

**LAND AT BIRD LANE HOUSE FARM, BIRD LANE,
THURGOLAND, SOUTH YORKSHIRE, S36 8YD**



PHASE 1 PRELIMINARY RISK ASSESSMENT

Prepared by

SILKSTONE ENVIRONMENTAL LTD

For

MR. PETER THOMPSON

AUGUST 2018

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EXECUTIVE (Non-Technical) SUMMARY

Silkstone Environmental Ltd (SEL) have carried out a Phase 1 Preliminary Risk Assessment (Desk Study) for Mr. Peter Thompson. The site is located on Bird Lane, 1.6km north of Thurgoland, South Yorkshire and is centred at National Grid Reference (NGR) 428310, 402430. It is intended to convert an existing barn, which occupies the centre of the site.

SEL have reviewed previous coal mining activities on site and conclude the documentation indicates the study area will not be affected by past underground/opencast coal mining or by old shafts/adits.

Infilled ground (a former opencast coal site) is recorded 172m north of the site. CIRIA guidance C665 (Ref. E) requires that potentially infilled land within 250m of a study area should be assessed for risk from ground gas. Although the infilled land represents a potential contamination source, the coal seams within which the infilled land occurs, outcrop 170m north of the site (Coal Authority records), removing any potential linkage for any gases to migrate onto the site. Ground gas monitoring should not therefore be required.

Based on current and historic land uses within the review area, the Preliminary Environmental Risk Assessment has derived an overall risk rating of **Low** for the site. This rating is based on the assumption that when development occurs, basic PPE is worn and good site construction practices followed.

SEL understand the development includes the retention of the main structure of the building and replacement of the corrugated asbestos roof. The risk rating is also conditional on best practices being followed when these works are undertaken, including the employment of licenced asbestos removal contractors to dismantle the roof.

Notwithstanding the above, the Preliminary Risk Assessment, based on information provided by the Coal Authority, Groundsure reports and historical mapping, augmented by on site visual inspection, indicates that **Phase 2 intrusive site investigations should not be required.**

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REFERENCES

- A. Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination, Environment Agency (September 2004).
- B. Town and Country Planning Act (1990).
- C. National Planning Policy Framework (2018).
- D. Revised Statutory Guidance dated April 2012 implementing the contaminated land provisions under Part 2A of the Environmental Protection Act 1990.
- E. CIRIA 665 Assessing Risks Posed by Hazardous Ground Gases to Buildings (2007).

1 INTRODUCTION

1.1 Brief

Silkstone Environmental Ltd (SEL) have carried out this desk study for Mr Peter Thompson. The site is approximately 0.32ha in area. The main body of the site has an irregular wedge shape approximately 40m wide x 120m long, narrowing to a width of 12m in the east. It is intended to redevelop a barn which occupies the centre of the plot.

The stated purpose of the work was to carry out a Phase 1 Preliminary Risk Assessment (Desk Study), to assess the potential for historic contamination at the site which may adversely impact on human health and the wider environment as a result of the proposed residential development of the site. Geotechnical issues have also been considered and a review made of the potential for instability risk at the surface from former legacy coal mining operations. The report has been compiled in general accordance with Ref. A as a 'Preliminary Risk Assessment', as defined therein.

This preliminary assessment will highlight the potential requirements for an intrusive investigation. These have been assessed as follows:

- A description of the site showing location and layout.
- A review of the site history including previous surrounding land uses.
- Determination of the environmental setting by reference to geology, mining / quarrying risks associated with hazardous gas (including radon, landfill gas, mines gas and the like), proximity to land filled ground, proximity to Control of Major Accident Hazard (COMAH) or explosive sites, hydrology, flood risk and hydrogeology.
- A site walkover and inspection.
- An assessment of anticipated ground conditions including potential contaminants.
- An assessment of anticipated foundation and engineering issues associated with any redevelopment.
- An inspection of historical and geological maps and information provided by the Local Planning Authority, Environment Agency, British Geological Survey and the Coal Authority.

- A risk assessment is given of the proposed development including an appraisal of actual and/or potential contaminant sources, pathways and receptors. A conceptual site model is also provided and design of an appropriate ground investigation where considered appropriate.

Conclusions are given alongside any further recommendations. No other site investigations are known or have been made available to SEL.

1.2 Legislative and Regulatory Context

If land proposed to be developed is suspected to be contaminated either historically, or by its current use, an investigation will be requested by the Local Authority under the Town and Country Planning Act (1990) (Ref. B) and the National Planning Policy Framework (Ref. C), to determine the level of risk and if remediation is necessary or whether there may be grounds for the land to be considered contaminated under Part 2A of the Environmental Protection act 1990 (Ref D). Under this regime, investigations are carried out to determine whether the current condition of the site is suitable for its proposed use.

1.3 Guidance and Information Sources Used Within This Report

This report has been produced in line with relevant guidance and best practice and in particular Ref. A, B, C, D and E.

This list includes all of the cited references. It is not exhaustive and comprises only the principal references used in conducting this risk assessment.

1.4 Report Limitations

The conclusions reached in this report are necessarily restricted to those which can be determined from available information and may be subject to amendment in the light of additional information becoming available or to changes in relevant legislation.

SEL are unaware of any conflicts of interest in the preparation of this report.

2 ENVIRONMENTAL SETTING

2.1 Site Location

The site is located on land off Bird Lane, Thurgoland, South Yorkshire, approximately 1.6km north of Thurgoland and 7.5km southwest of Barnsley, South Yorkshire. The site centre is at National Grid Reference (NGR) 428310, 402430 and is approximately 0.32ha in area. The study area has an irregular wedge shape approximately 40m wide x 120m long, narrowing to a width of 12m in the east. It is intended to convert an existing barn, which occupies the centre of the site.

A location plan is presented as Figure 1 in Appendix A.

2.2 Historical Land Use

Information relating to historical land use of the site and surrounding area has been gained from historical maps (Appendix B) and the Groundsure Environmental Report (Appendix C). The information has been summarised in the table below, including dates of the significant maps referred to.

It is important to note that any date referred to in this section indicates the date a feature appears on the map and not necessarily the date the actual feature was present. Additionally, the marked site boundary may appear to move with respect to successive editions, this is predominantly due to minor variations in the Ordnance Survey with time.

Ordnance Survey plans chart a rural area with a local coal mining and quarrying industry which had ceased by the early/mid twentieth century:

Within the Site:

Earliest OS plans (1855) show the site to be green field. No subsequent changes occurred on site until 1987, when a barn was constructed in the centre of the plot. No further changes have occurred since.

Table 1: Historical Land Uses of the Site and Surrounding Area

Date	Scale	On-Site	Surrounding Area
1855	1:10,560	Green field.	Farmsteads 30m NW, 100m N & 150m SW. Jagger's Wood Coal Pit 165m E. Sandstone Quarries 341m NW & 473m W. Disused sandstone quarry 623m SE. 2 springs & 2 wells 20-45m N.
1891	1:10,560	No change.	Coal pit and sandstone quarries ceased working and no longer shown.
1893	1:2,500	n/c	Springs 50m N.
1904	1:10,560	n/c	Old shaft, coal pit and levels 150m NE.
1906	1:2,500	n/c	n/c
1929	1:10,560	n/c	n/c
1931	1:2,500	n/c	n/c
1932	1:10,560	n/c	Coal mining 150m NE ceased. Quarrying 500m NW.
1938	1:10,560	n/c	n/c
1948	1:10,560	n/c	n/c
1951	1:10,560	n/c	3 barns adjacent N perimeter.
1959	1:2,500	n/c	Wells no longer shown.
1965	1:10,560	n/c	Quarry 500m NW no longer shown.
1978	1:2,500	n/c	n/c
1987	1:10,000	Barn constructed.	Holmfield built SW perimeter. Barns immediately north of site. Springs no longer shown.
1993	1:2,500	n/c	n/c
2002	1:10,000	n/c	n/c
2010	1:10,000	n/c	n/c
2014	1:10,000	n/c	n/c

Surrounding Area:

Earliest plans (1855) show the area to be mainly rural, with three farmsteads established (Bird Lane House 30m NW, Highfield 150m SW & Bird Lane Farm 100m N). Holmfield, a property adjacent to the southwest perimeter of the site, first appears on the 1987 OS plan. Barns began to be built on land between the site and Bird Lane in 1951, culminating with a total of 7 structures built by 1987.

Two springs and two wells are recorded on earliest plans in the fields between the site and Bird Lane. The wells are not shown on plans after 1951 and the springs after 1978.

Coal mining activity was well established within the wider area by the nineteenth century and Jagger's Wood coal pit is recorded on earliest plans (1855) 165m east of the site, although this mine had ceased working by 1891. Further coal mining activity had commenced by 1904 (150m NE) on Pinfold Hill Lane recorded as an old shaft, coal pit and levels, but this had ceased by 1932.

Quarrying activity (sandstone, 473m W & 341m NW) which was established on earliest plans, had ceased by 1891 and the quarries no longer shown. A second quarry was working 500m northwest of the site by 1932 and continued to be active until 1965, when it was no longer shown on plans.

An undefined mound is shown on the earliest plans 290m northwest of the site, but is not shown after 1931.

2.3 Site Description

A site walkover was carried out on Wednesday 15th August 2018 in dry weather. Photographic records are presented in Appendix D.

The site is located 70m south of Bird Lane Thurgoland, has an irregular wedge shape and is approximately 40m wide x 120m long, narrowing to a width of 12m in the east. Access to the site was via a 4m wide gate which is located on the northwest perimeter.

A block built barn occupies the centre of the site. It was not possible to inspect the interior of the barn. Its roof was made up of material which had the appearance of corrugated asbestos. SEL understand from the owner that the main structure will be retained and the corrugated roof replaced as part of the conversion process.

The site comprises two distinct areas. The majority of the site, a grass field, slopes to the northeast at a gradient of approximately 1 in 12 and varies in elevation from 209m (SW corner) to 205m (NE corner). Two disused cesspits are located in the field between the barn and Holmfield.

A break of slope, which runs close to (<5m) and parallel to the northern boundary and is sub-vertical (1-3m high), which means that all of the farm buildings adjacent to the review area stand on land 2-3m lower than the grass field. The proposed barn conversion has been built at right angles to the northern perimeter and is partially cut into the hillside. The composition of this bank appears to be weathered sandstone.

Neighbouring properties comprised three barns along the northern perimeter, Holmfield residential property on the southwest boundary and Bird Lane House northwest of the site.

There was no evidence of previous coal mining activities (shafts/adits).

There was no evidence of vegetation dieback, discoloured ground, seepage or odorous/discoloured liquids.

2.4 Geology

Information relating to the geology of the site has been gained from various sources and has been summarised in the table below:

Table 2: Geological summary

Maps/Publications Referenced	The British Geological Survey Map of England and Wales, Sheet 87, Barnsley, Solid and Drift, 1:50,000 scale (2008). BGS Geoindex website. Groundsure Geoinsight Report No. GS-5319350. The Coal Authority CON29M Mining Report No 51001897756001.
Artificial/Made Ground	Infilled ground 172m N, 270m NW, 302m E, & 413m SE (past opencast coal sites). Made ground (roadworks, Copster Lane) 296m SW.
Superficial Deposits /Landslips	None recorded within 500m of site. No landslips within 500m of the site.
Solid Geology	Pennine Lower Coal Measures (mudstones, sandstones and siltstones) and Penistone Flags (sandstone) of Langsettian age.
Dip of Solid Strata	North/northeast.
Faults	Geological fault 48m NE (adjacent to Bird Lane). No record of damage due to geological faulting (Coal Authority records).
Coal Seams/Mining/ Natural Cavities	<i>On Site:</i> Not within an area affected by recorded shallow underground coal mine workings. No known mine shafts or adits either on site or within 20m of site. No previous surface (opencast) coal mining on site. <i>Out-with site:</i> Extensively worked - opencast coal sites, shallow underground mine workings & numerous shafts and adits. The Coal Authority report has been reviewed below and is presented in Appendix C. Potential localised ironstone workings. Potential difficult ground conditions unlikely & need not be considered.

The review area is located within a coal mining reporting area where previous coal mining activity has occurred. A Coal Mining Report was therefore obtained for the site which is included in Appendix C and summarised below. Although Thurgoland is in an area which has been extensively undermined and opencasted in the past, the review area itself is relatively unaffected. The site:

- *“is not within a surface area that could be affected by recorded past underground coal mining.”*
- *“there are no known coal mine entries within or within 20m of the site boundary.”*

- *“is not within the boundary of an opencast site from which coal has been extracted”*
- *“reserves of coal exist in the local area which could be worked at some time in the future.”*

The site does not lie within an area classified by the Coal Authority as a “*Development High Risk Area*” (see Figure 2 in Appendix A).

Considering current economic, planning and governmental factors affecting coal mining, the risk of coal being extracted beneath the site is negligible.

In relation to all of the coal mining factors described above, SEL consider that the site is unlikely to be at risk from past coal mining activities.

Regarding non coal mining activities, the BGS records the site lies in an area where “*localised, small scale, ironstone workings may have occurred*”. However, the BGS records that “*the potential for difficult ground conditions are unlikely or at a level where they need not be considered.*”

A review of the Peter Brett Associates mining cavities database indicates no non-coal mining cavities within 1000m of the site.

2.4.1 Historical Borehole Data

BGS records indicate that no historic boreholes have been drilled within 250m of the site boundary.

2.4.2 Natural Ground Subsidence Risks

The Groundsure report considers other natural ground subsidence risks such as shrinking/swelling of clay, ground dissolution, compressible deposits, collapsible ground and running sand. In all respects either a very low or negligible risk has been attributed.

With regard to potential for landslides, the British Geological Survey records the site as low to very low risk.

2.5 Hydrogeology

There are no superficial deposits recorded on site to affect hydrogeology.

Bedrock geology has been designated a Secondary (A) Aquifer. Secondary (A) Aquifers (formerly known as Minor Aquifers) contain 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.

There are no Source Protection Zones within 500m of the site.

No surface water abstraction or potable water abstraction licences are located within 2000m of the study area. With respect to surface water abstraction licences, there are 4 within 2000m of the site, the nearest being 1770m distant.

SEL consider the proposed development should not affect the hydrogeology of the site.

2.6 Hydrology

There are 2 recorded surface watercourses within 250m of the site, both relating to Hollin Dyke 154 & 246m east of the review area.

The study area is not located within a Zone 2 or 3 floodplain. The Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) database indicates the study site is in an area with a very low (less than 1 in 1000) chance of flooding in any given year.

The site is in an area identified by the British Geological Survey as a groundwater flooding susceptibility area, being at risk from clearwater flooding; that is groundwater flooding from an unconfined aquifer. A 'limited potential' risk has been identified for this feature. Where limited potential for groundwater flooding is indicated, this means that although given the geological conditions, there may be a groundwater flooding hazard, unless other relevant information (eg records of previous flooding) suggests groundwater flooding has occurred before in this area, you need take no further action in relation to the groundwater flooding hazard.

There are no flood defences identified and no areas identified as benefiting from flood defences or storage within 250m of the site. There are a no surface water abstraction licences recorded within 2km of the study area.

Based on the above flooding information, SEL consider that the Regulators are unlikely to require a standalone flood risk assessment to be undertaken for this site.

2.7 Landfills and Licensed Waste Management Facilities

The influencing distance of a gassing landfill is dependent on a number of variables, including the type of waste, geology, hydrogeology, site engineering etc. Therefore, owing to the specific nature of each of these factors, it is not possible to guarantee that a site is not within the influencing distance of a known landfill site. However, it is normal practice to consider the 250 metre consultation zone around the property when assessing risk from gas.

The Groundsure report records no landfill, historic landfill or landfill/historic landfill sites recorded by mapping within 250m of the study area.

There are no records of waste treatment transfer or disposal sites within 500m of the study area and no EA licenced waste sites within 1500m.

2.8 Ground Gases

CIRIA guidance C665 (Ref. E) requires that potentially infilled land within 250m of a study area should be assessed for risk from ground gas. Infilled land is recorded 172 north of the site, so consideration of ground gas migration is required. The source of the infilled land is past opencast workings, which extracted coal from seams at shallow depths. Coal Authority records show that these seams outcrop at the surface adjacent to Bird Lane Farms (170m north) and are not present below the site. The site geology is Penistone Flags, which lie stratigraphically below the coal seams extracted. Hence, although there is a source for potential pollutants (172m distant), there is no linkage for gases to migrate onto the site. Ground gas monitoring should not therefore be required.

A review of past coal mining activity indicates no recorded shallow mine workings or mine entries on site. Gas monitoring will not be needed to assess risk from this source.

The site is not within a Health Protection Agency (HPA) defined Radon Affected Area, as less than 1% of properties are above the action level. Under the guidelines detailed in the Building Research Establishment publication BR211 'Radon Guidance on Protective Measures for New Dwellings', no radon protective measures are considered necessary.

2.9 Other Potentially Significant Information Relating to the Site

With respect to historic industrial activities, there are 11 records of potentially contaminative past land uses within 500m of the study area identified from mapping, all of which relate to unspecified pits, heaps or quarries and all of which Groundsure indicates could be potentially infilled. None are located within 250m of the review area. However, Coal Authority records indicate past surface (opencast) coal mining of land immediately north of Bird Lane lies within 250m of the site, and should be considered as infilled land.

With regard to current land use, there are 2 records of potentially contaminative industrial activities within 250m of the study area, both relating to water pumping stations 138 & 139m north of the site. There are no vehicular repair/testing/servicing facilities and no National Grid high voltage underground electricity cables or National Grid high pressure gas transmission pipes within 500m of the site.

With respect to other historic industrial activities, there are no historic tanks, petrol/fuel stations, garage/motor vehicle repair facilities, or military facilities identified within 500m of the site.

Regarding environmental permits incidents and registers, there are no historic IPC Authorisations, Part A(1) & IPPC Authorisations, Red List Discharge Consents, List 1 or 2 Dangerous Substance Sites, Part A(2) and Part B Activities/Enforcements, Category 3 or 4 Radioactive Substance Authorisations, Licenced Discharge Consents, Water Industry Referrals, Hazardous Substances Consents/Enforcements, or COMAH/NIHHS sites, or National Incident List 1 or 2 Pollution Sites within 500m of the study area; nor sites determined as contaminated land under Part 2A of the Environmental Protection Act (1990).

With respect to environmentally sensitive areas, the site is located on green belt land and there are 20 records of ancient woodland within 2000m of the study area, the nearest being 683m distant. There are no other environmentally designated sites within 2000m of the study area.

3 CONCEPTUAL SITE MODEL AND PRELIMINARY RISK ASSESSMENT

3.1 Potential Pollutant Linkages

To determine the potential for a pollutant linkage to be present the preliminary risk assessment process involves the identification of potential sources, pathways and receptors. A pollutant linkage can only be present if all three of these factors are involved. There must be a source of contamination present, a receptor for the contamination to impact on and a pathway for the contamination to reach the receptor.

3.2 Potential Sources of Contamination

Potential sources of contamination and associated contaminants which may be present on site are shown in the table below:

Table 3: Potential Sources of Contamination on site

Potential Sources	Potential Contaminants
On Site	
Potential pollutants from past agricultural land use. Corrugated asbestos roofing.	Metals/metalloids including Arsenic, Cadmium, Chromium, Nickel, Copper, Lead, Mercury, Zinc. Sulphates/Sulphides. Polycyclic Aromatic Hydrocarbons (PAHs) Petroleum Hydrocarbons (TPH) Potential localised Asbestos.
Off Site	
Infilled land within 250m of site (172m N).	Metals/metalloids including Arsenic, Cadmium, Chromium, Nickel, Copper, Lead, Mercury, Zinc. Sulphates/Sulphides. Polycyclic Aromatic Hydrocarbons (PAHs) Petroleum Hydrocarbons (TPH) Ground gas

3.3 Potential Pathways and Receptors

3.3.1 Human Health

- **Chronic Risks**

The chronic risks to human health take into account those risks to end users of the site.

- Ingestion of soil
- Ingestion of dust
- Dermal contact with soil
- Dermal contact with water
- Dermal contact with dust
- Inhalation of gases and vapours
- Inhalation of fugitive soil dust
- Inhalation of fugitive building dust
- Migration of contaminants through soil/groundwater

- **Acute Risks**

Acute risks are considered with respect to construction workers/engineers on site.

NB: During any intrusive ground works appropriate health and safety measures should be adopted to protect site workers from any potential risks associated with contamination in the ground. This should include the use of any personal protective equipment necessary and a general awareness of any possible risks to safety and human health on site.

