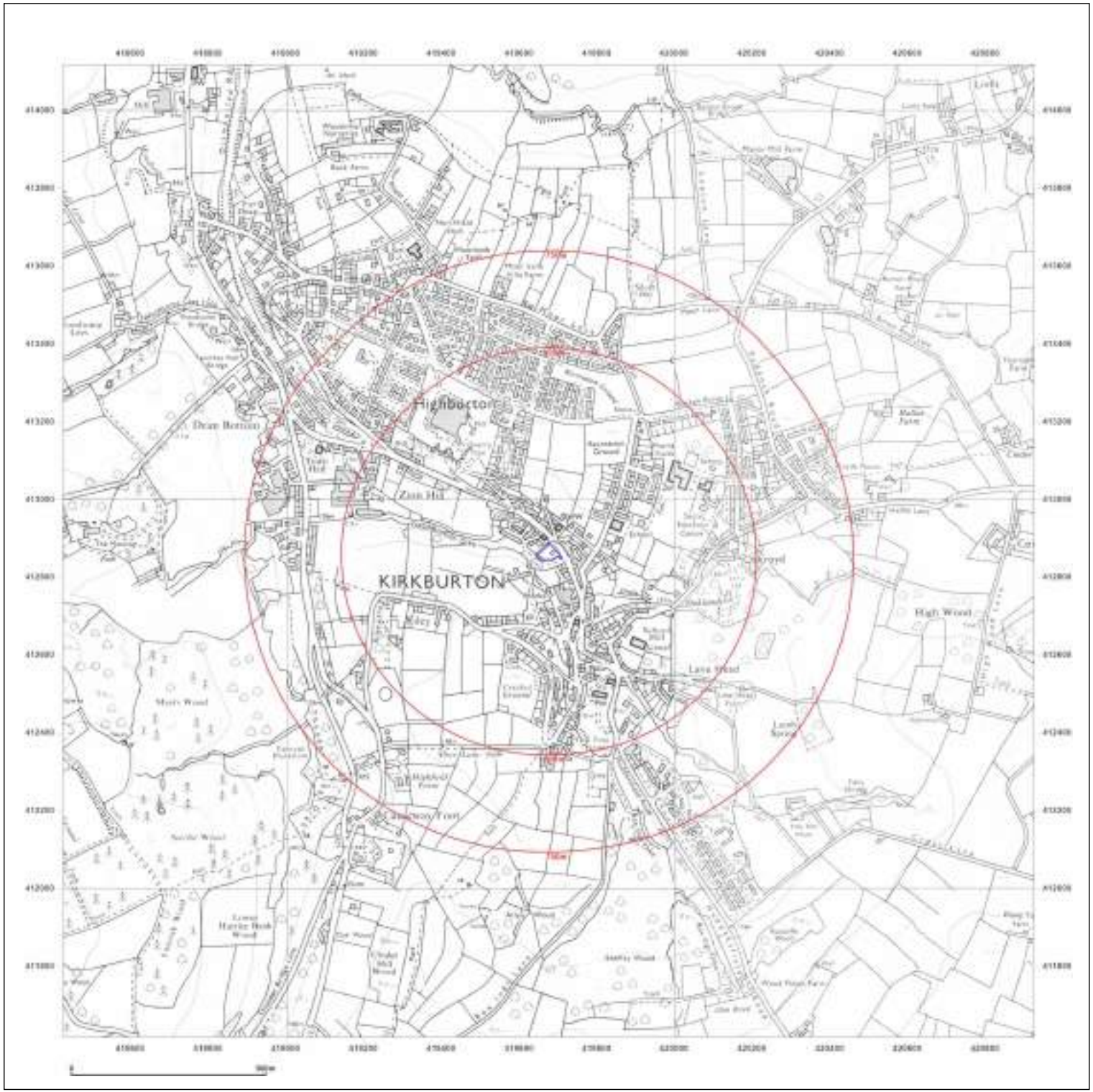

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: **1990-1993**
Scale: 1:10,000
Printed at: 1:10,000