3.3.2 Controlled Waters

- **Groundwater**

The site bedrock is classified as a Secondary (A) Aquifer (Minor Aquifer) and the site does not lie within 500m of a Source Protection Zone.

No surface water abstraction or potable water abstraction licences are located within 2000m of the study area. With respect to surface water abstraction licences, there are 4 within 2000m of the site, the nearest being 1770m distant.

Groundwater will not be considered a sensitive receptor for this development.

Surface Water

There are no recorded watercourses on site, the nearest feature being Hollin Dyke 154-246m distant. Surface water will not be considered a highly sensitive receptor for this development.

3.4 Initial Conceptual Site Model

Based on all the information gained in previous sections of this report the initial Conceptual Site Model (CSM) identifies the potential pollutant linkages which may exist on the site. Unexpected contaminated material may be encountered during the site preparation and may have the potential to impact on various receptors including human health of site-end-users and controlled waters.

No evidence of significantly contaminated material was present on the surface at the time of the walkover. From the available information the initial conceptual model is presented in the table below:

Table 4: Initial Conceptual Site Model

Potential Pollutant (Source)	Potential Linkage (Pathway)	Receptor
Past agricultural uses on site. Removal of on-site corrugated asbestos roof as part of conversion. Potential infilled land within 250m of site (172m N).	Migration and inhalation of soil / gas, vapours or dust. Ingestion of and dermal contact with contaminated soil, groundwater or dust. Potential migration of water via fractures in the ground or via runoff.	Construction/ maintenance workers. Site end-users. Neighbouring occupants.

3.5 Preliminary Environmental Risk Assessment

This section aims to expand the initial CSM to assess the level of risk for each potential pollutant linkage.

Risk is a combination of the ‘likelihood’ of an event occurring and the magnitude of its ‘consequences’. Therefore, in order to assess risk, both the likelihood and the consequences of an event must be taken into account. SEL has adopted guidance provided in CIRIA C552 for use in the production of risk assessments.

The likelihood of an event can be classified on a four point system using the following terms:

- **Highly likely:** The event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- **Likely:** It is probable that an event will occur, or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- **Low likelihood:** Circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term;
- **Unlikely:** Circumstances are such that it is improbable the event would occur even in the long term.

The terms and definitions relating to severity are:

- **Severe:** Short term (acute) risk to human health likely to result in ‘significant harm’ as defined by the Environment Protection Act 1990, Part 2A. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000);
- **Medium:** Chronic damage to human health (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000);
- **Mild:** Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000). Damage to sensitive buildings, structures or the environment; and
- **Minor:** Harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

Once the likelihood of an event occurring and its severity have been classified, a risk category can be assigned as below.

Table 5: Risk Classification System from CIRIA C552

Probability	Consequences			
	Severe	Medium	Mild	Minor
High	Very high	High	Moderate	Moderate / Low
Medium	High	Moderate	Moderate / Low	Low
Low	Moderate	Moderate / Low	Low	Very Low
Unlikely	Moderate / Low	Low	Very Low	Very Low

The pollutant linkages from the initial CSM and resulting risks are considered in the table below:

Table 6: Preliminary Environmental Risk Assessment

Receptor	Potential Pollutant Linkage	Estimated Degree of Risk to Receptor
Site end users	Inhalation of soil, gas, vapours or dust.	Low
	Ingestion of, and dermal contact with, contaminated soil, groundwater or dust.	Low
	Ground instability.	Low
Construction/ maintenance workers	Inhalation of soil, vapours or dust.	Low*/**
	Ingestion of, and dermal contact with, contaminated soil, groundwater or dust.	Low*/**
	Ground instability.	Low
	Migration / runoff.	Low**
Neighbouring occupants	Migration and inhalation of dust during demolition.	Low*/**

* Assumes basic PPE is used.

**Assumes good site construction practice, including control of runoff / spillages / damping down

In this qualitative risk assessment, an overall **Low** risk has been applied based on current and historic land uses.

4 CONCLUSIONS & RECOMMENDATIONS

This report has reviewed the available data for the study site. Based on current and historic land uses within the review area, the Preliminary Environmental Risk Assessment has derived a risk rating of **Low** for the site.

This rating is based on the assumption that when development occurs, basic PPE is worn and good site construction practices followed.

SEL understand the development includes the retention of the main structure of the building and replacement of the corrugated asbestos roof. The rating is also conditional on best practices being followed when these works are undertaken, including the employment of licenced asbestos removal contractors to dismantle the roof.

Notwithstanding the above, the Preliminary Risk Assessment, based on information provided by the Coal Authority, Groundsure reports and historical mapping, augmented by on site visual inspection, indicates that Phase 2 intrusive site investigations should not be required.

Further Considerations

Should the establishment of plastic pipes and/or services be envisaged as part of any future works, SEL's advice is that soil sampling requirements can vary significantly between different service providers. For this reason it is recommended that the client agree any sampling requirements with each service provider.

Should any investigation of the site commence, ongoing monitoring of any sub-surface materials exposed should take place. If any unusual, oily, brightly coloured or odorous material or unexpected tanks and containers be encountered, then the advice of a suitably qualified specialist should be sought.

4.1 Preliminary Summary

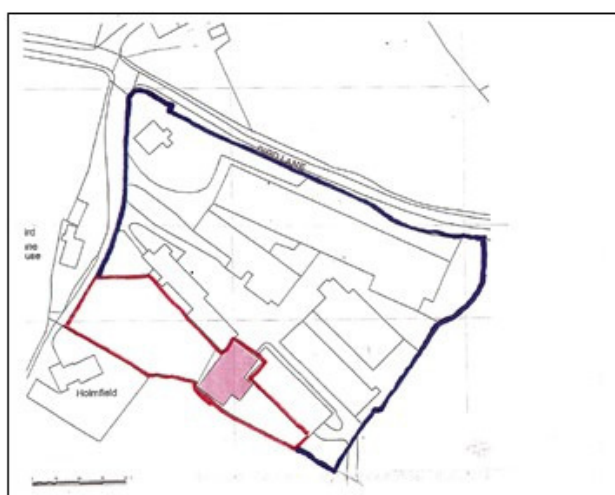
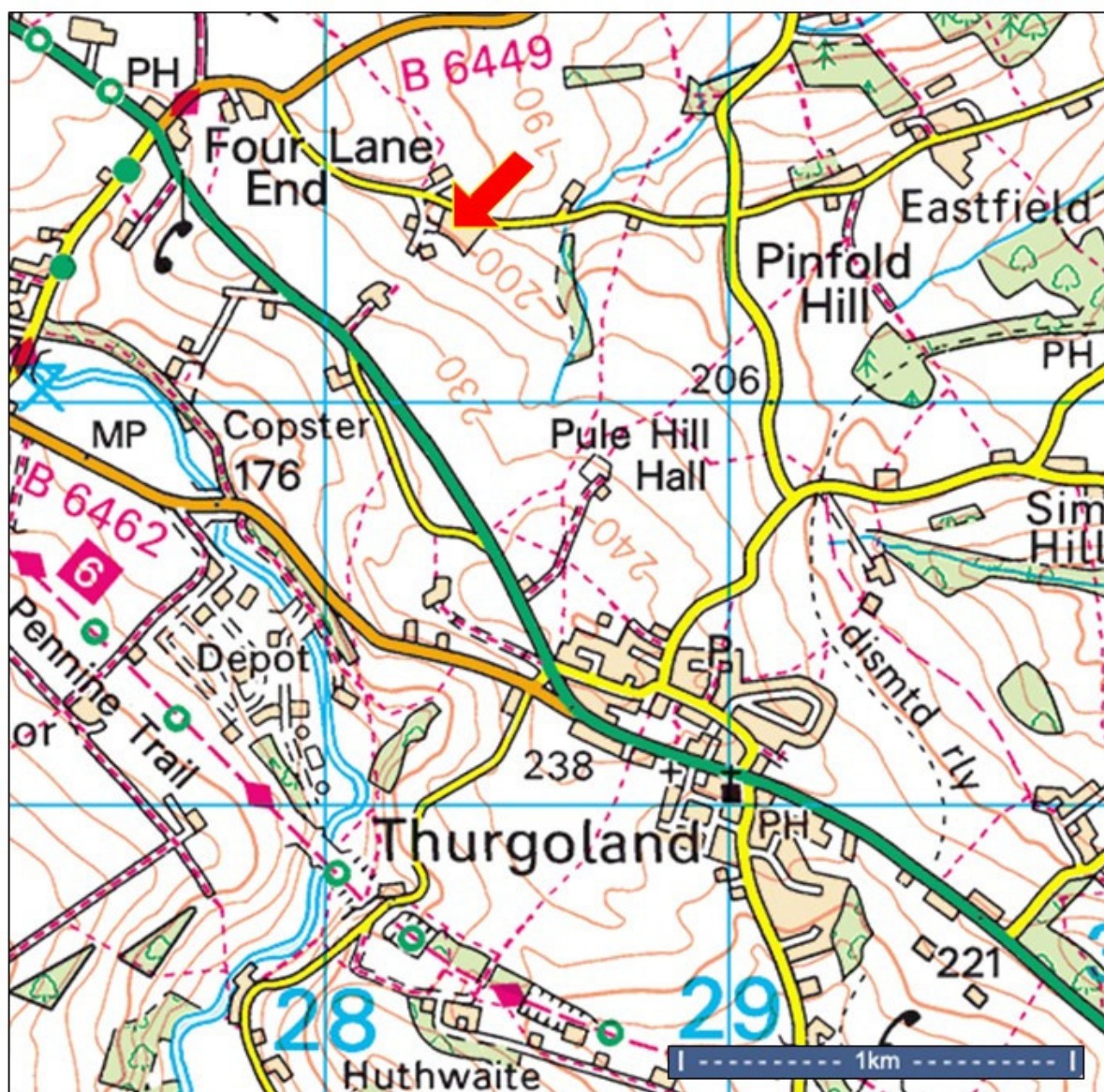
The following table offers a preliminary summary of the ground conditions based solely on the information presented in this report, it is intended for guidance purpose only.

Table 7: Preliminary Summary

Description	Comments
Foundations	Shallow footings likely to be viable (sandstone bedrock).
Ground gases	Potentially infilled land (opencast coal site) within 250m. Infilled horizons outcropped 172m north of site. Ground gas monitoring not considered necessary.
Groundwater	Site works unlikely to impact on groundwater.
Soakaways	Likely to be suitable for soakaways.
Mining and Quarrying	No recorded risk from past coal mining activities.
Made ground	No made ground recorded on site.

APPENDIX A

- (i) Location Plan.
- (ii) Coal Authority Search - Development High Risk Areas.
- (iii) Coal Authority Search – Mine Shafts and Adits.
- (iv) Coal Authority Search – Recorded Past Shallow Coal Mine Workings & Past Probable Shallow Coal Mine Workings.
- (v) British Geological Survey Search – Geological Plan, Sheet 100 (Sheffield).
- (vi) Ordnance Survey Search – Former Site Activities.



Site Location

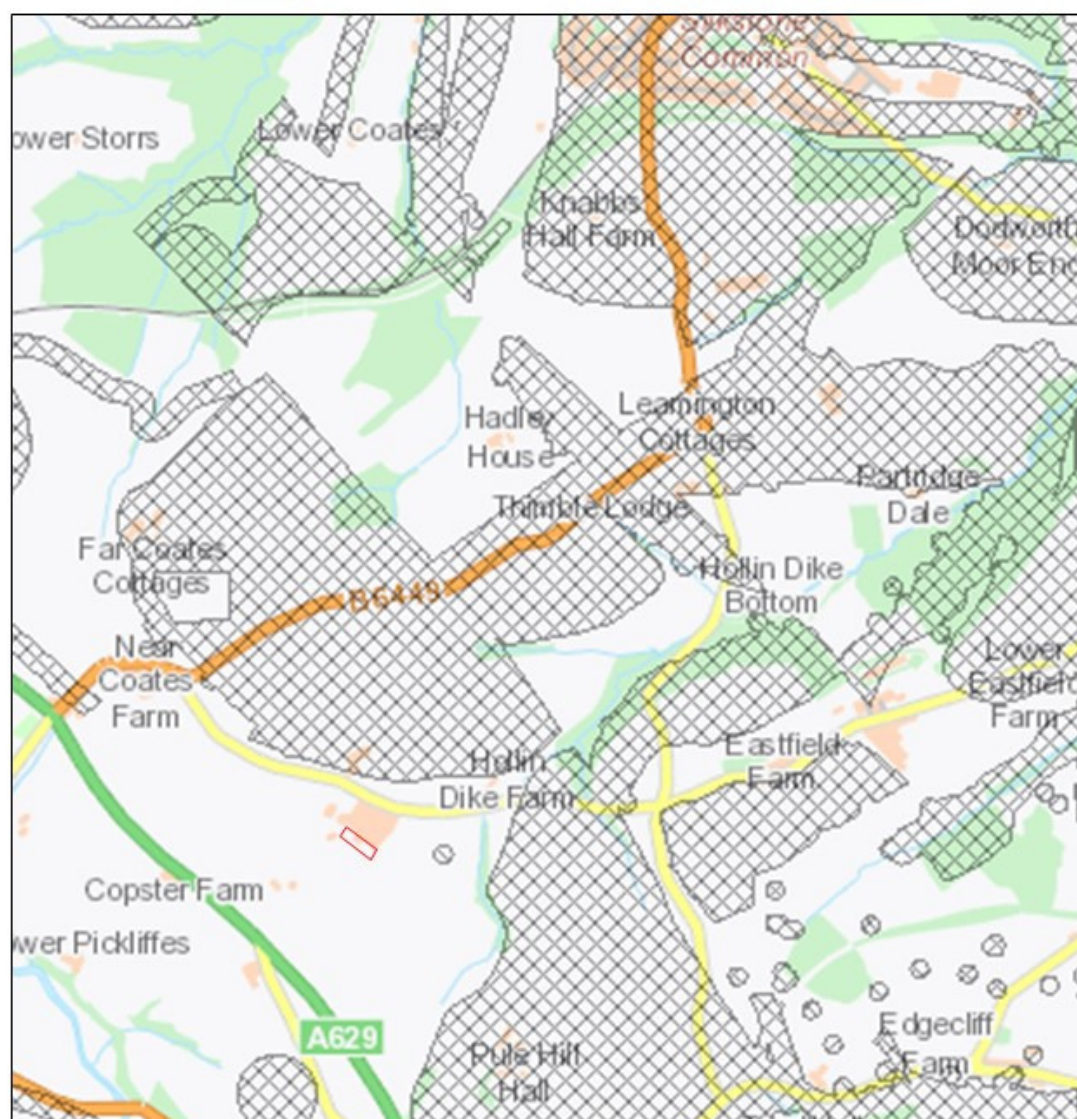
Ref No. 18167

Bird Lane House Farm,
Bird Lane, Thurgoland,
South Yorkshire, S368YD.

FIGURE 1:

LOCATION PLAN

(NGR 428310, 402430)



Ref No. 18167

**Bird Lane House Farm,
Bird Lane, Thurgoland,
South Yorkshire, S368YD.**

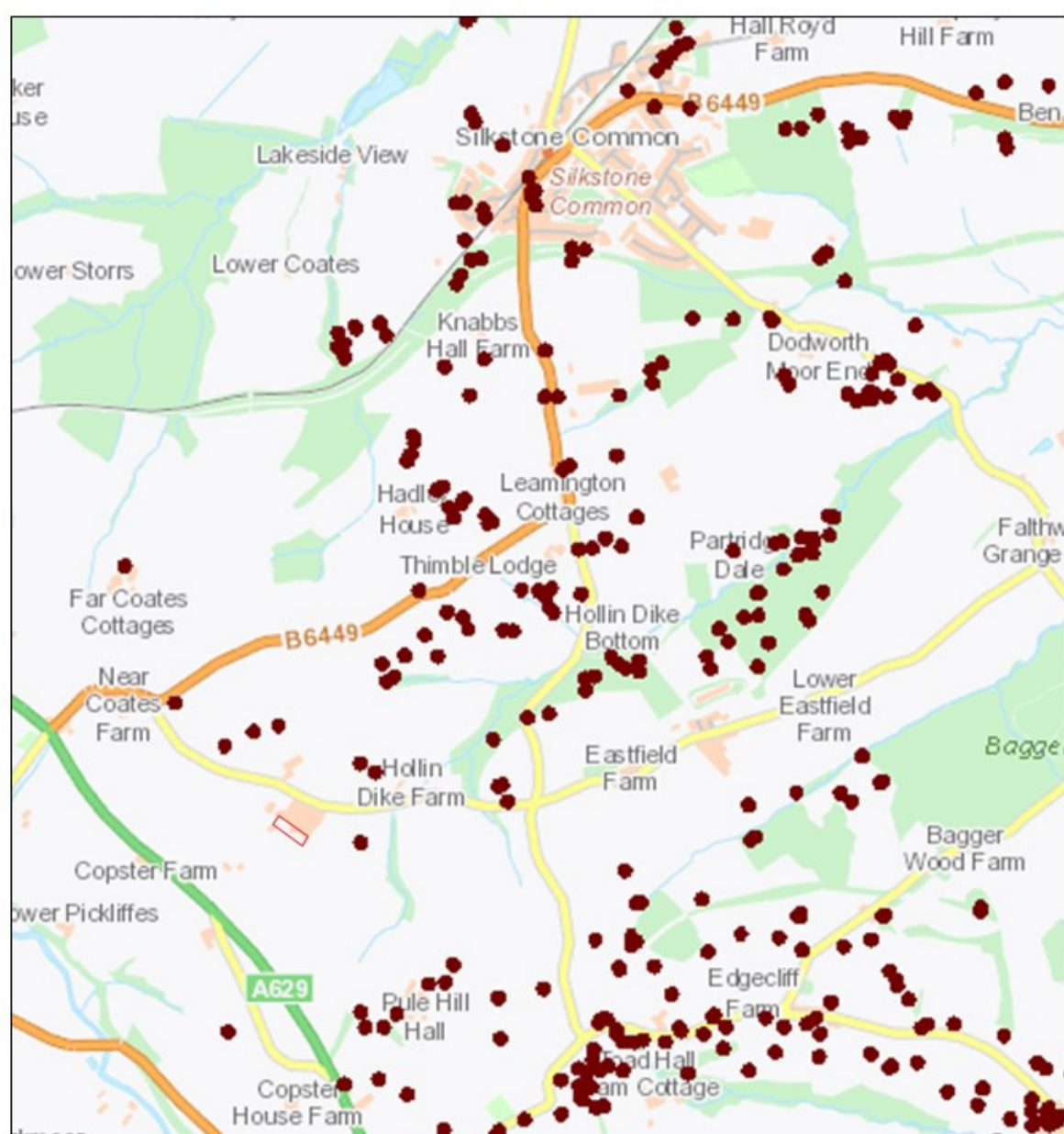
FIGURE 2:

COAL AUTHORITY SEARCH

DEVELOPMENT HIGH RISK AREAS

(NGR 428310, 402430)

The Coal Authority defines a Development High Risk Area as the part of a coal mining reporting area that has one or more recorded coal mining features which have the potential for instability, or a degree of risk, to the surface from the legacy of coal mining operations.



Ref No. 18167

Bird Lane House Farm,
Bird Lane, Thurgoland,
South Yorkshire, S368YD.



Site Location



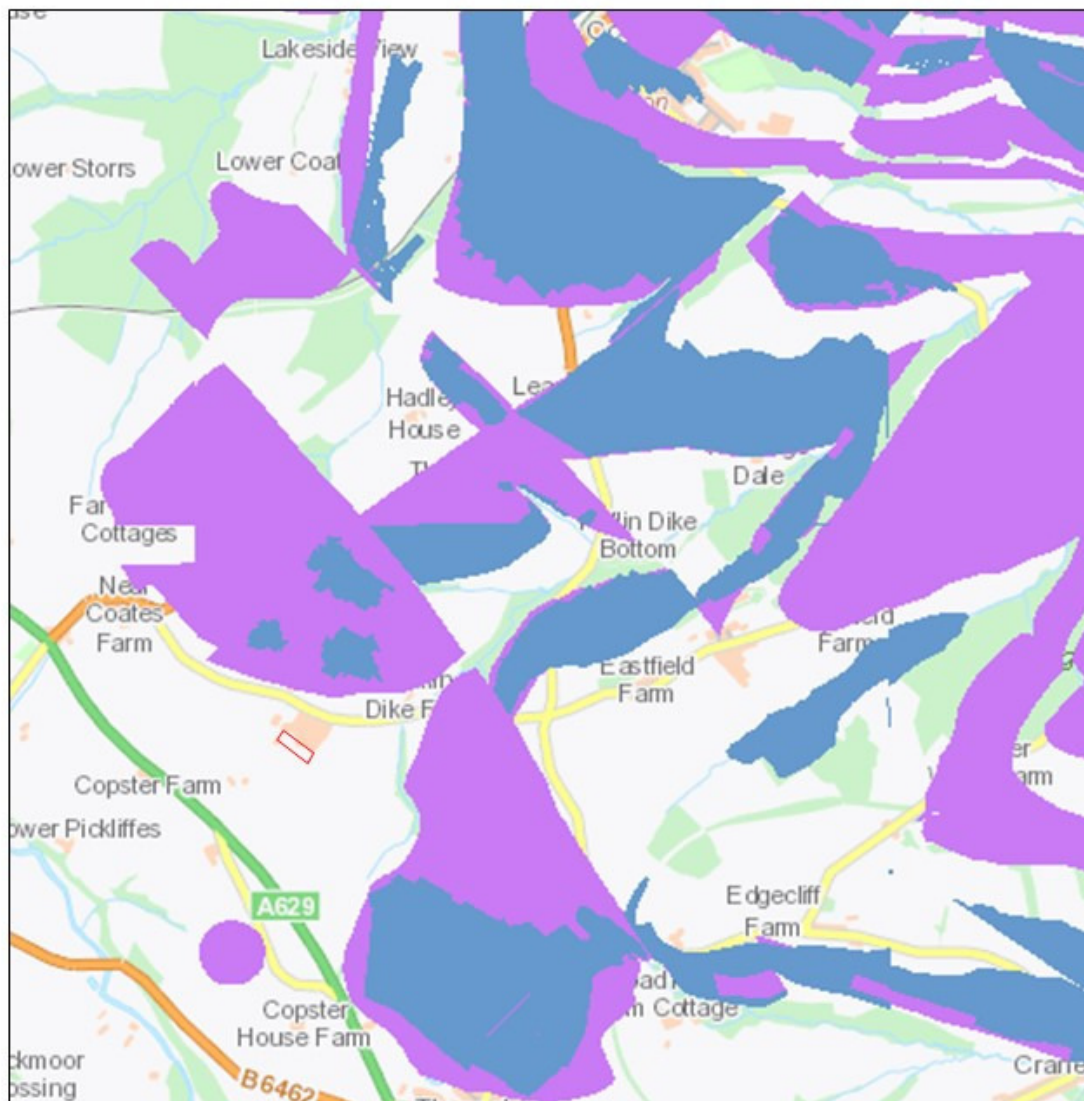
Recorded Shafts & Adits

FIGURE 3:

COAL AUTHORITY SEARCH

RECORDED SHAFTS & ADITS

(NGR 428310, 402430)



Probable shallow coal mine workings show the extent of probable shallow coal mine workings for which no records exist, but where it is likely that workable coal at shallow depths has been mined before records were kept.

Ref No. 18167

**Bird Lane House Farm,
Bird Lane, Thurgoland,
South Yorkshire, S368YD.**

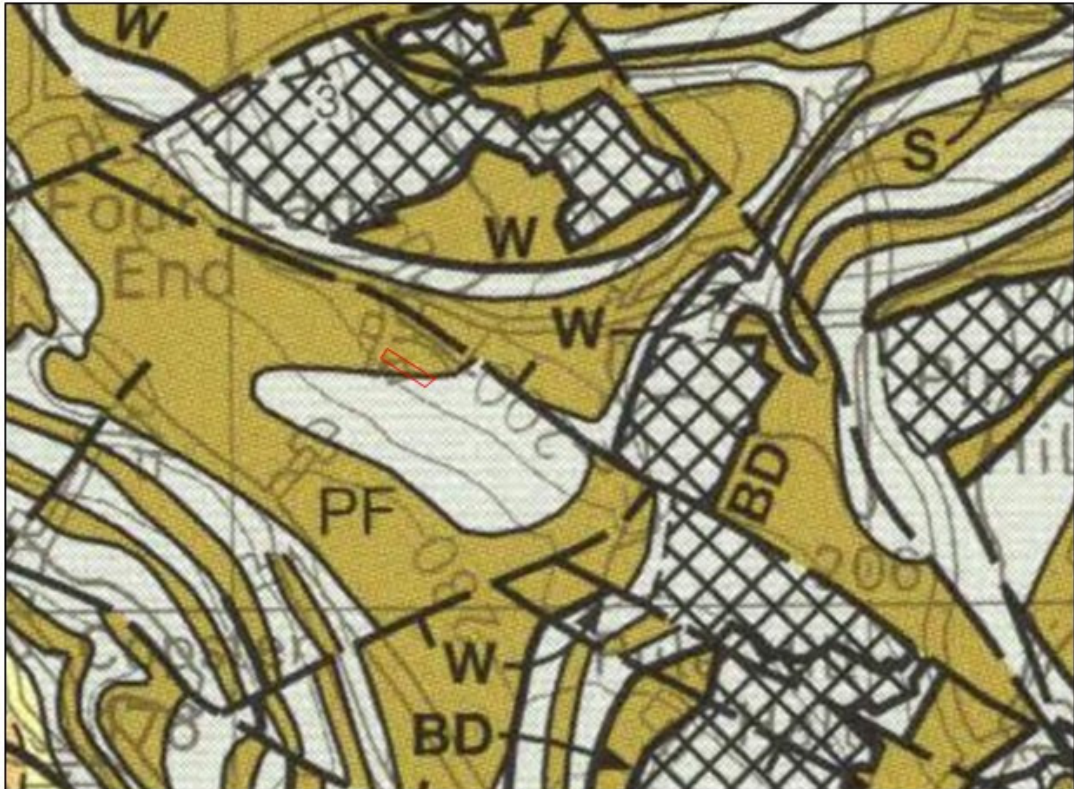
FIGURE 4:

COAL AUTHORITY SEARCH

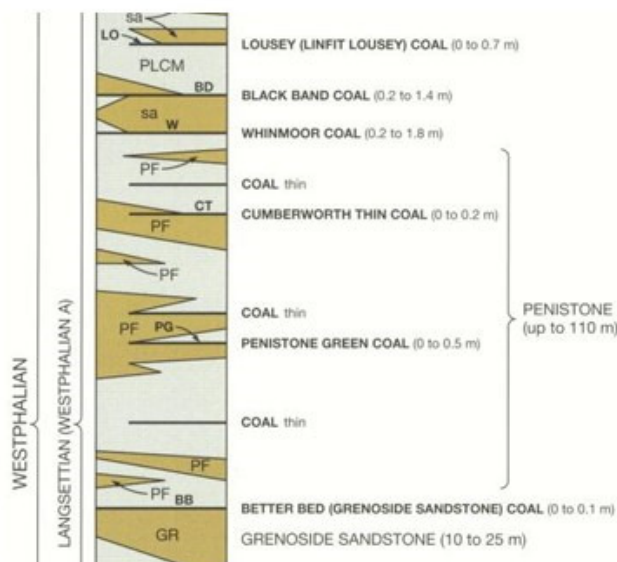
**RECORDED SHALLOW COAL MINE WORKINGS &
PROBABLE SHALLOW COAL MINE WORKINGS**

(NGR 428310, 402430)





Site Location



Ref No. 18167

Bird Lane House Farm,
Bird Lane, Thurgoland,
South Yorkshire, S368YD.

FIGURE 5:

BRITISH GEOLOGICAL SURVEY SEARCH

GEOLOGICAL PLAN

SHEET 87 (BARNSELY)

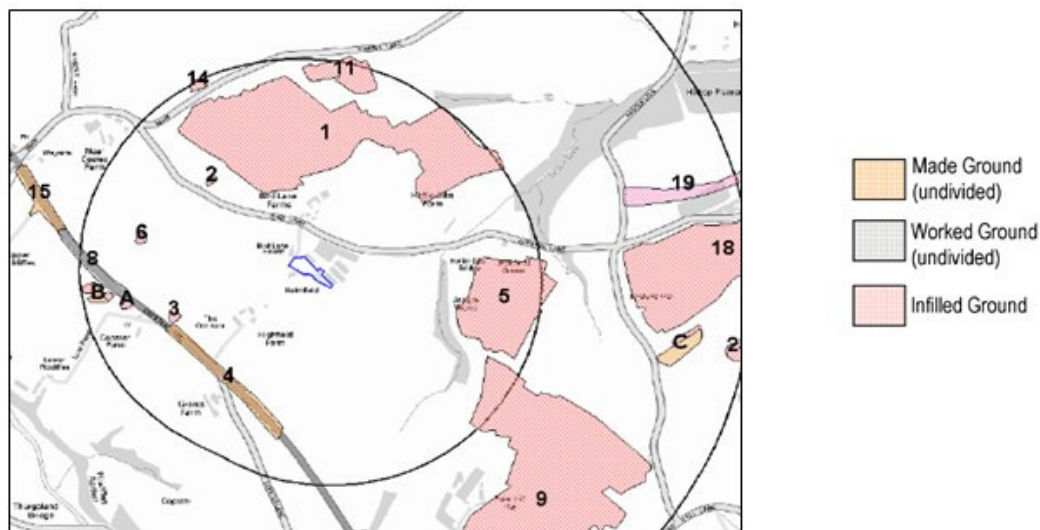
2008

1:50,000 SCALE

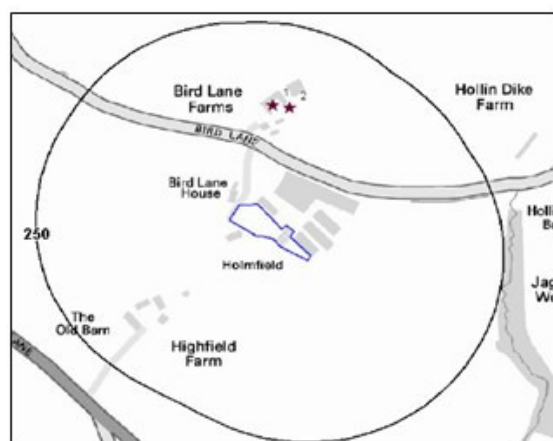
(NGR 428310, 402430)



COAL AUTHORITY SEARCH - LOCATION OF PAST OPENCAST COAL SITES



GROUNDSURE REPORT – ARTIFICIAL GROUND



GROUNDSURE REPORT – CURRENT LAND USE

Ref No. 18167

**Bird Lane House Farm,
Bird Lane, Thurgoland,
South Yorkshire, S368YD.**

FIGURE 6:

POTENTIALLY CONTAMINATIVE LAND USE

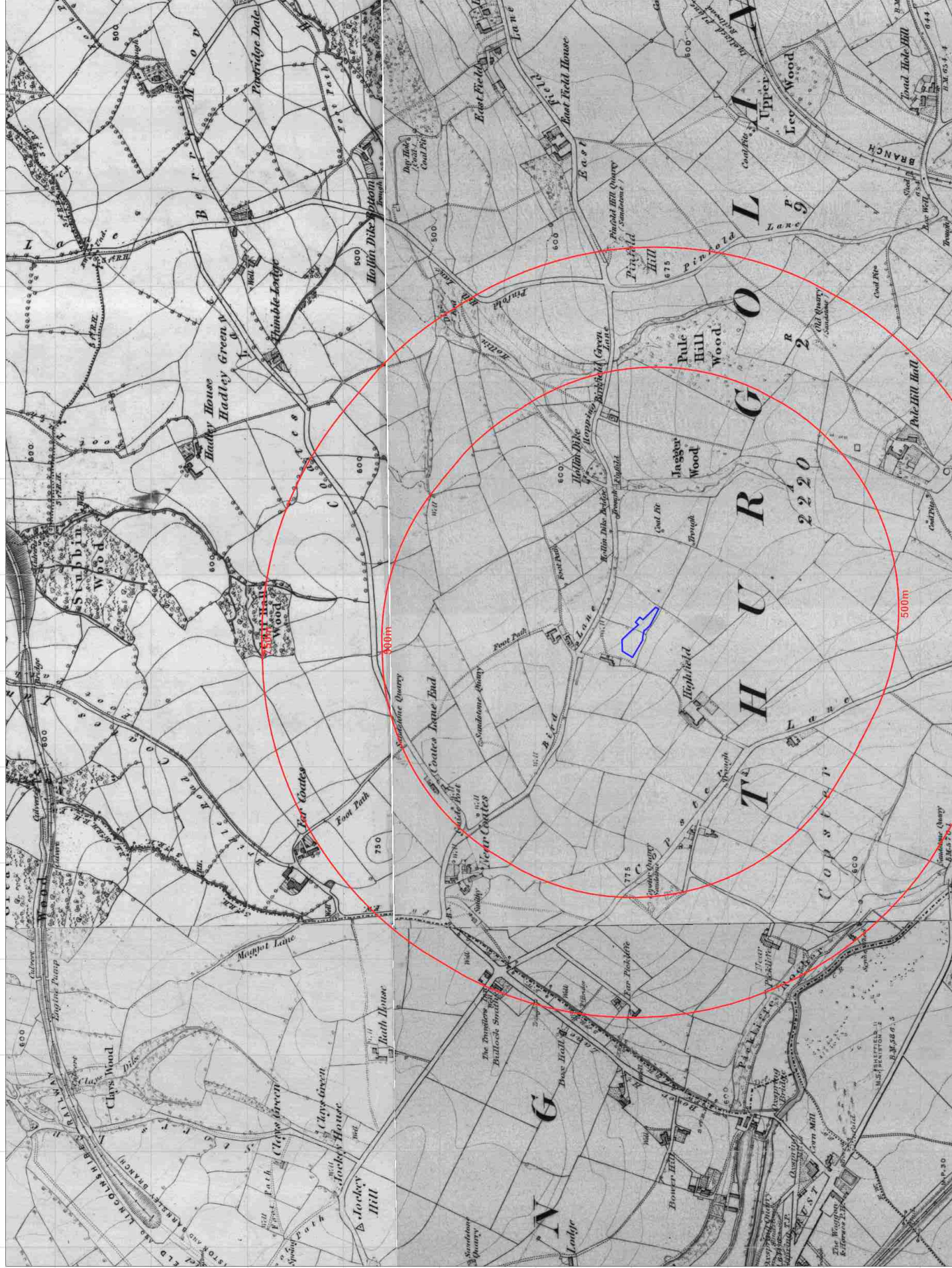
(NGR 428310, 402430)