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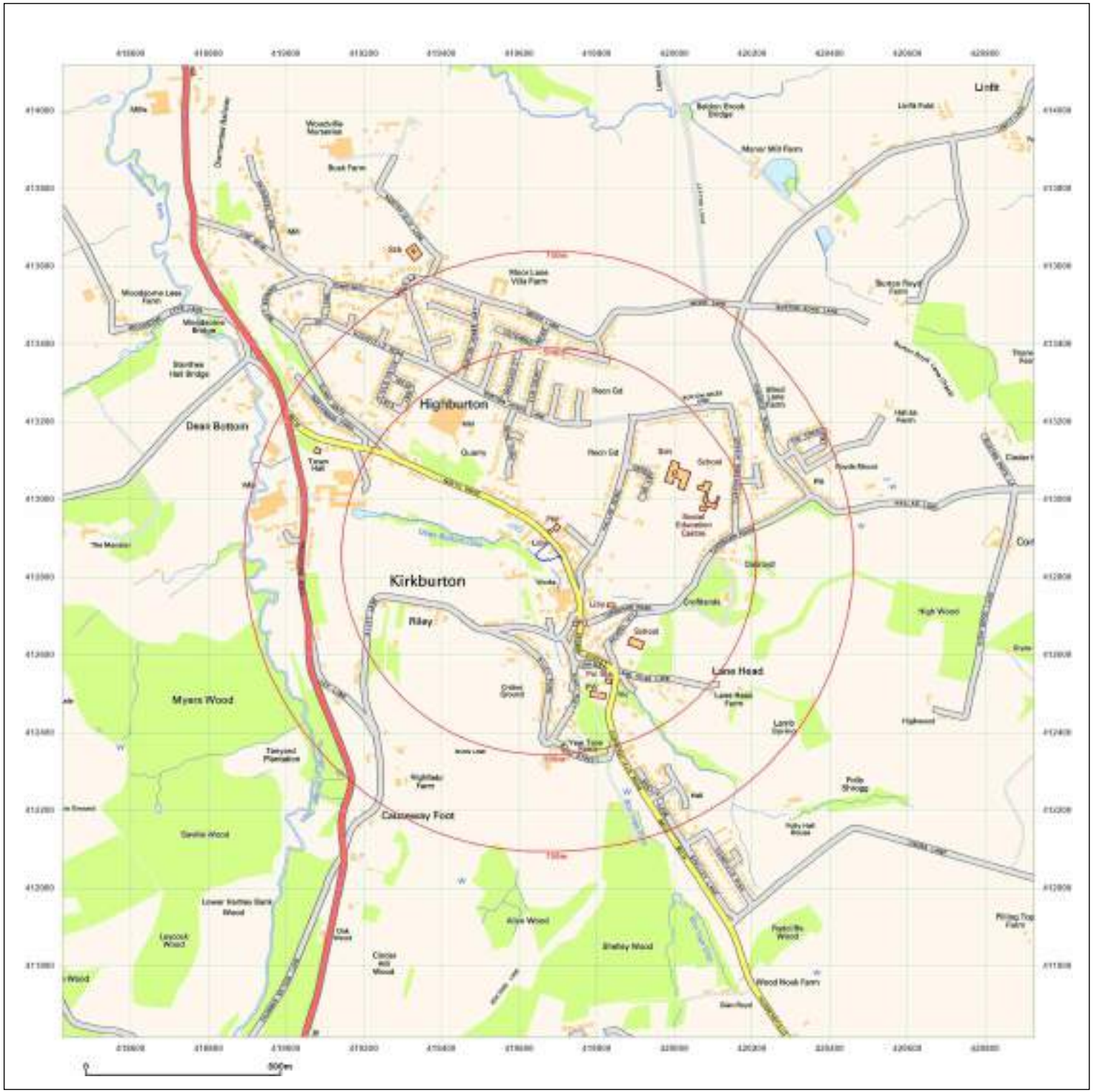

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: 2001
Scale: 1:10,000
Printed at: 1:10,000