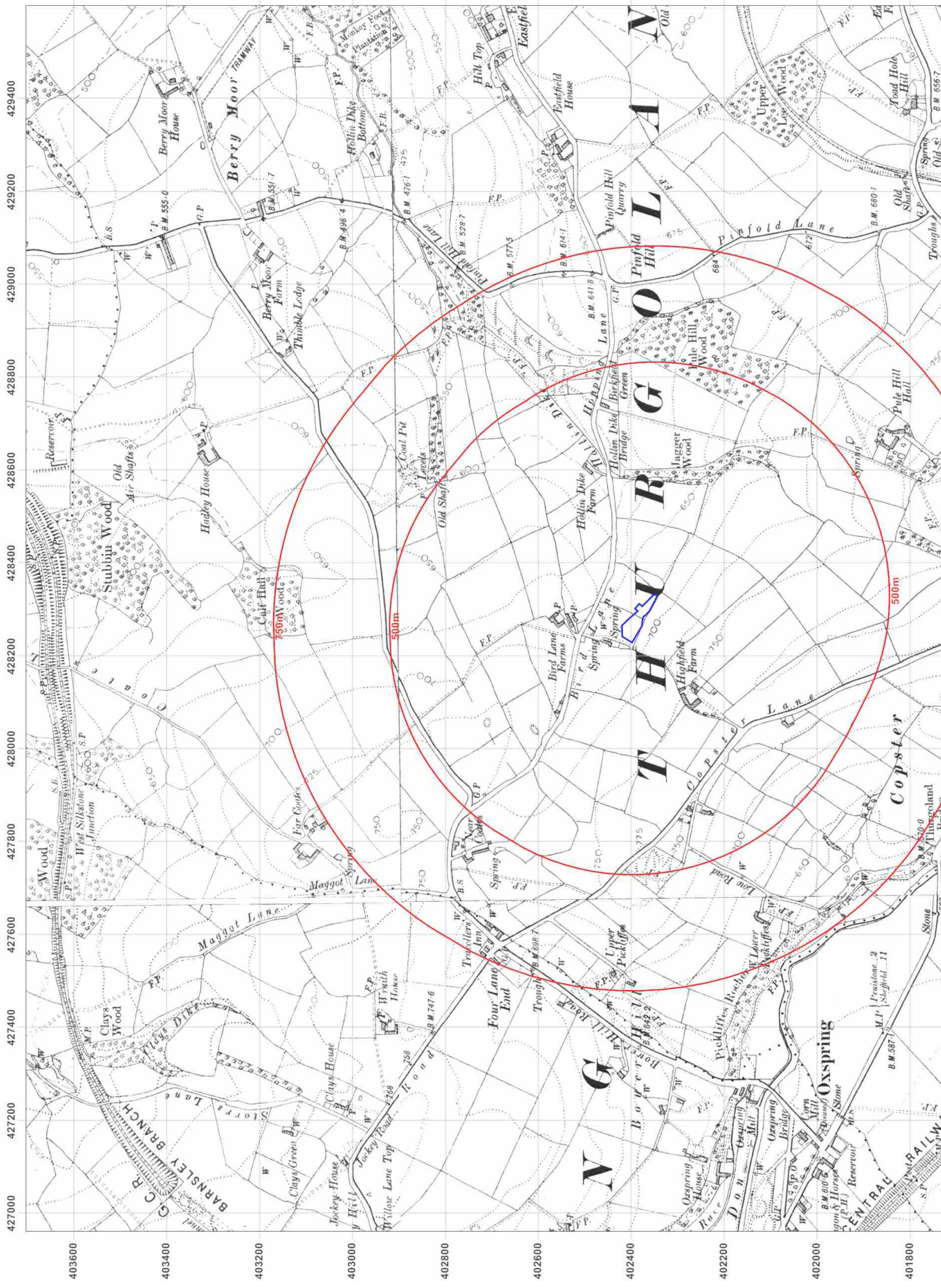
APPENDIX B

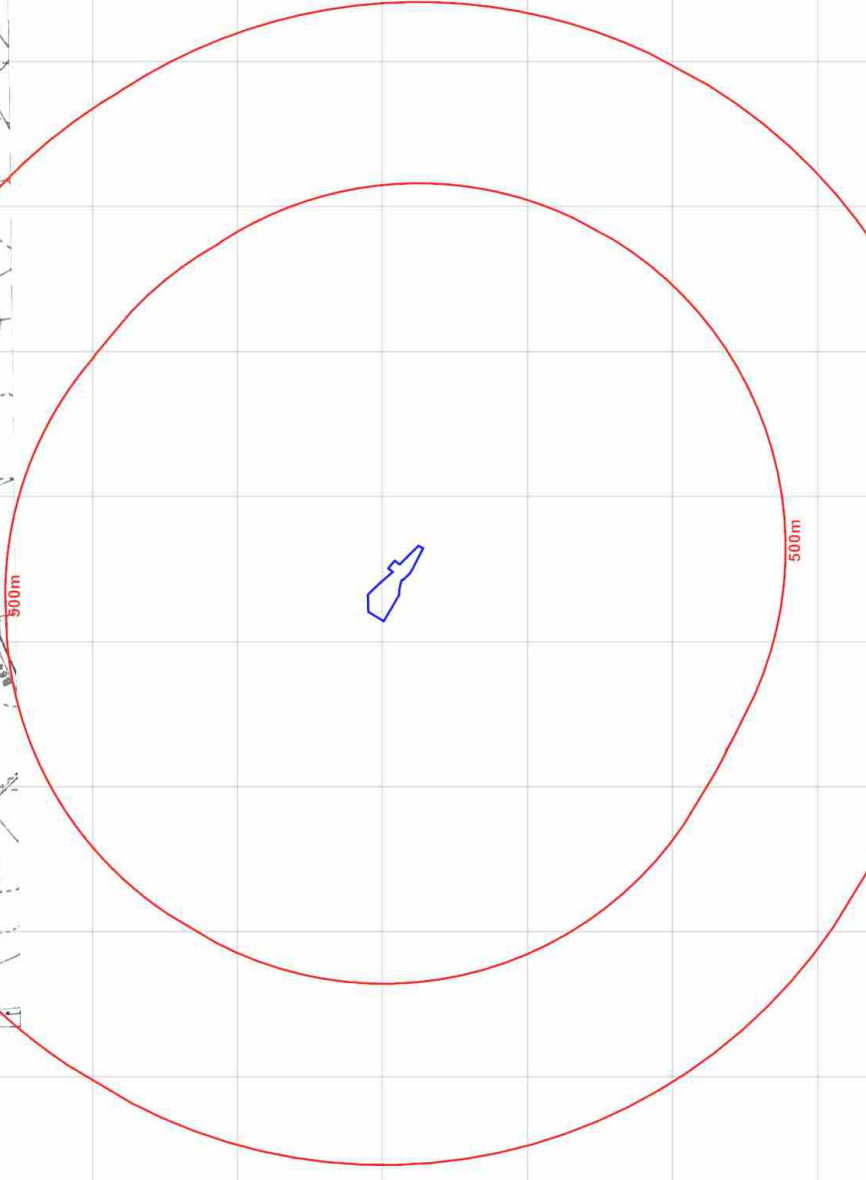
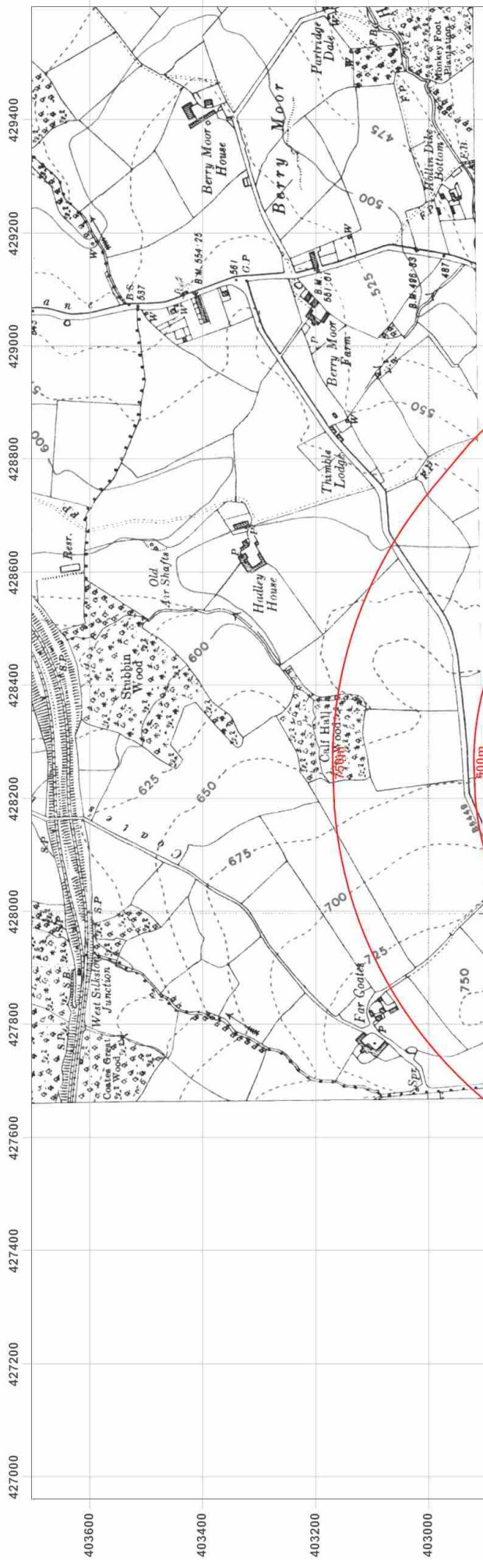
(i) Historical Mapping

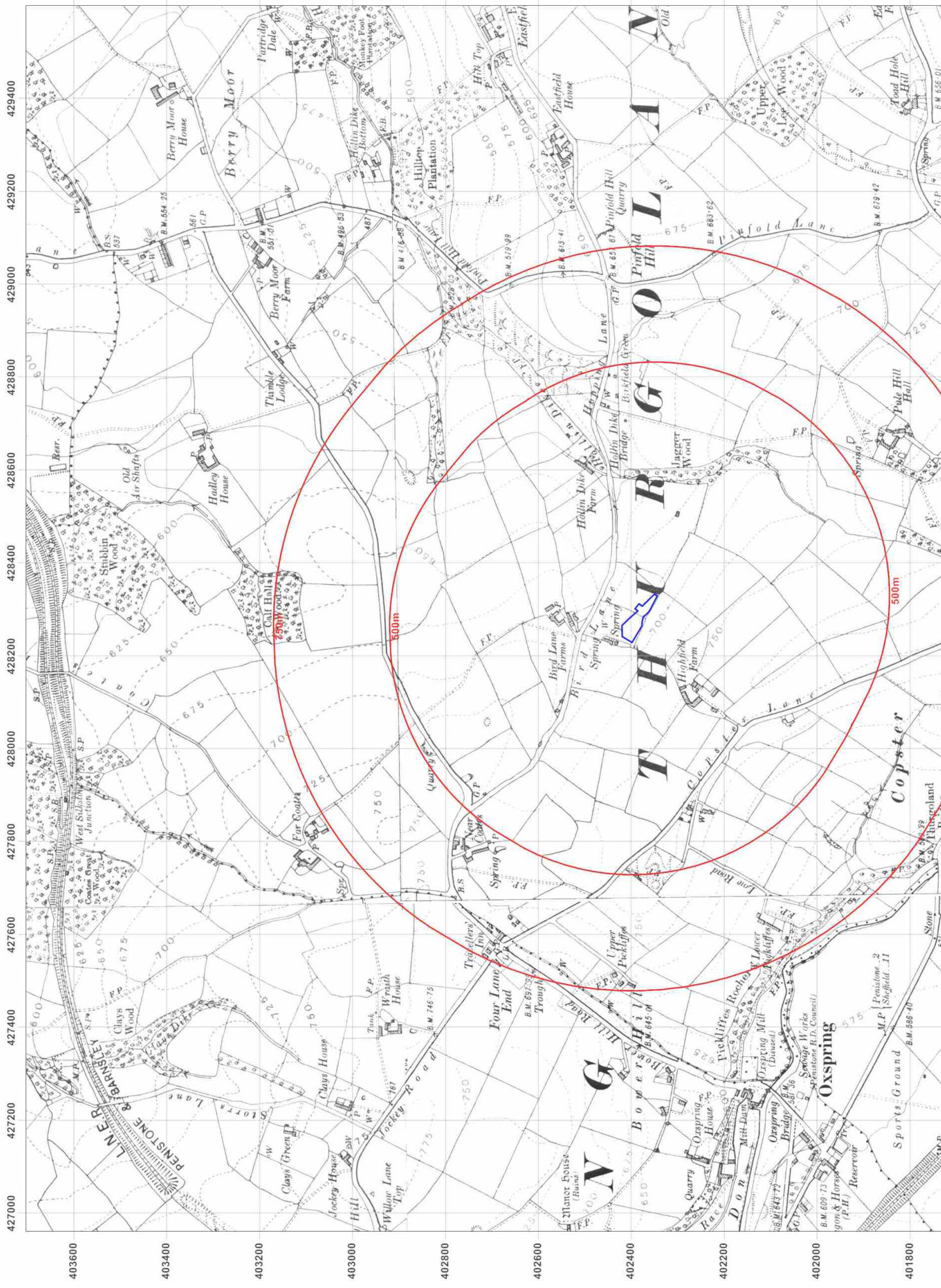
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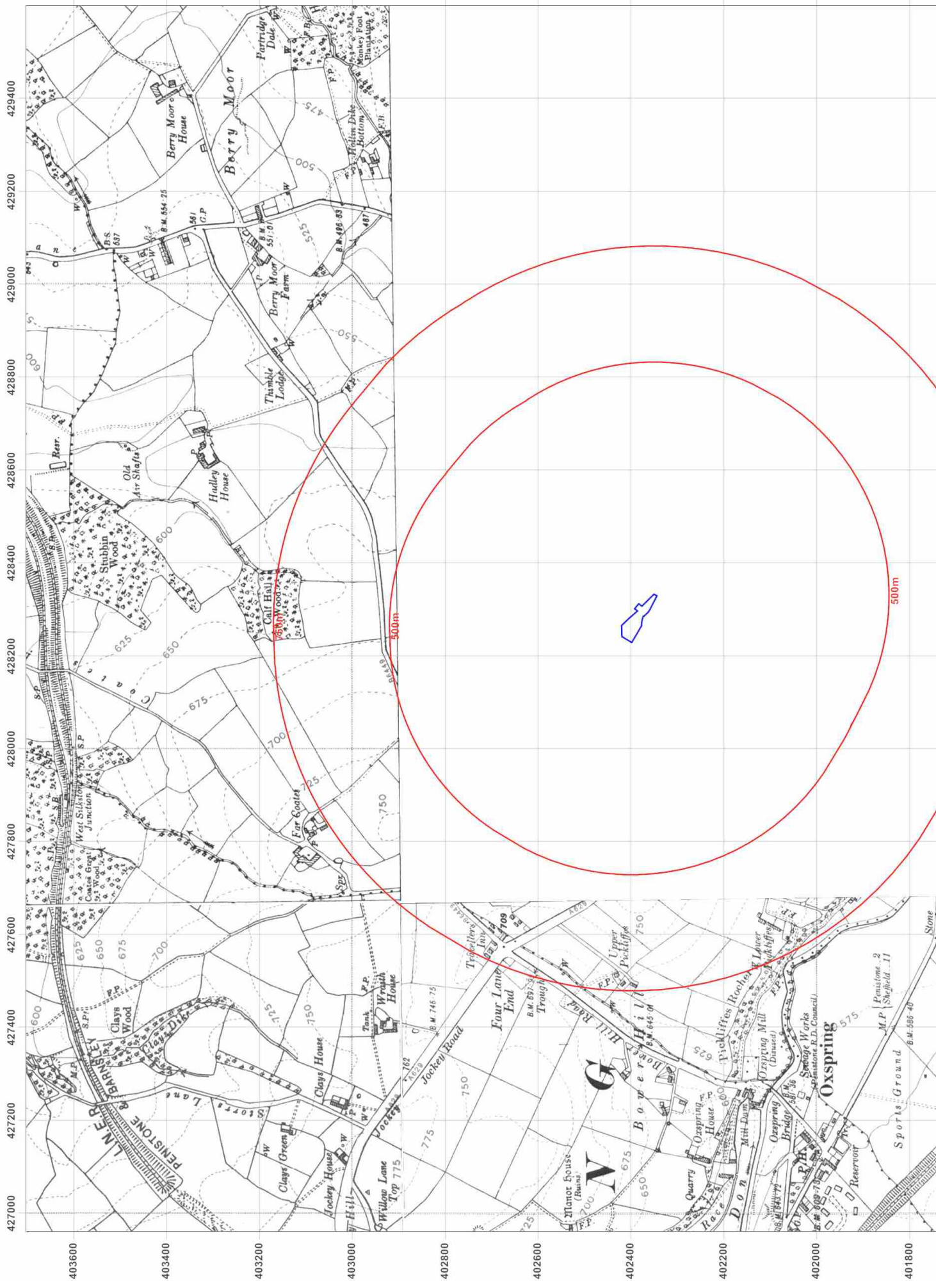
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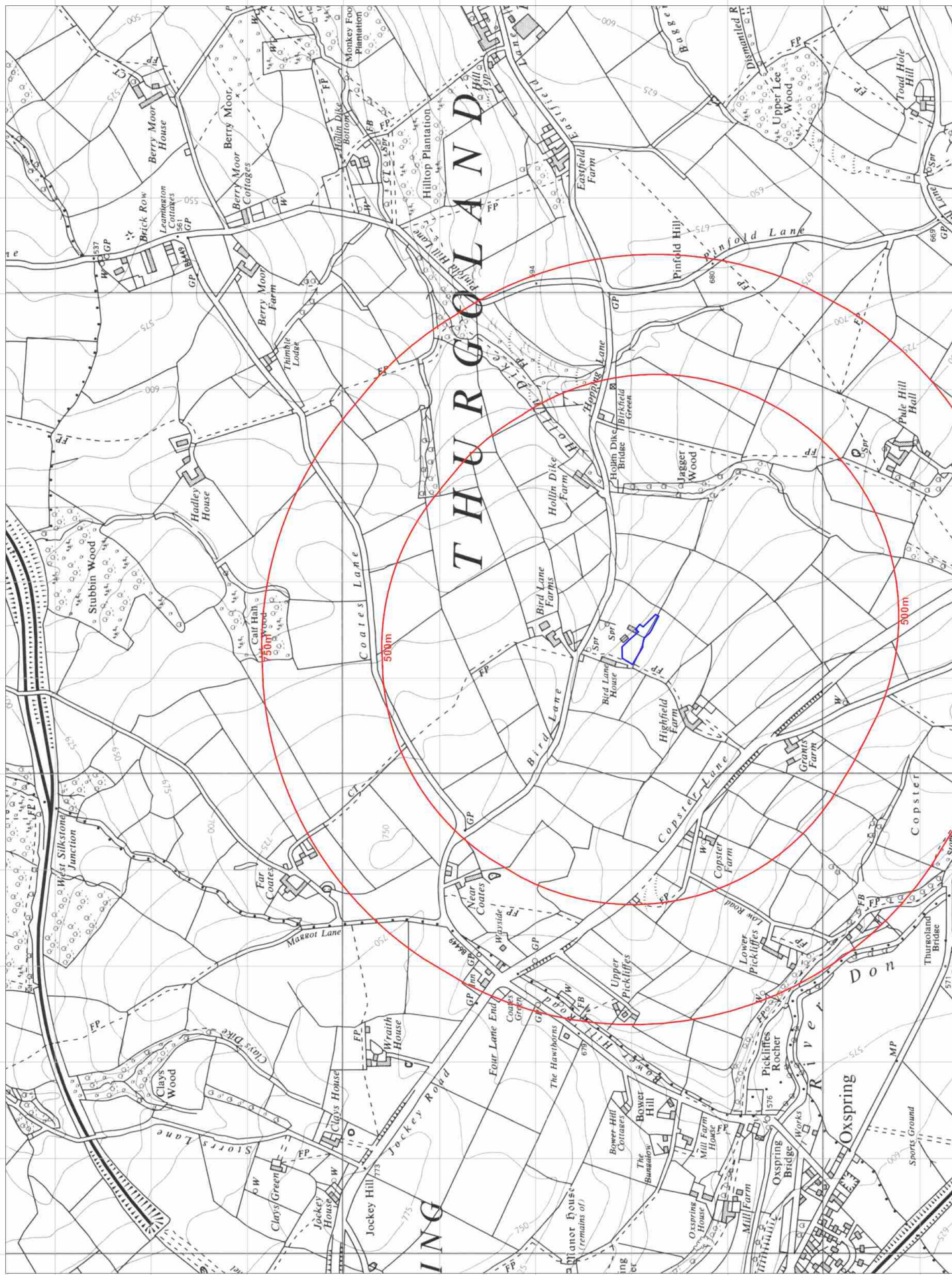






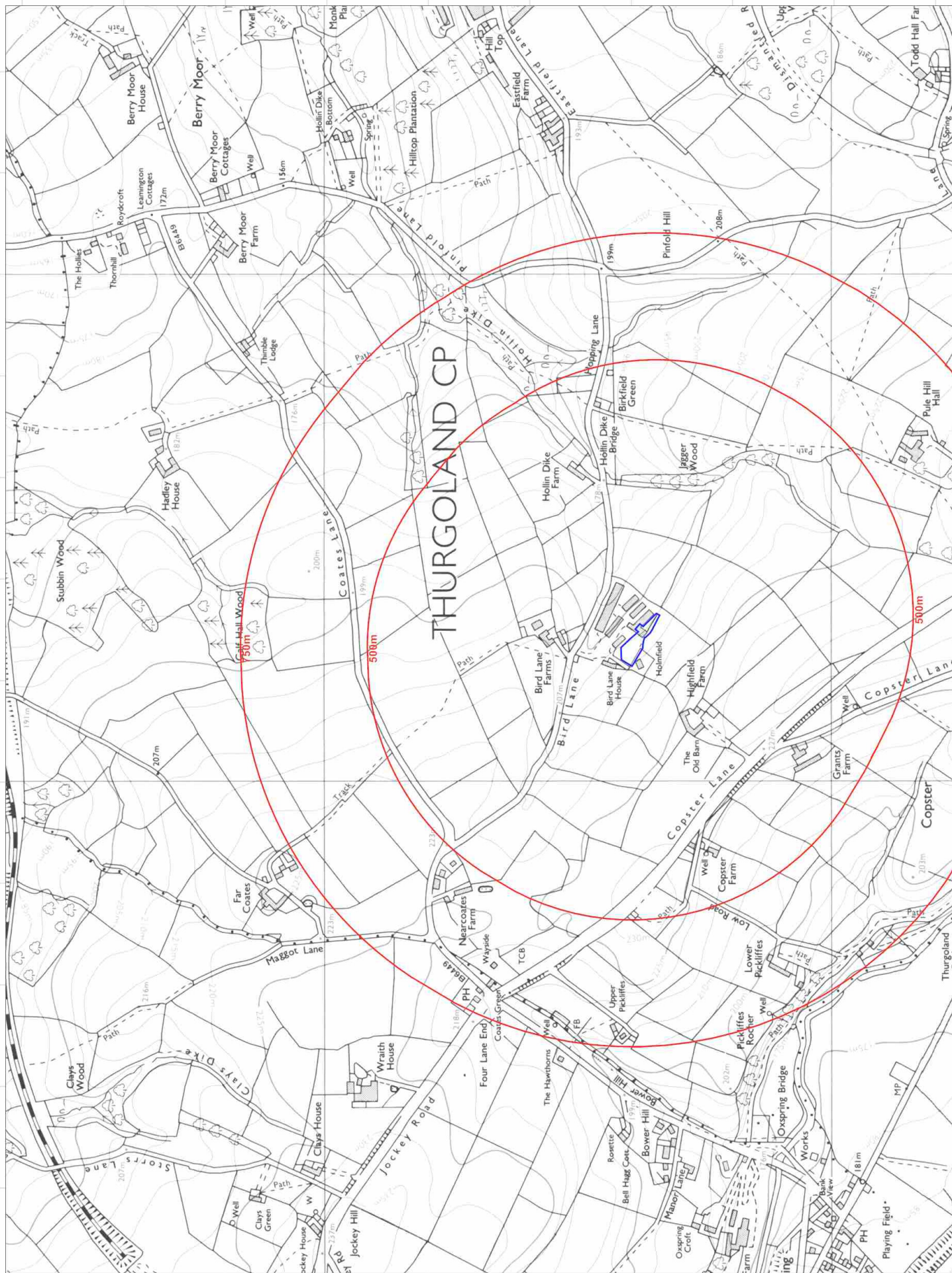
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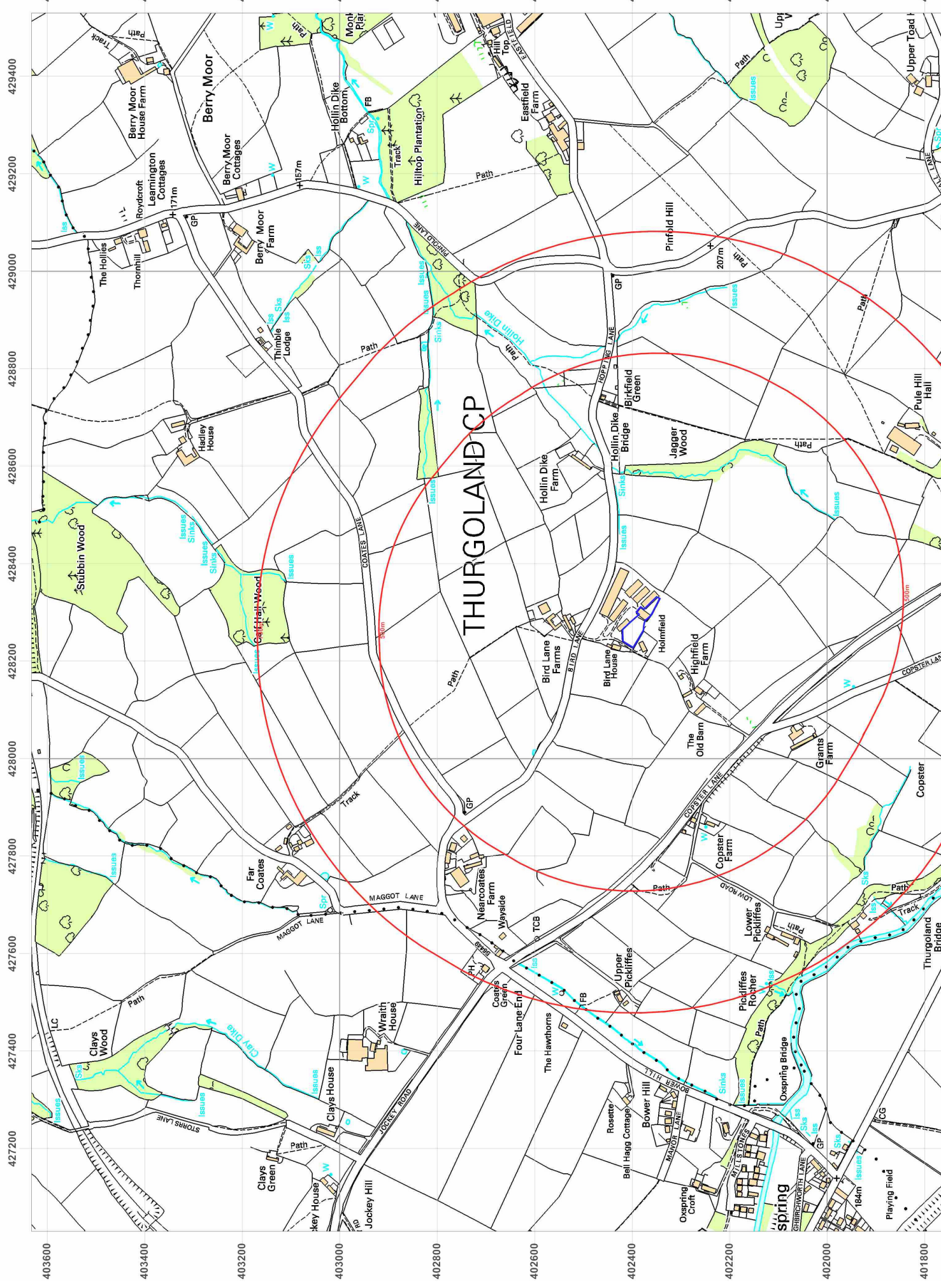
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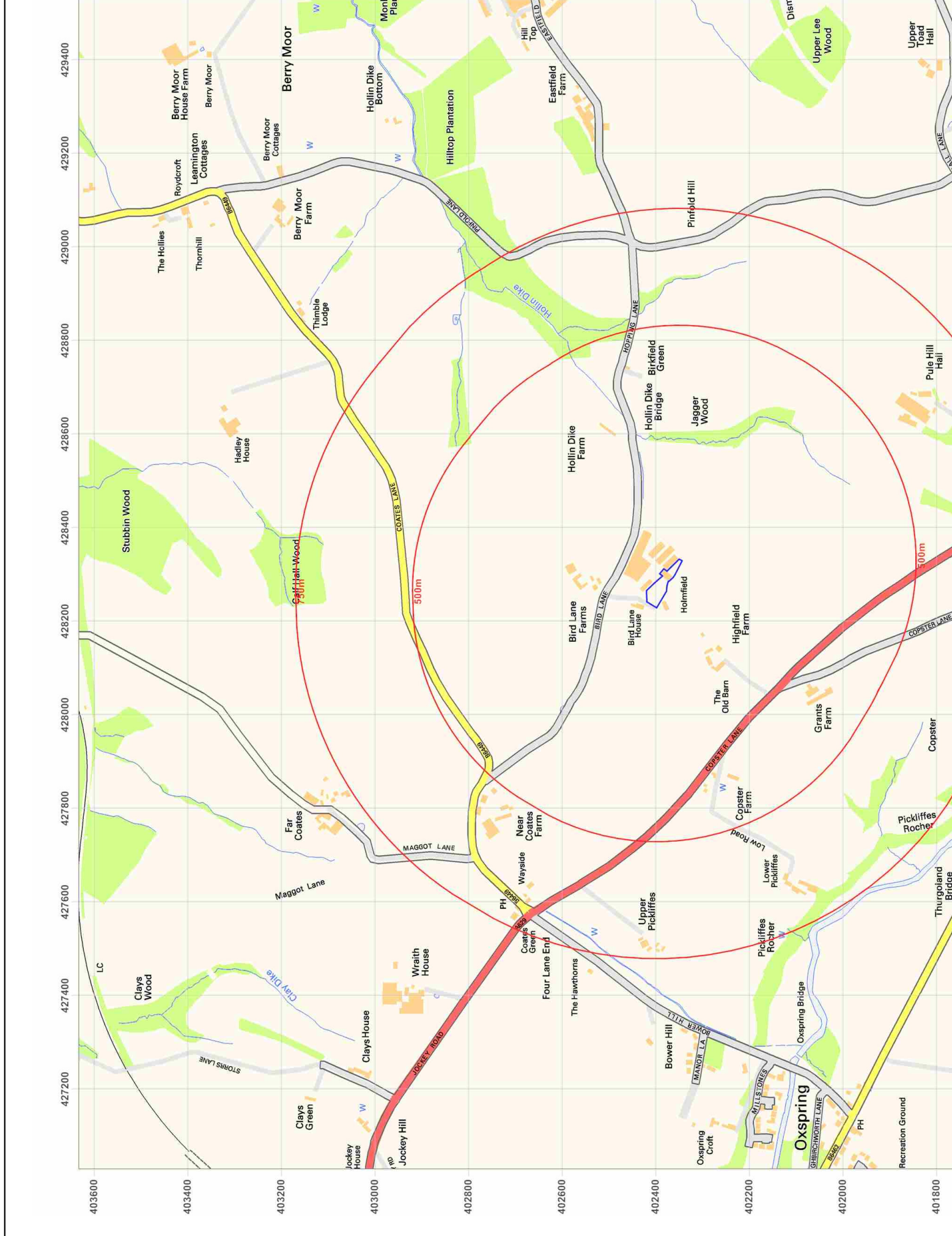


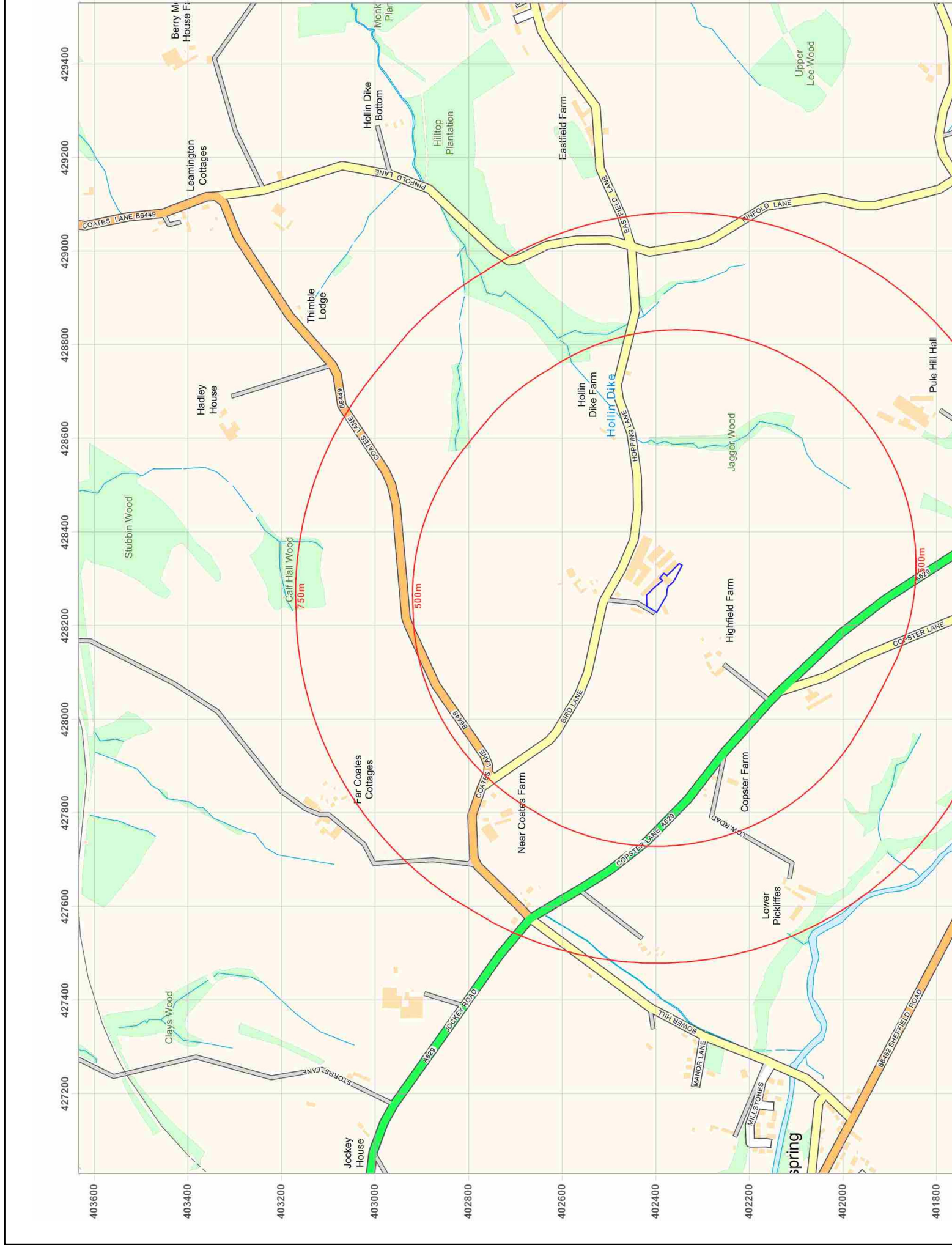
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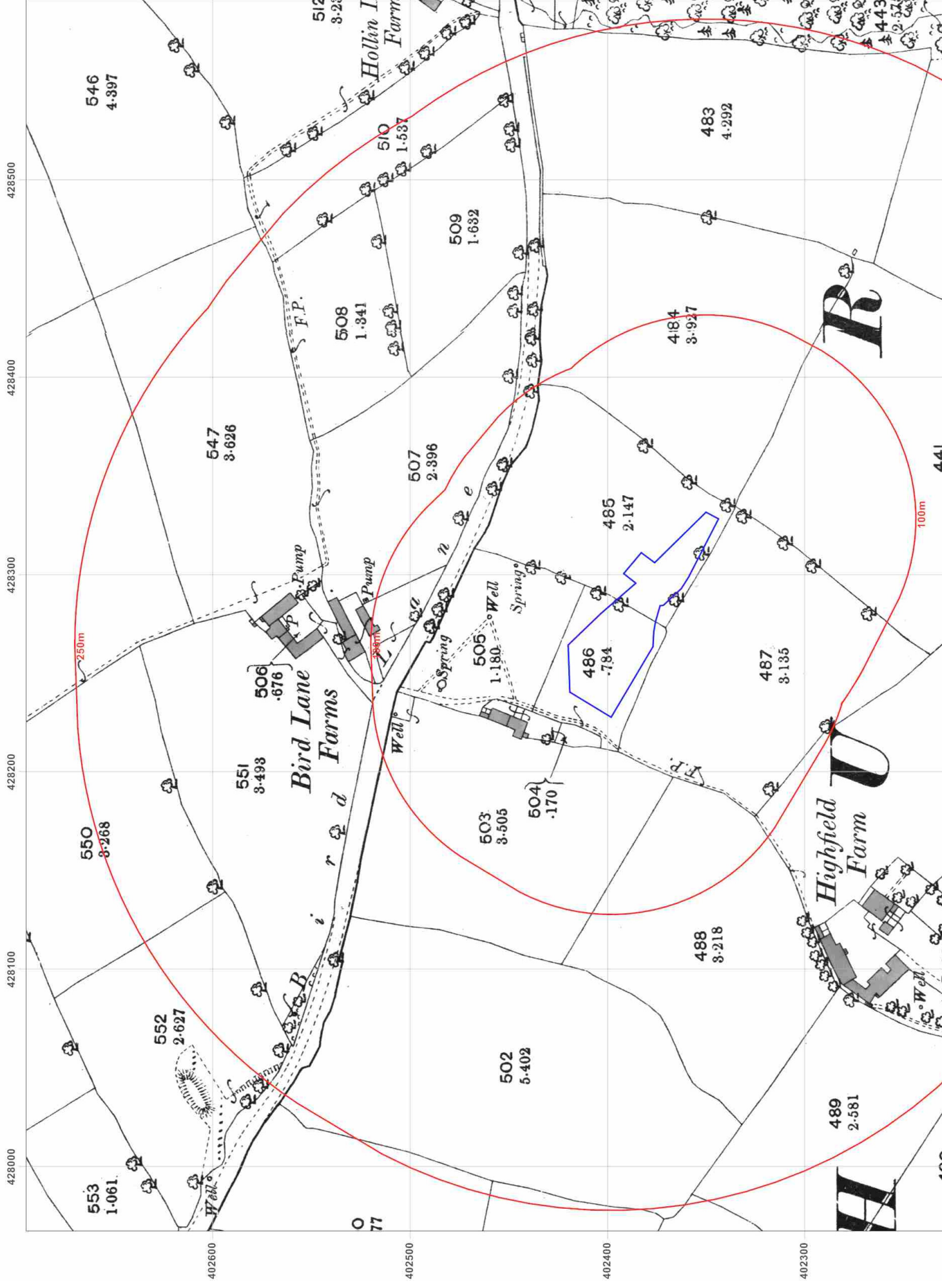
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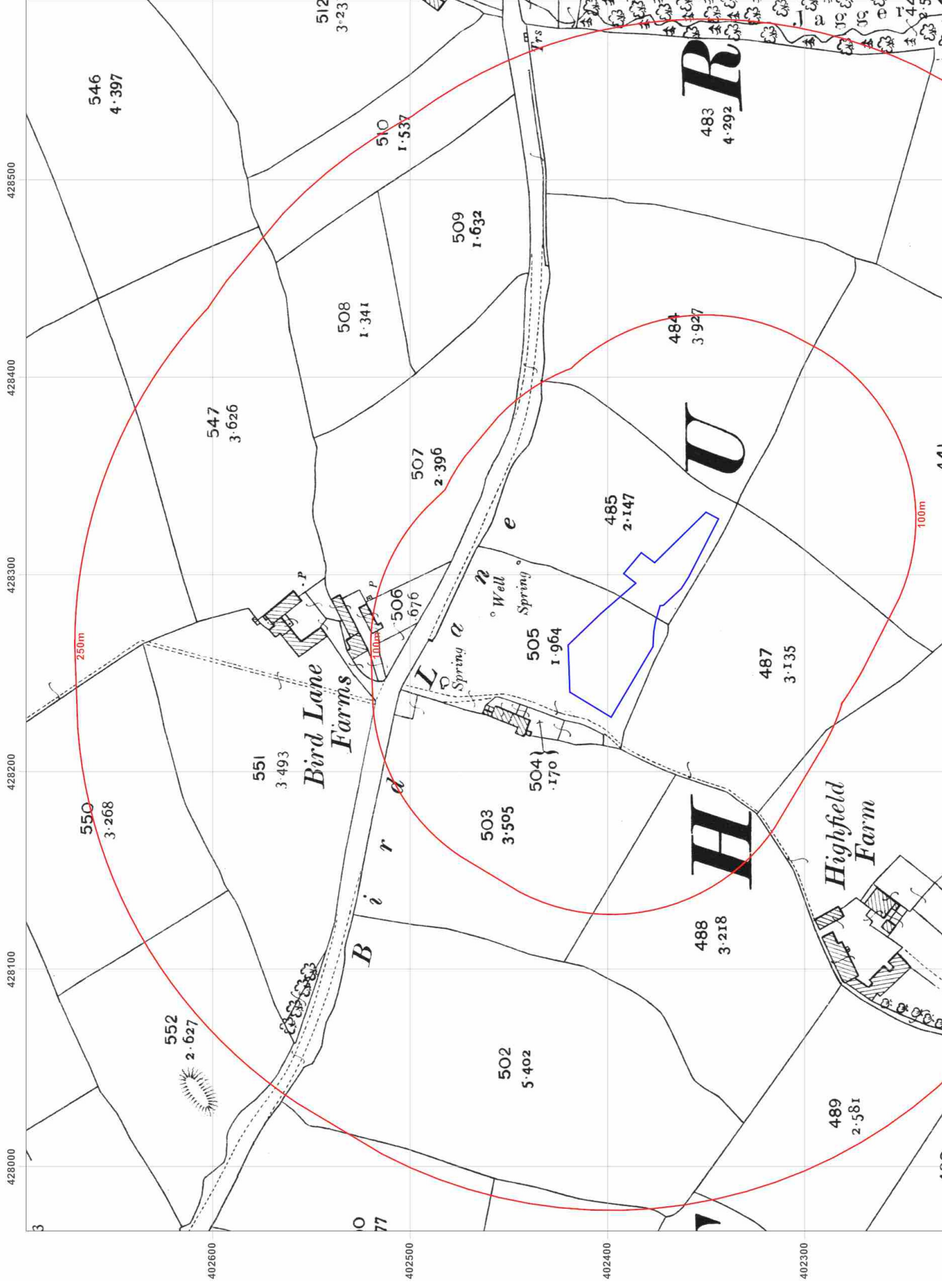