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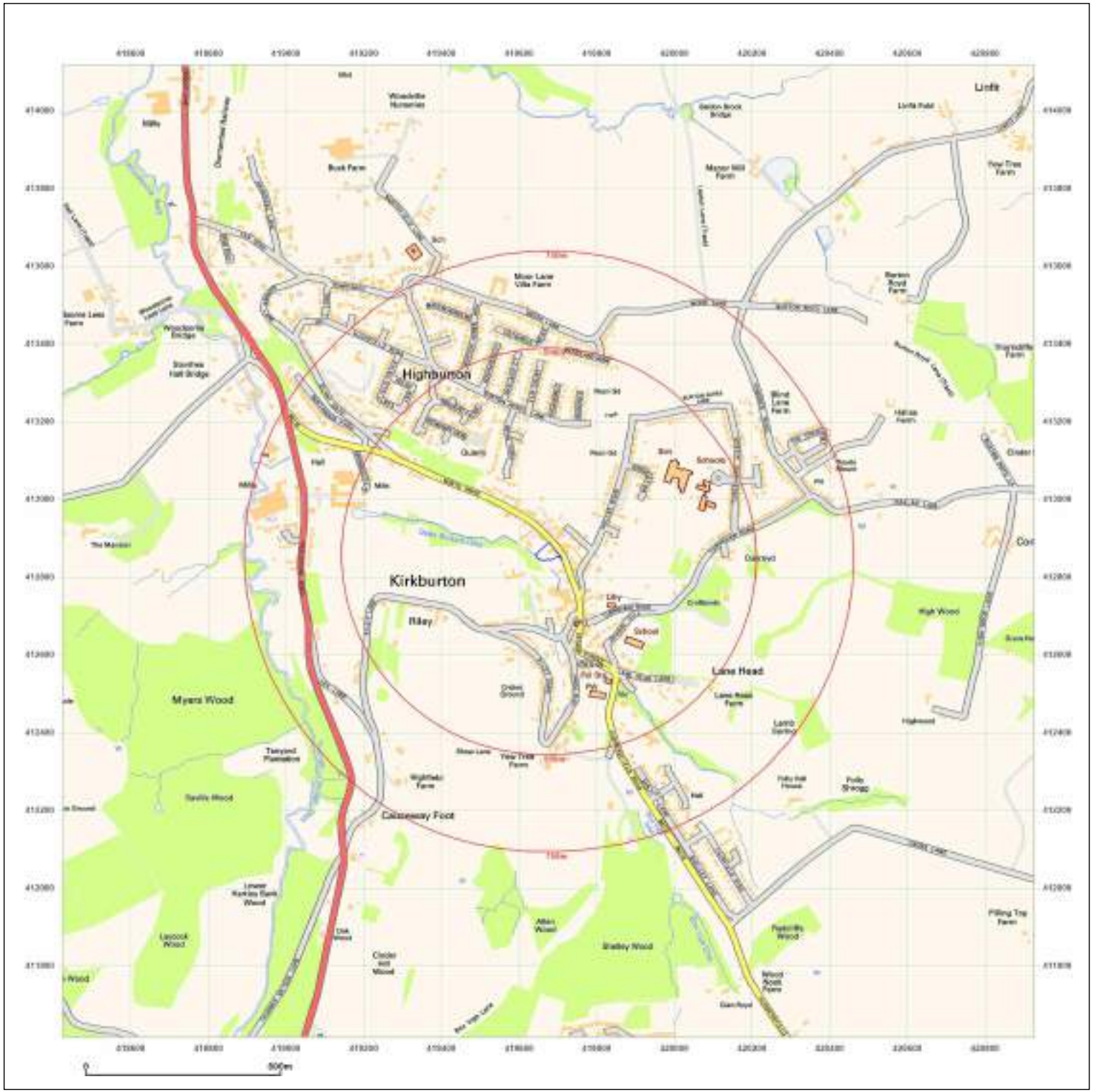

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: **2010**
Scale: 1:10,000
Printed at: 1:10,000

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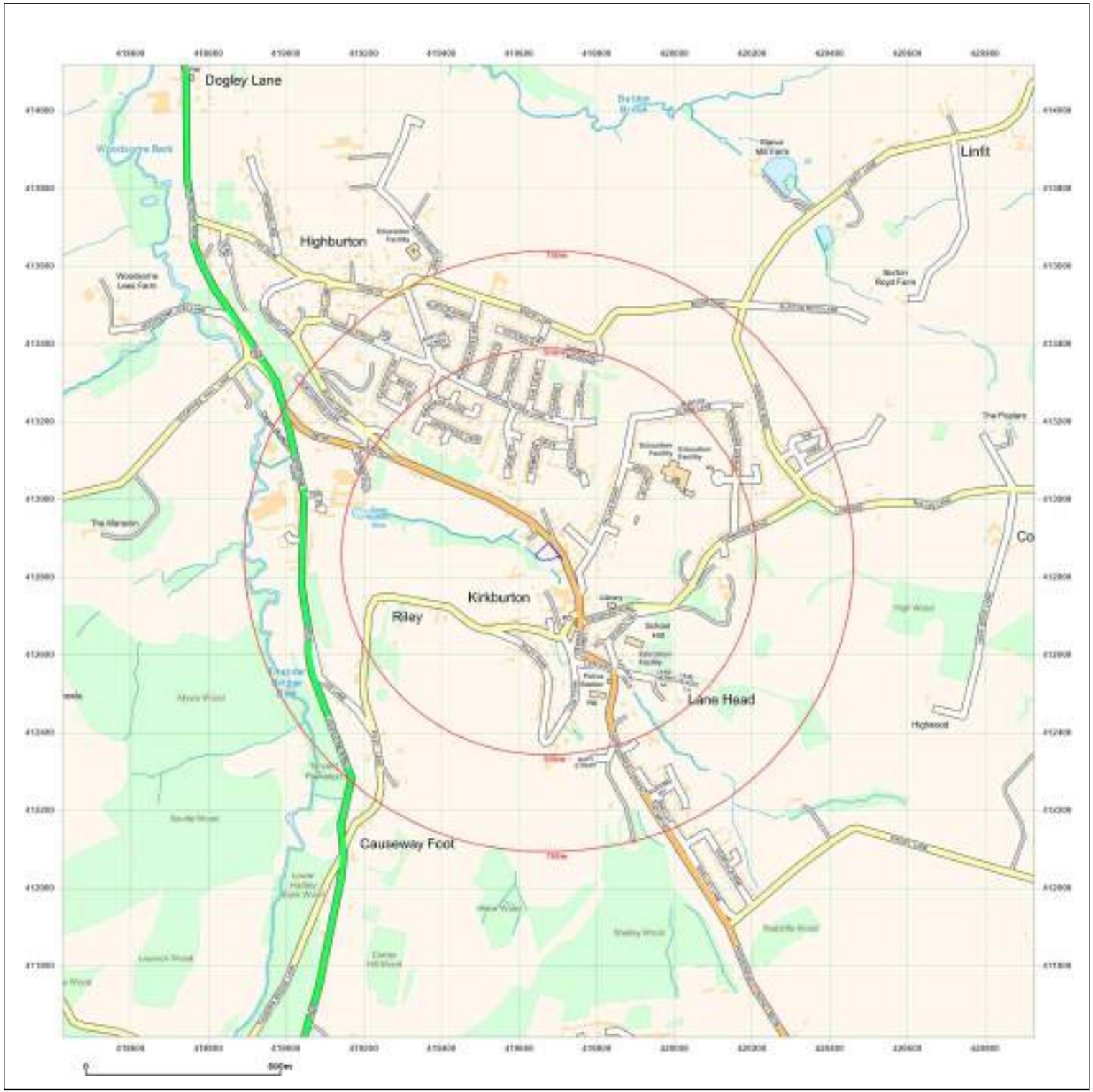