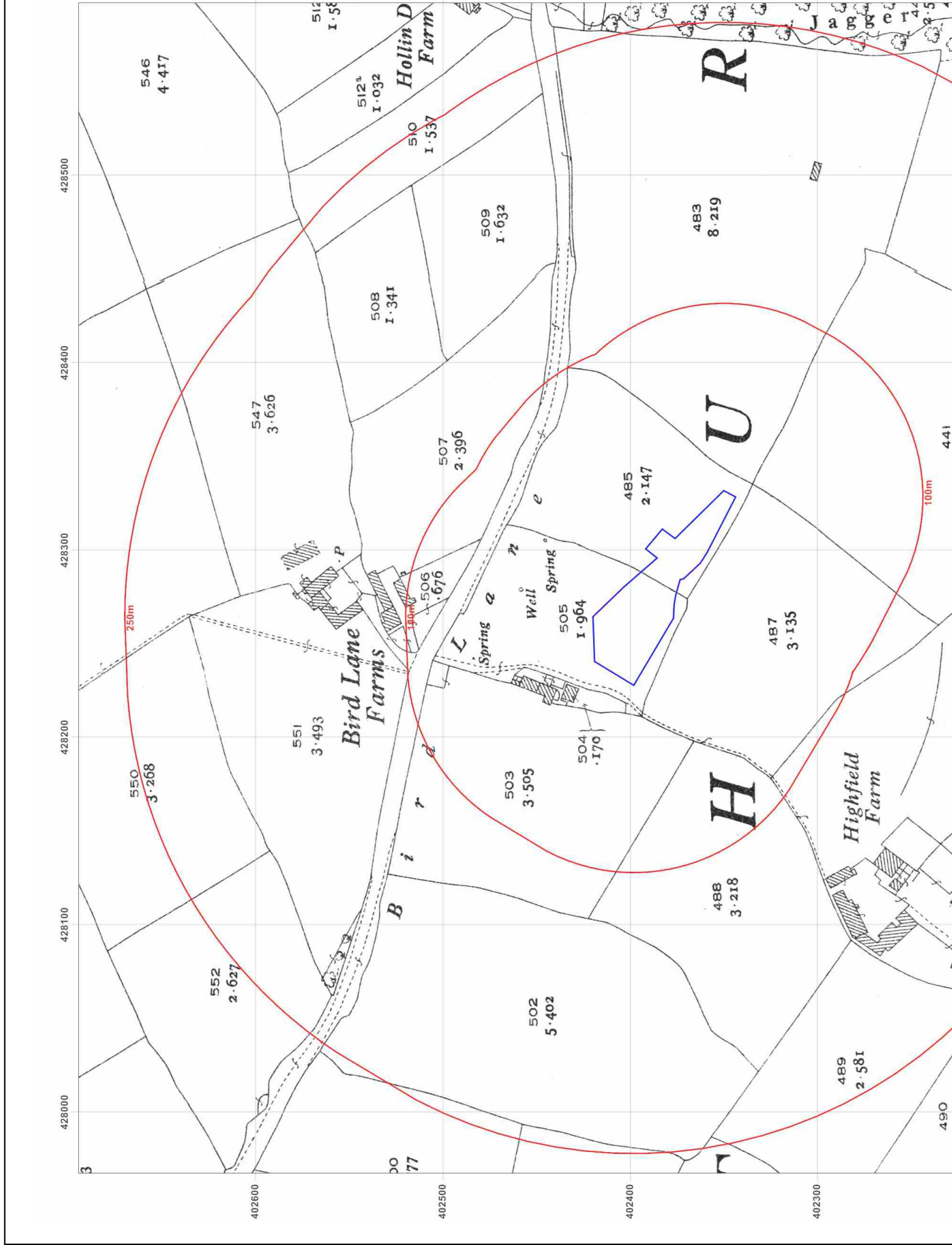


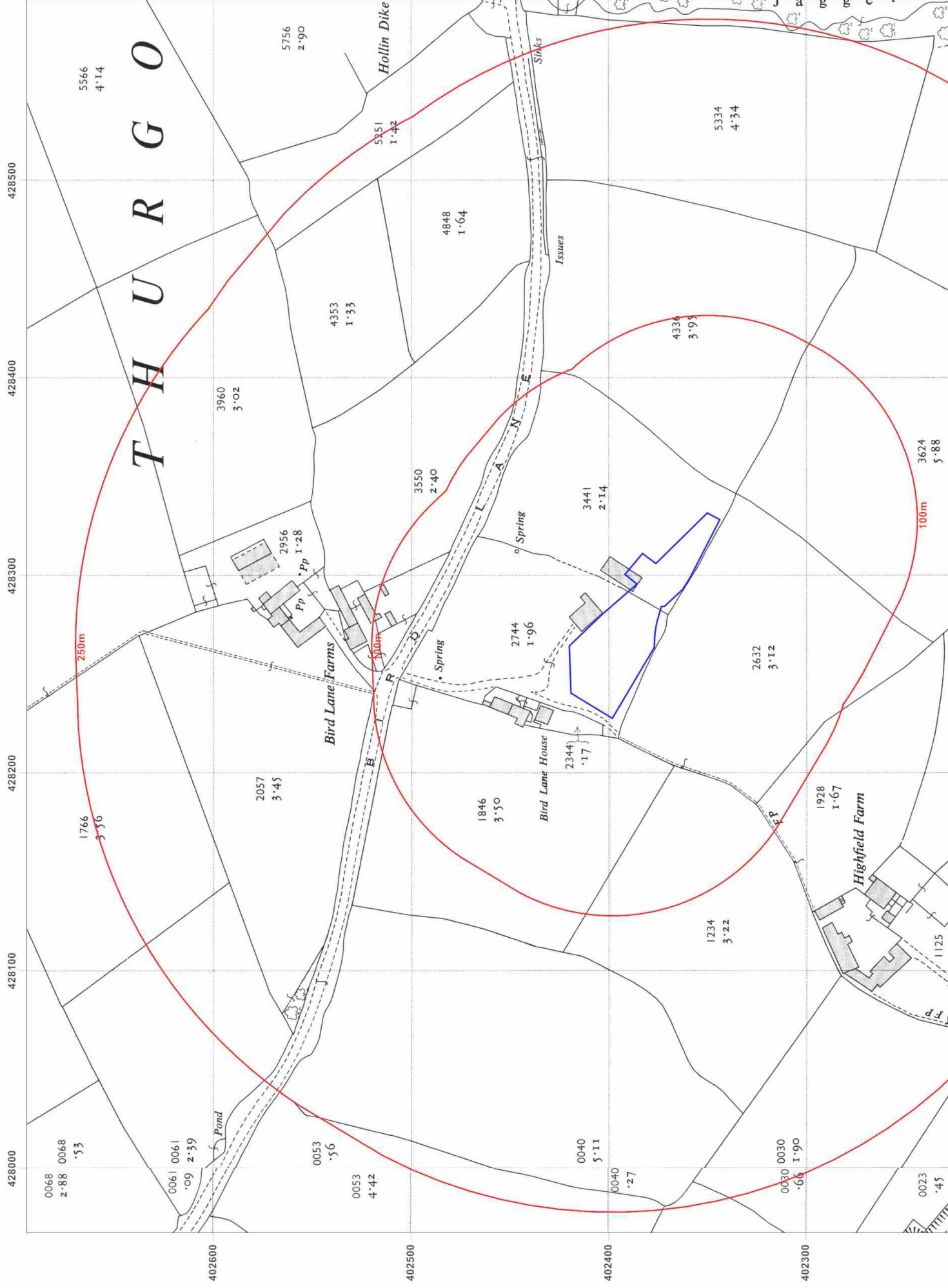




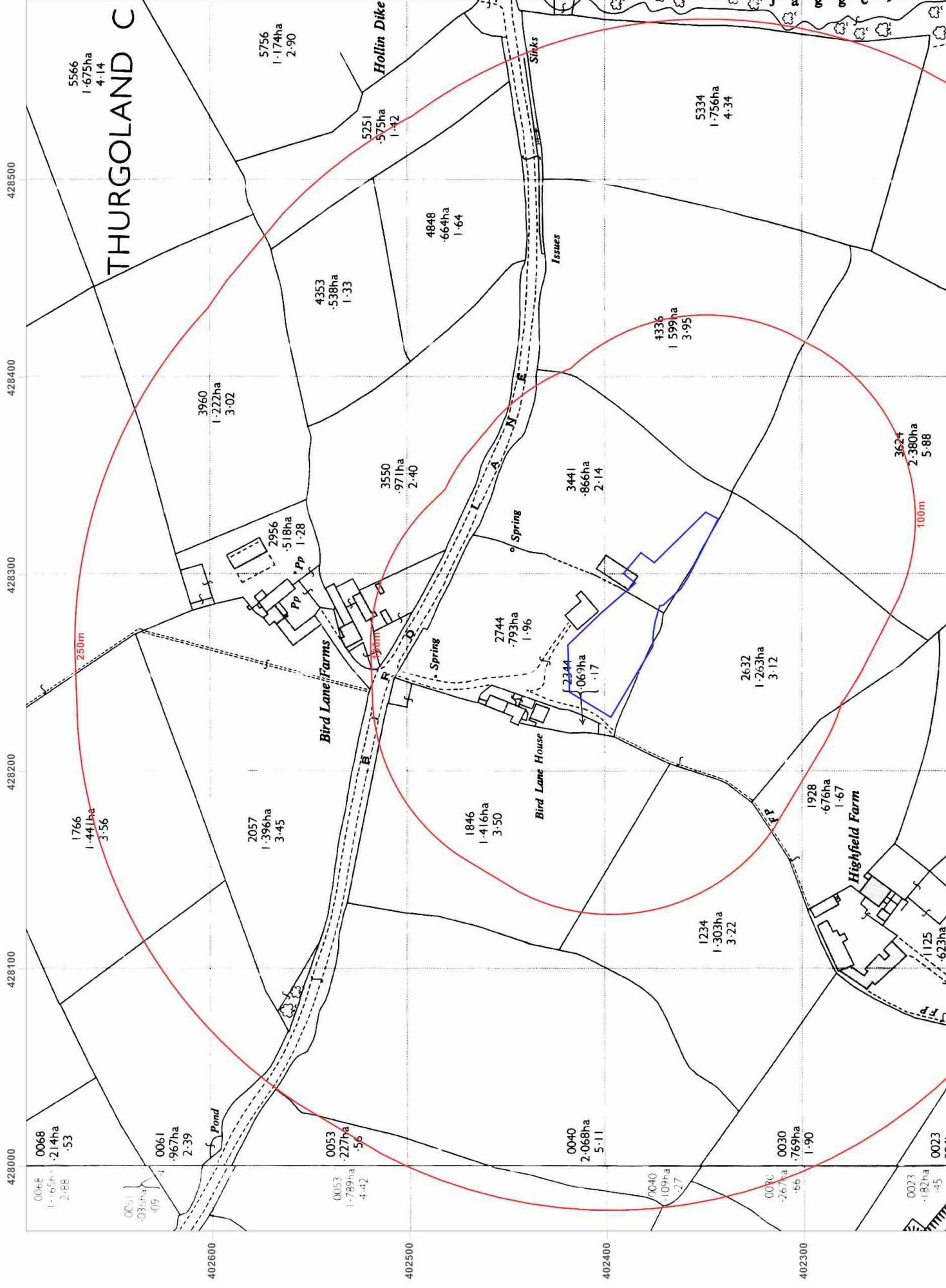


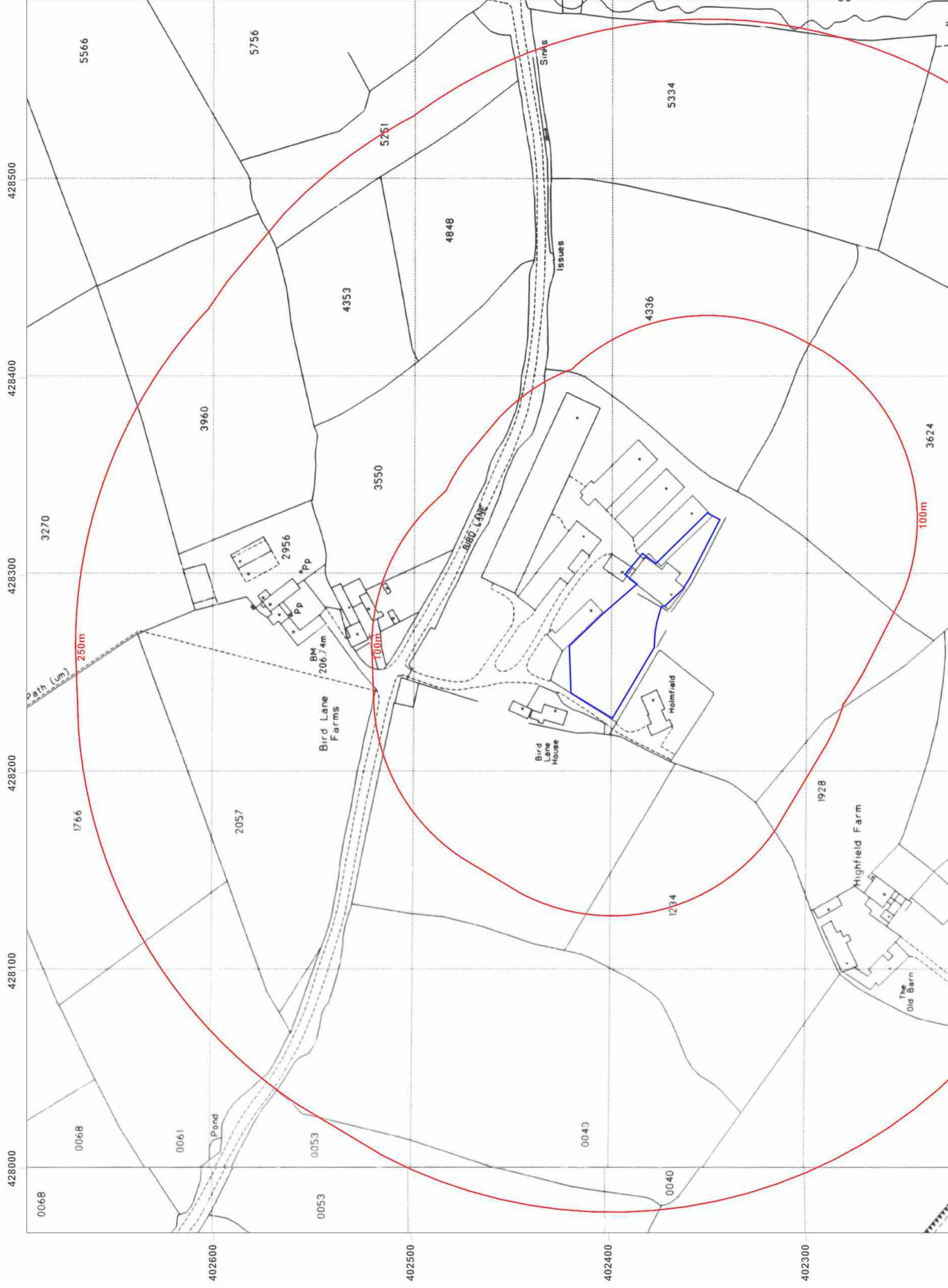






THURGOLAND C





APPENDIX C

- (i) GroundSure EnviroInsight
- (ii) GroundSure GeoInsight
- (iii) Coal Authority Report



Silkstone Environmental Ltd

THORNCLIFFE HALL ANNEXE SILKSTONE
ENVIRONMENTAL, NEWTON CHAMBERS
ROAD,
SHEFFIELD/CHAPELTOWN, S35 2PH

Groundsure
Reference:

GS-5319349

Your Reference: 18167

Report Date 13 Aug 2018

Report Delivery Method: Email - pdf

Enviro Insight

Address: BIRD LANE HOUSE, BIRD LANE, THURGOLAND, BARNSELY, S36 8YD

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

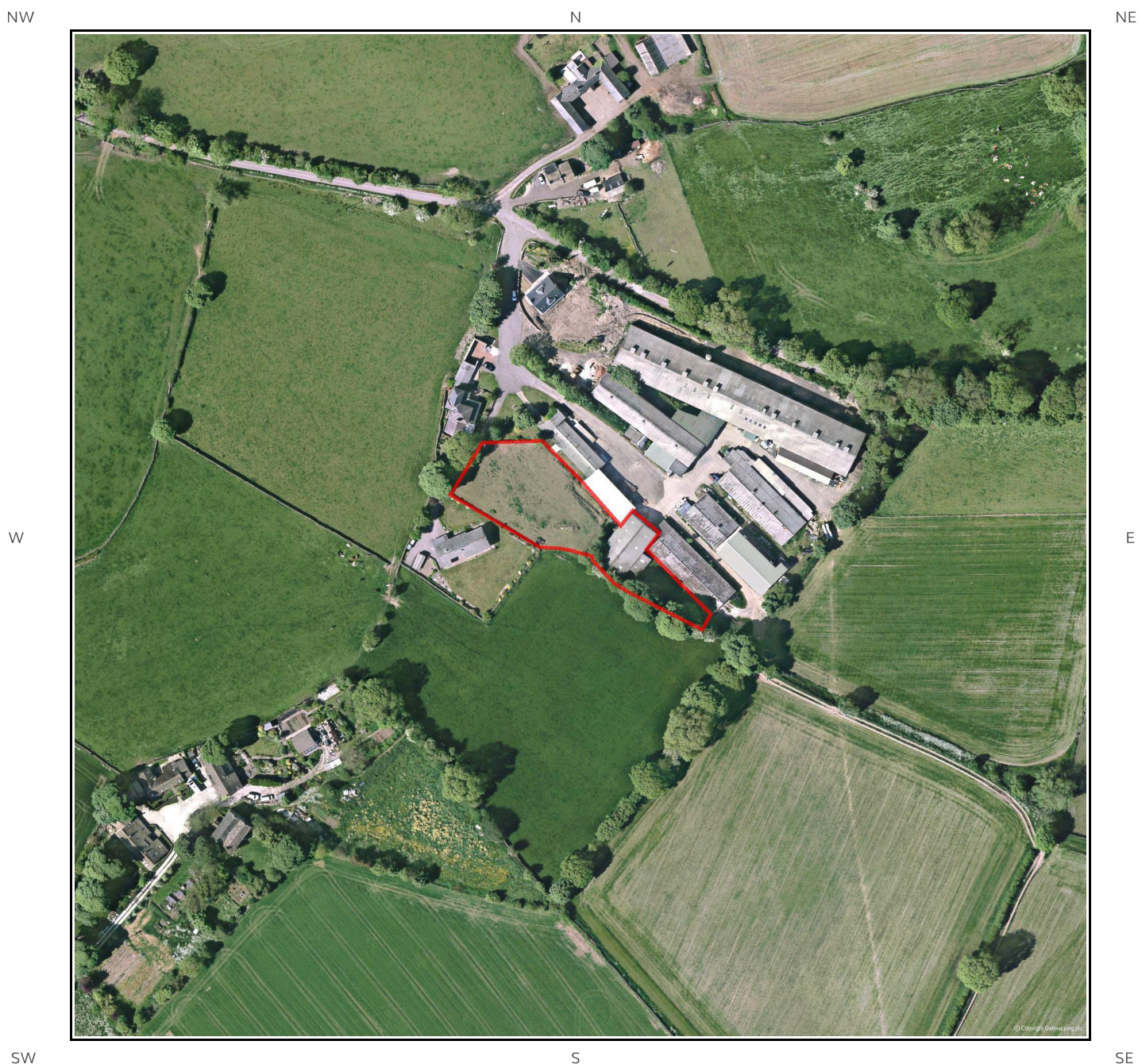
If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Address: BIRD LANE HOUSE, BIRD LANE, THURGOLAND, BARNSLEY, S36 8YD
Date: 13 Aug 2018
Reference: GS-5319349
Client: Silkstone Environmental Ltd



Aerial Photograph Capture date: 07-Jun-2013
Grid Reference: 428298,402377
Site Size: 0.27ha

Report Reference: GS-5319349
Client Reference: 18167

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	0	0	11
1.2 Additional Information – Historical Tank Database	0	0	0	0
1.3 Additional Information – Historical Energy Features Database	0	0	0	0
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	0	11
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	3
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	2	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	None identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	None identified					
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	4
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	#250GWV #	#500GWV #	Not searched	Not searched

Section 6: Hydrogeology and Hydrology	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	Yes	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	4	4	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding						
7.1 Environment Agency Zone 2 floodplains within 250m of the study site	None identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	None identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Limited potential					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Low					

Section 8: Designated Environmentally Sensitive Sites						
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	3	17
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	1
8.14 Records of Green Belt land	1	0	0	0	0	1

Section 9: Natural Hazards	
9.1 Maximum risk of natural ground subsidence	Very Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Very Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining	
10.1 Coal mining areas within 75m of the study site	Identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	Identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

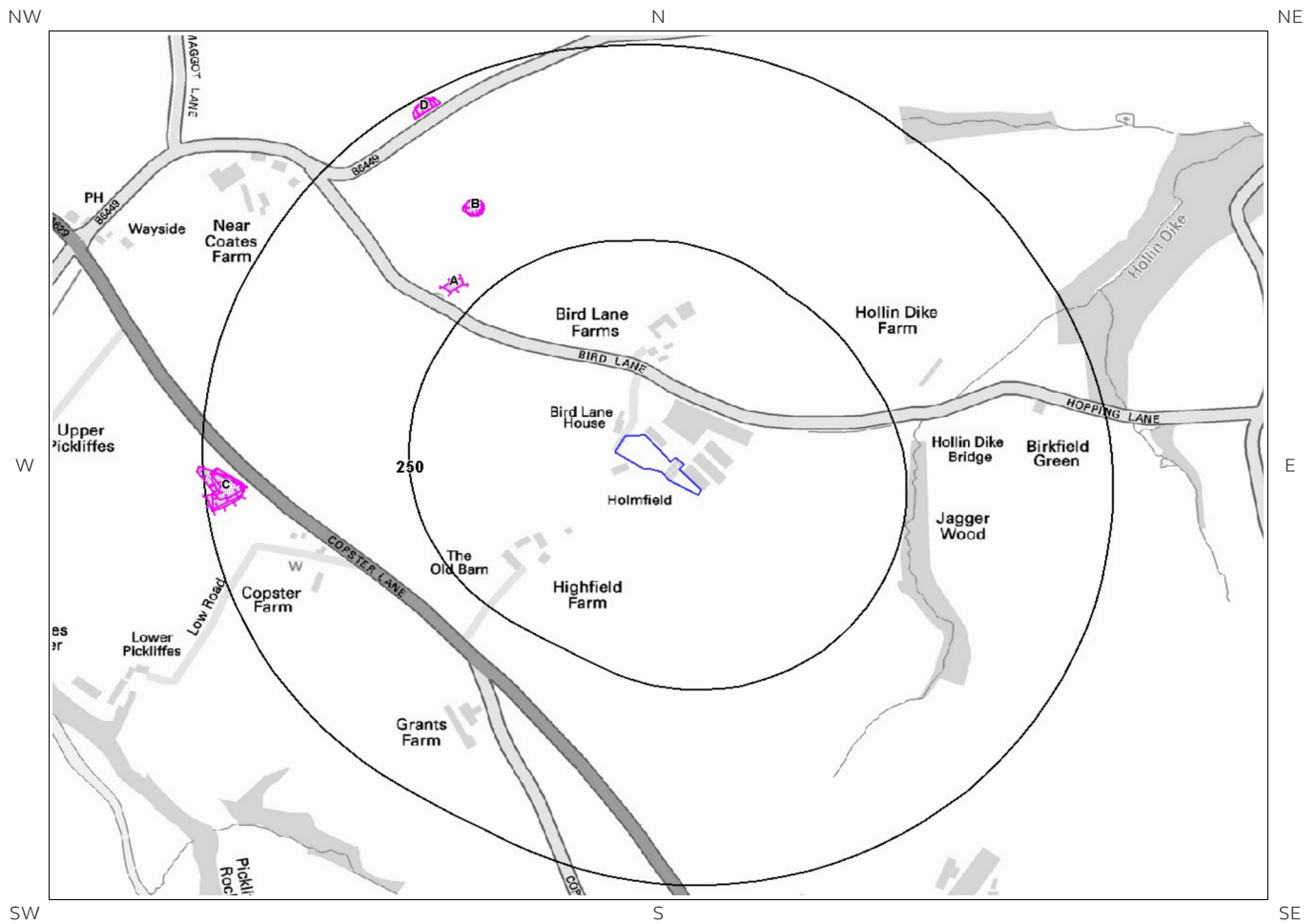
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

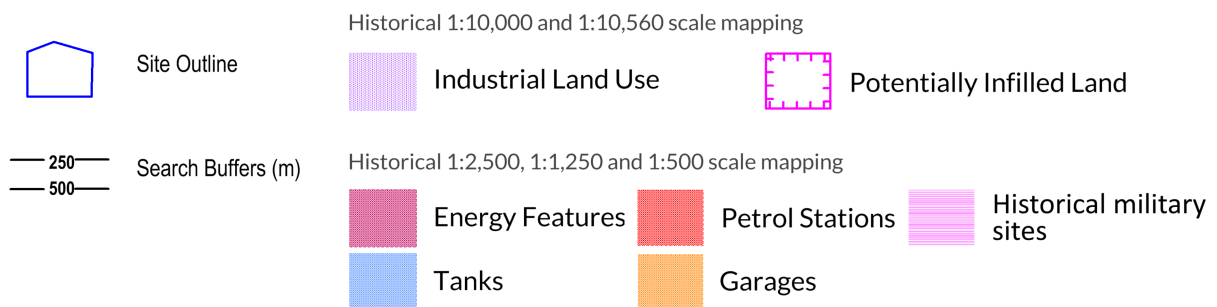
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 11

ID	Distance [m]	Direction	Use	Date
1A	276	NW	Unspecified Heap	1891
2A	276	NW	Unspecified Heap	1903
3B	334	NW	Unspecified Pit	1951
4B	336	NW	Unspecified Pit	1903
5B	336	NW	Unspecified Pit	1932
6C	452	W	Unspecified Pit	1951
7C	453	W	Unspecified Pit	1903
8C	453	W	Unspecified Quarry	1891
9C	454	W	Unspecified Pit	1932
10D	479	NW	Unspecified Quarry	1932
11D	481	NW	Unspecified Quarry	1951

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 0

Database searched and no data found.

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 0

Database searched and no data found.

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 11

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

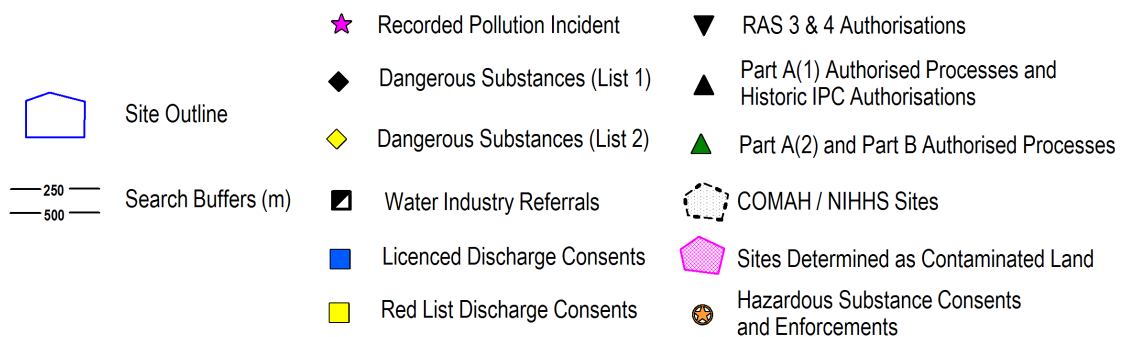
ID	Distance(m)	Direction	Use	Date
12A	276	NW	Unspecified Heap	1891
13A	276	NW	Unspecified Heap	1903
14B	334	NW	Unspecified Pit	1951
15B	336	NW	Unspecified Pit	1932
16B	336	NW	Unspecified Pit	1903
17C	452	W	Unspecified Pit	1951
18C	453	W	Unspecified Quarry	1891
19C	453	W	Unspecified Pit	1903
20C	454	W	Unspecified Pit	1932

21D	479	NW	Unspecified Quarry	1932
22D	481	NW	Unspecified Quarry	1951

2. Environmental Permits, Incidents and Registers Map



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2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

0

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

0

Database searched and no data found.

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

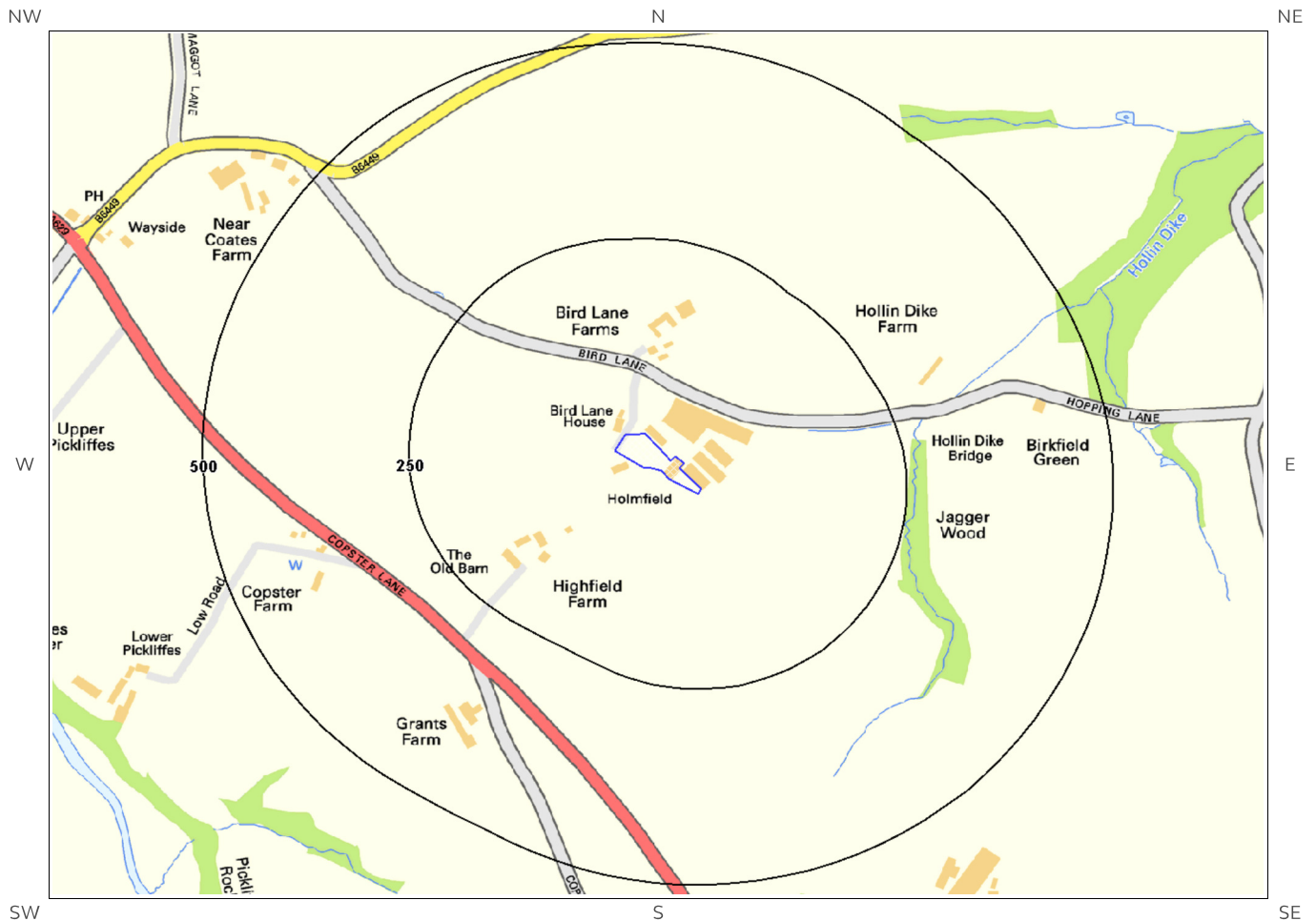
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site

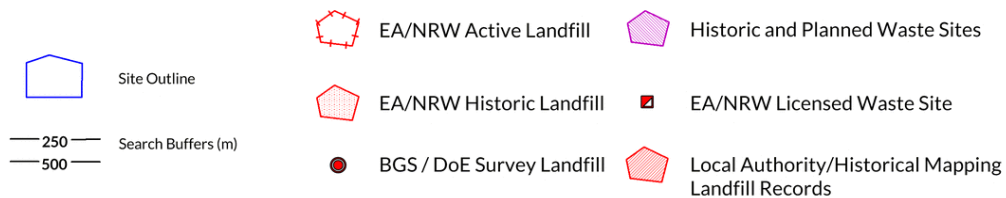
0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

3

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
Not shown	1026	W		Site Address: Bower Hill, Oxspring Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Mr Walsh Licence Holder: Mr Walsh First Recorded: 31-Dec-1966 Last Recorded: 31-Dec-1996
Not shown	1218	SW		Site Address: Oxspring Recreation Ground, Sheffield Road, Oxspring, Sheffield Waste Licence: Yes Site Reference: B389, 4400/B389, 20B389(85), WD20 B389 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 05-Aug-1983 Licence Surrendered: 17-May-1988 Licence Holder Address: c/o Mrs S Morton, Clerk, 48 Mayfield, Oxspring, Sheffield Operator: Oxspring Parish Council Licence Holder: Oxspring Parish Council First Recorded: 05-Aug-1983 Last Recorded: 17-May-1988
Not shown	1301	W		Site Address: Land north of Sheffield Road, Bower Hill, Oxspring Waste Licence: - Site Reference: 4400/(161) Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Stevlorra Developments Limited Licence Holder: Stevlorra First Recorded: 31-Dec-1994 Last Recorded: 31-Dec-1994

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

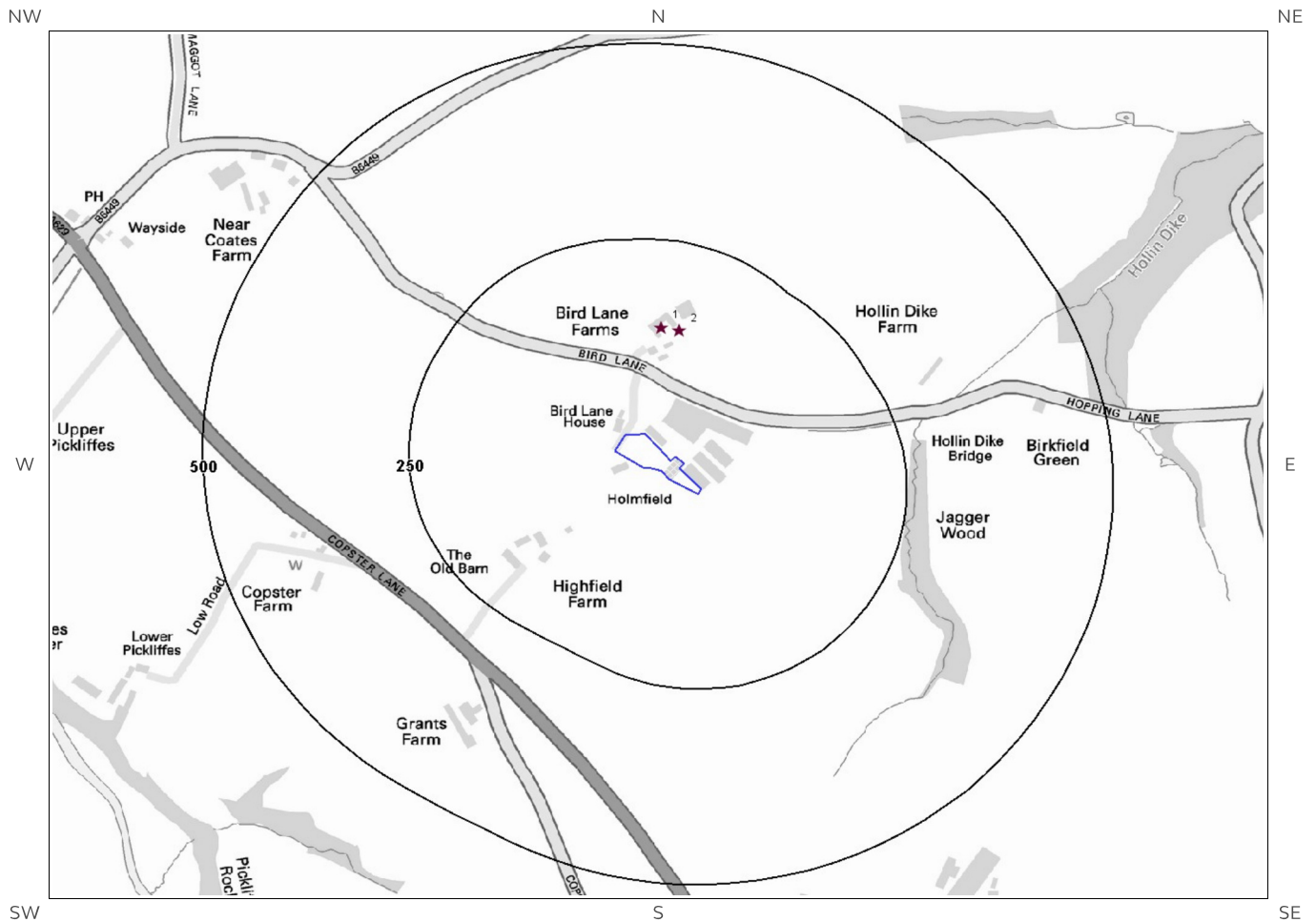
Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

0

Database searched and no data found.

4. Current Land Use Map



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4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 2

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	138	N	Pump	428283 402557	S36	Water Pumping Stations	Industrial Features
2	139	N	Pump	428305 402553	S36	Water Pumping Stations	Industrial Features

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.3 Bedrock and Solid Geology

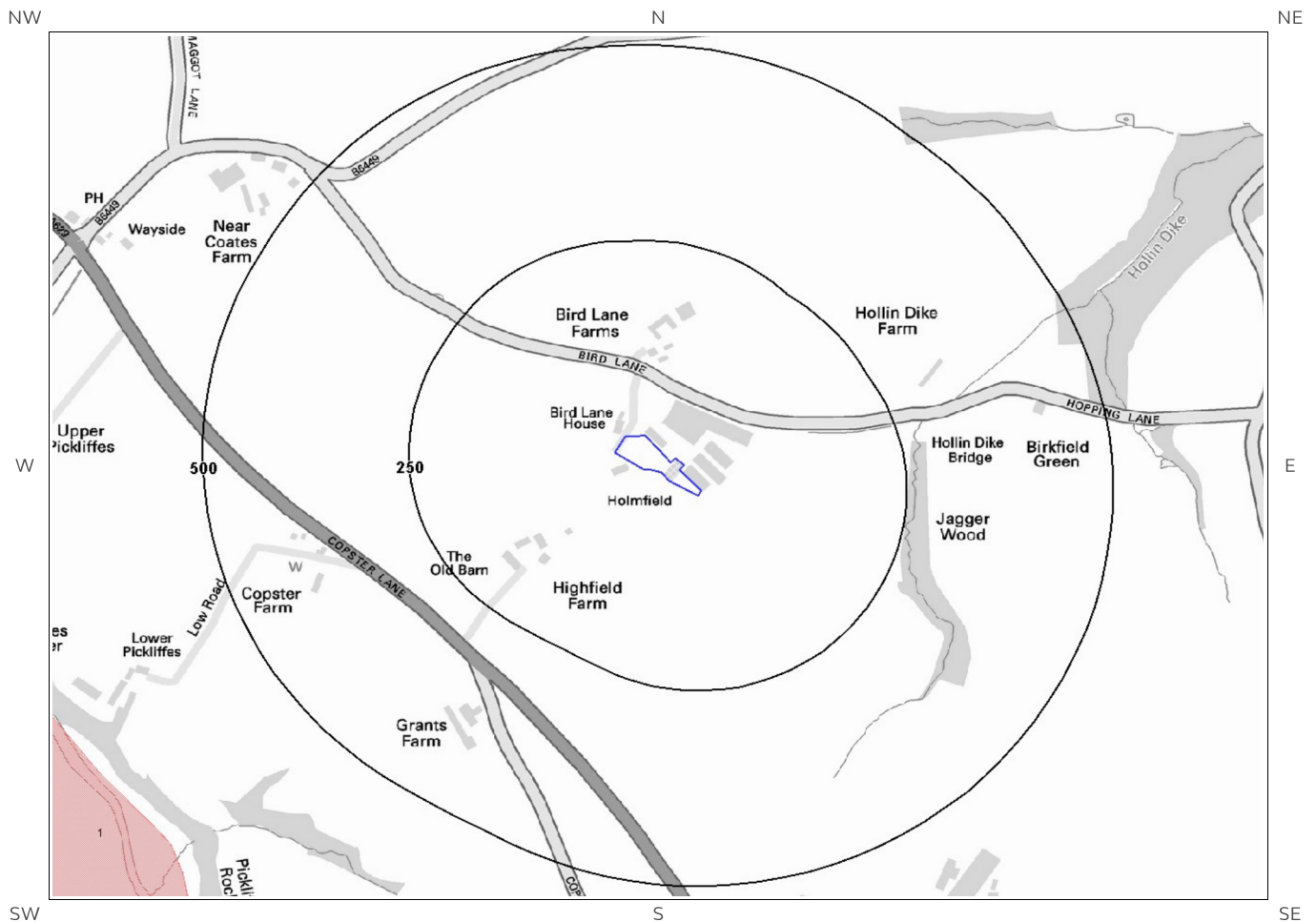
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
PF-SDST	PENISTONE FLAGS	SANDSTONE
PF-SDST	PENISTONE FLAGS	SANDSTONE

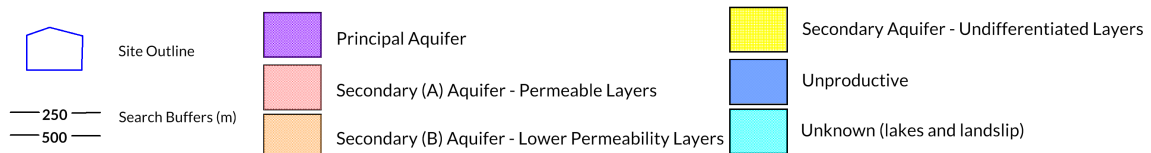
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