Groundsure INSIGHTS

Site Details:

419683 , 412872

Client Ref: 82426
Report Ref: GS-8726810
Grid Ref: 419676, 412867

Map Name: National Grid
Map date: 2022
Scale: 1:10,000
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APPENDIX VI

COAL MINING REPORT

APPENDIX VII

GENERAL CONDITIONS

1. This report has been prepared and written specifically for the client named in the introduction and is exclusively for his/her/their benefit. No reliance may be placed in the contents of this report by any third party except with the express agreement of the original client and the written agreement of PRP. Such written agreement may require the payment of an additional fee.
2. The recommendations sections of this report only provide an overview of the guidance and should not be specifically relied upon in their own right but should be considered in relation to the whole report and the development described in this report.
3. This report has been prepared and written in the context of the proposals for the development of the site as stated by the client and will not be valid in a differing context. Furthermore, new information, improved practices, or legislation may necessitate alterations to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of this report, it should be referred to us for re-assessment.
4. The assessment and interpretation of contamination and associated risks are based upon the scope of the work described in the fee proposal and agreed with the client, the report may not be sufficient to fully address the contamination or allow a detailed remediation scheme to proceed without further investigation or analysis.
5. Any assessments made in this report are based on the ground conditions and as revealed by the test pits and boreholes together with the results of any field or laboratory testing undertaken and where appropriate other relevant data which may have been obtained for the site. The sources of such information are detailed in this report and while PRP use only such sources as are believed to be reliable, PRP will not be liable for the authenticity or reliability of information obtained from others.
6. Notwithstanding that factual reports from third parties concerning asbestos or mould of any kind may have been included for information purposes in this report, PRP will have no liability whatsoever for any claim or claims arising related to asbestos or mould of any kind.
7. There may also be special conditions appertaining to the site which were not revealed by the investigation and which will not, therefore, have been considered in this report. Any assessments may be subject to amendment in the light of additional information becoming available.
8. Whilst an opinion may be expressed or implied in this report on possible configurations of strata between or beyond test pit or borehole locations, or on the possible presence of features based on either visual, verbal or published evidence, this is for guidance only and no liability can be accepted for the accuracy of such opinions.
9. Comments on groundwater conditions will have been based on observations made only at the time of the investigation unless otherwise stated. It should be noted, however, that groundwater levels vary due to seasonal and other effects.
10. This report is not a site categorisation, and hazards could occur which have not been detected.
11. Where data has been provided or is made available to PRP and this has been used in the report, it has been assumed that the information is correct. No responsibility can be accepted by PRP for inaccuracies within the data supplied.
12. The copyright in this report and other related plans and documents prepared by PRP is owned by them and no such report, plan or document may be reproduced, published or adapted without their written consent. Complete copies of the report may however be made and distributed by the client as an expedient in dealing with matters related to its commission.
13. This report has been prepared solely for the client's purposes in obtaining planning permission and discharge of the planning conditions related to the proposed development indicated in the report. The discharge of these conditions does not constitute that the site could be determined under Part IIA of the Environmental Protection Act 1990.

APPENDIX VII

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