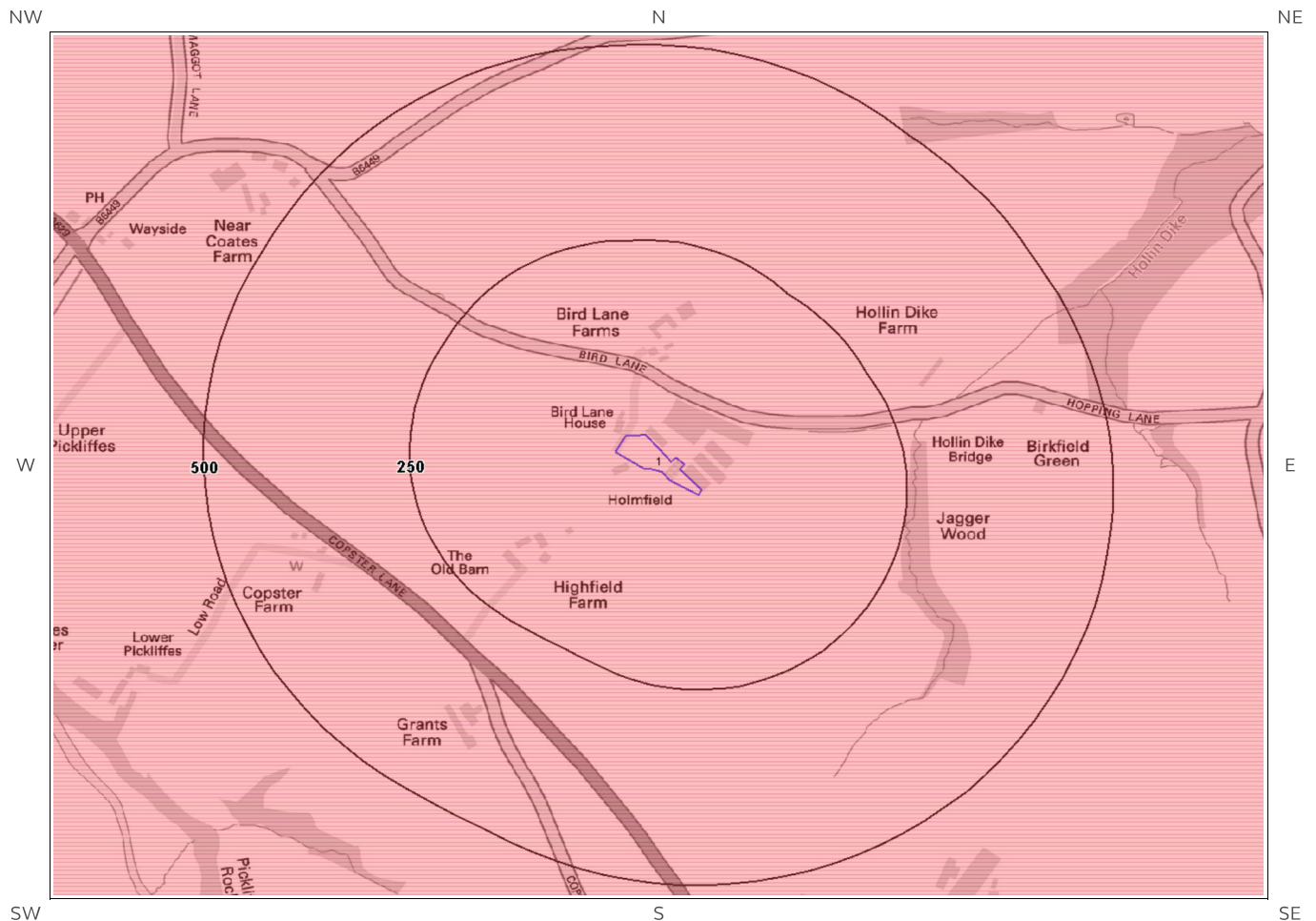
6a. Aquifer Within Superficial Geology



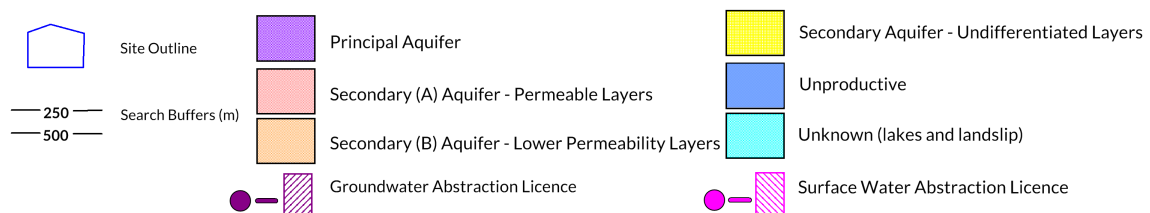
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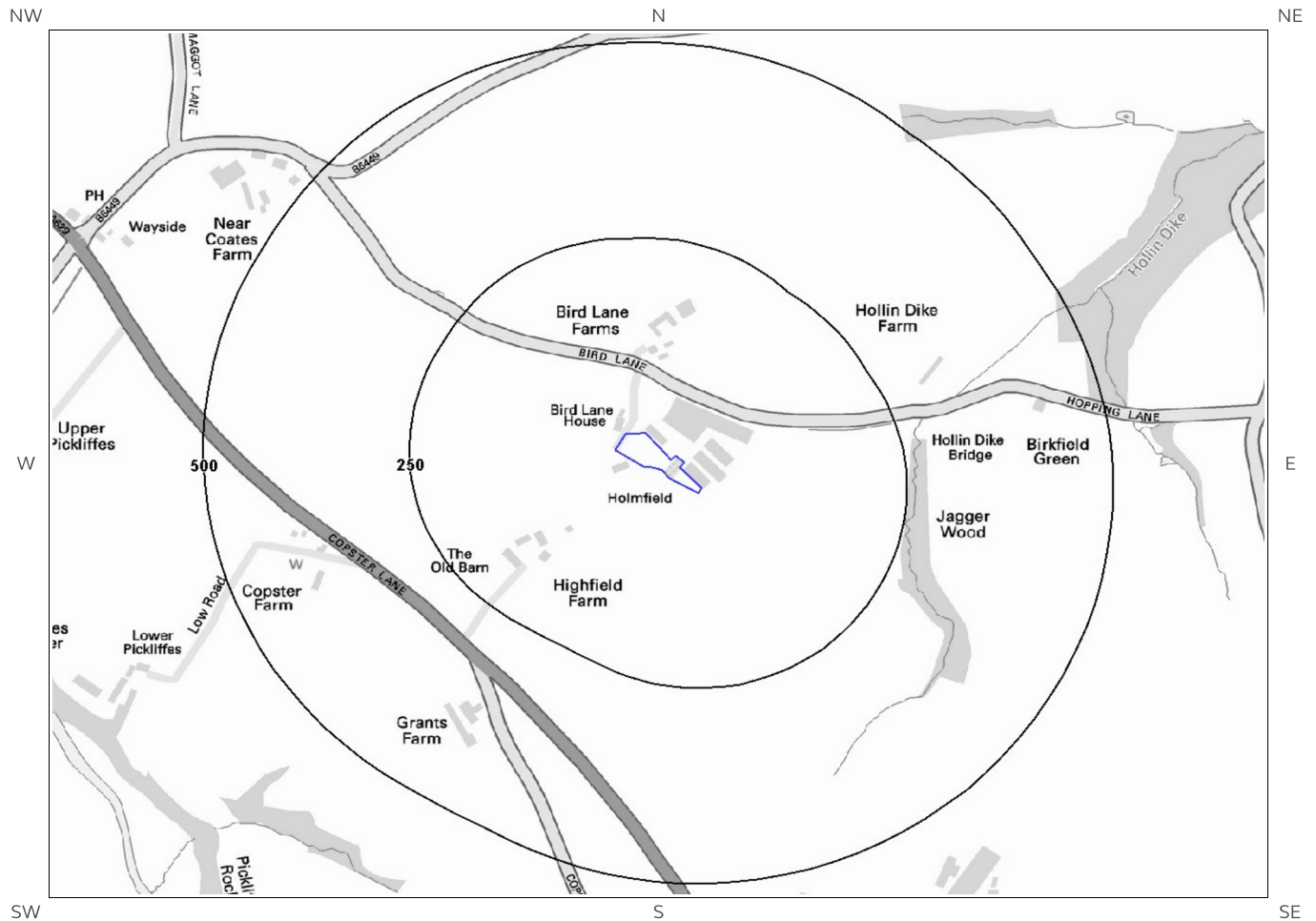
6b. Aquifer Within Bedrock Geology and Abstraction Licences



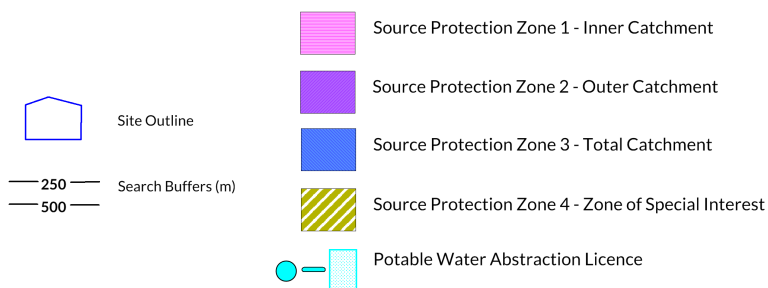
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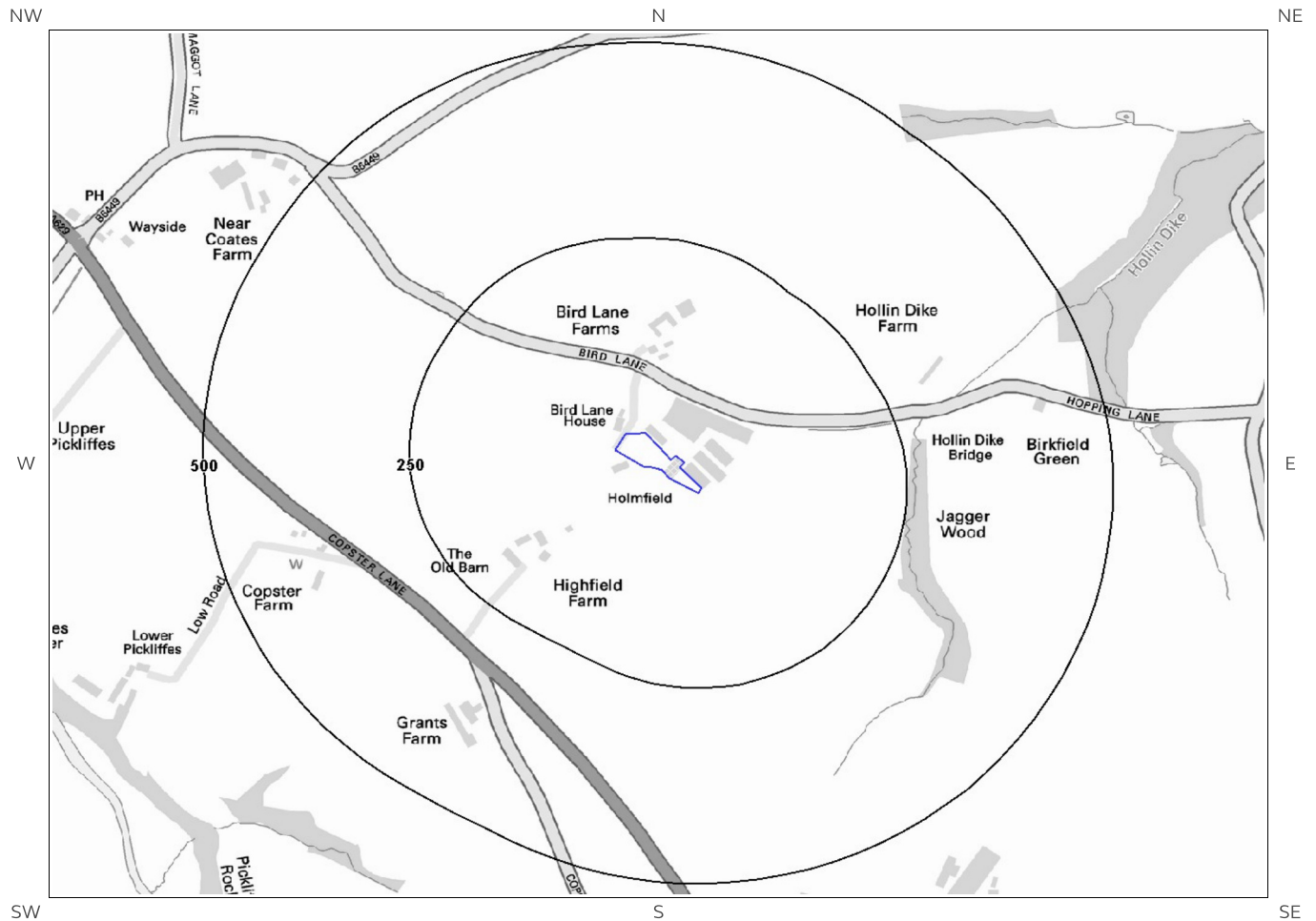
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



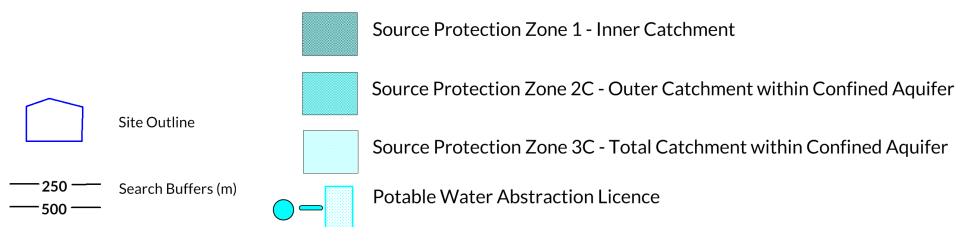
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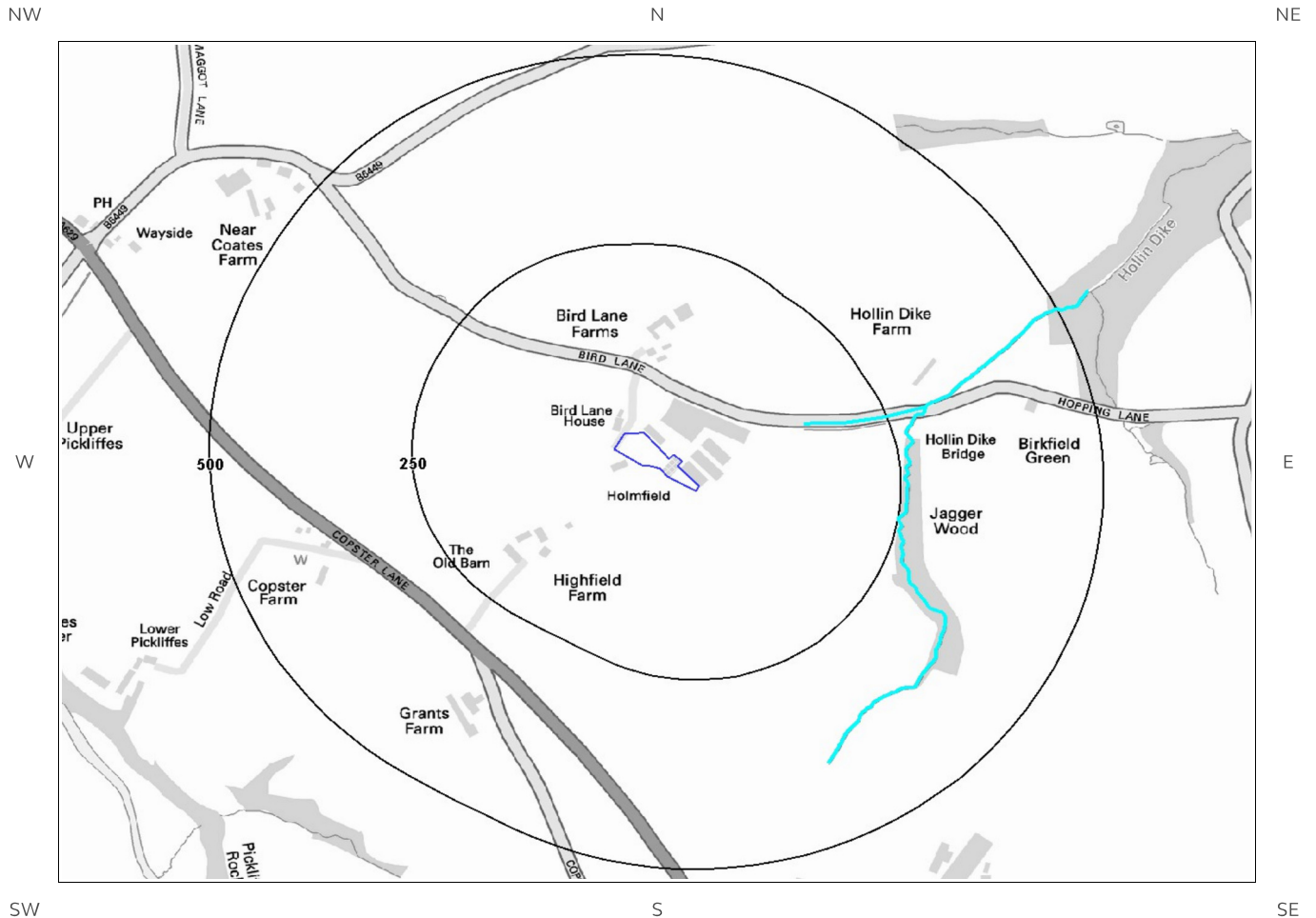
6d. Hydrogeology – Source Protection Zones within confined aquifer



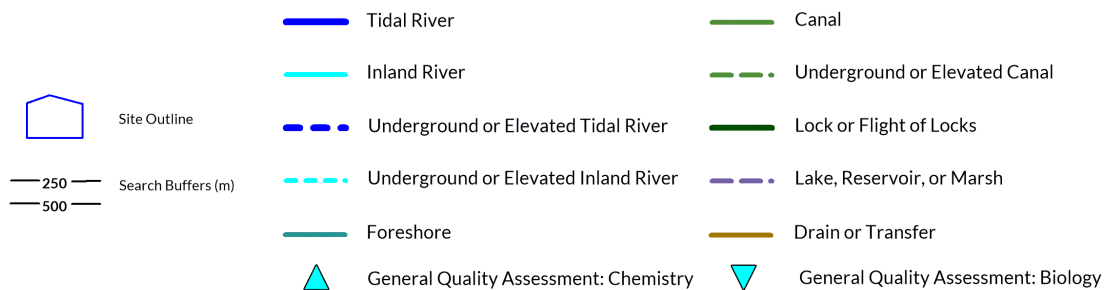
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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property No

Database searched and no data found.

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	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

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site None identified

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1770	S	427900 400626	Status: Active Licence No: 2/27/05/201/R01 Annual Volume (m ³): 10249200 Max Daily Volume (m ³): 28080

ID	Distance (m)	Direction	NGR	Details
				Details: Hydroelectric Power Generation Direct Source: Surface Water Point: River Don - The Old Mill - Thurgoland Data Type: Point Name: ROLLINSON
				Application No: NPS/WR/021584 Original Start Date: 1/4/2017 Expiry Date: 31/3/2029 Issue No: 1 Version Start Date: 1/4/2017 Version End Date:
Not shown	1778	S	427890 400620	Status: Historical Licence No: 2/27/05/201 Details: Hydroelectric Power Generation Direct Source: Surface Water Point: River Don - The Old Mill - Thurgoland Data Type: Point Name: ROLLINSON
				Annual Volume (m³): 10249200 Max Daily Volume (m³): 28080 Application No: 8268 Original Start Date: 4/9/2007 Expiry Date: 31/3/2017 Issue No: 2 Version Start Date: 5/3/2008 Version End Date:
Not shown	1951	W	426300 402700	Status: Historical Licence No: 2/27/05/104 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface Water Point: River Don Data Type: Point Name: WINTERBOTTOM (WIREDRAWERS) LTD
				Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4322 Original Start Date: 17/3/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/3/1966 Version End Date:
Not shown	1951	W	426300 402700	Status: Historical Licence No: 2/27/05/104 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface Water Point: River Don -- Pump Data Type: Point Name: WINTERBOTTOM (WIREDRAWERS) LTD
				Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4322 Original Start Date: 17/3/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/3/1966 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	H3	Coarse textured or moderately shallow soils which readily transmit non-adsorbed pollutants and liquid discharges but have some ability to attenuate adsorbed pollutants because of their clay or organic matter content.
110	E	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAH). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	974	W	427300 402100	River Name: River Don Reach: Cubley Brook Cheesebottom Stw End/Start of Stretch: Sample Point NGR	A	A	A	A	A
Not shown	1313	S	428063 401058	River Name: River Don Reach: Cheesebottom Stw Little Don River End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	1313	S	428063 401058	River Name: River Don Reach: Cubley Brook Cheesebottom Stw End/Start of Stretch: End of Stretch NGR	A	A	A	A	A

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/Direction	Name	Type of Watercourse	Additional Details
1	154 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
4	154 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
2	246 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: Not provided Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
5	246 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: Not provided Permanence: Unclassified.

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
3	251 E	Hollin Dike Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
6	251 E	Hollin Dike Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
4	300 E	Hollin Dike Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
7	300 E	Hollin Dike Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided

6.11 Surface Water Features

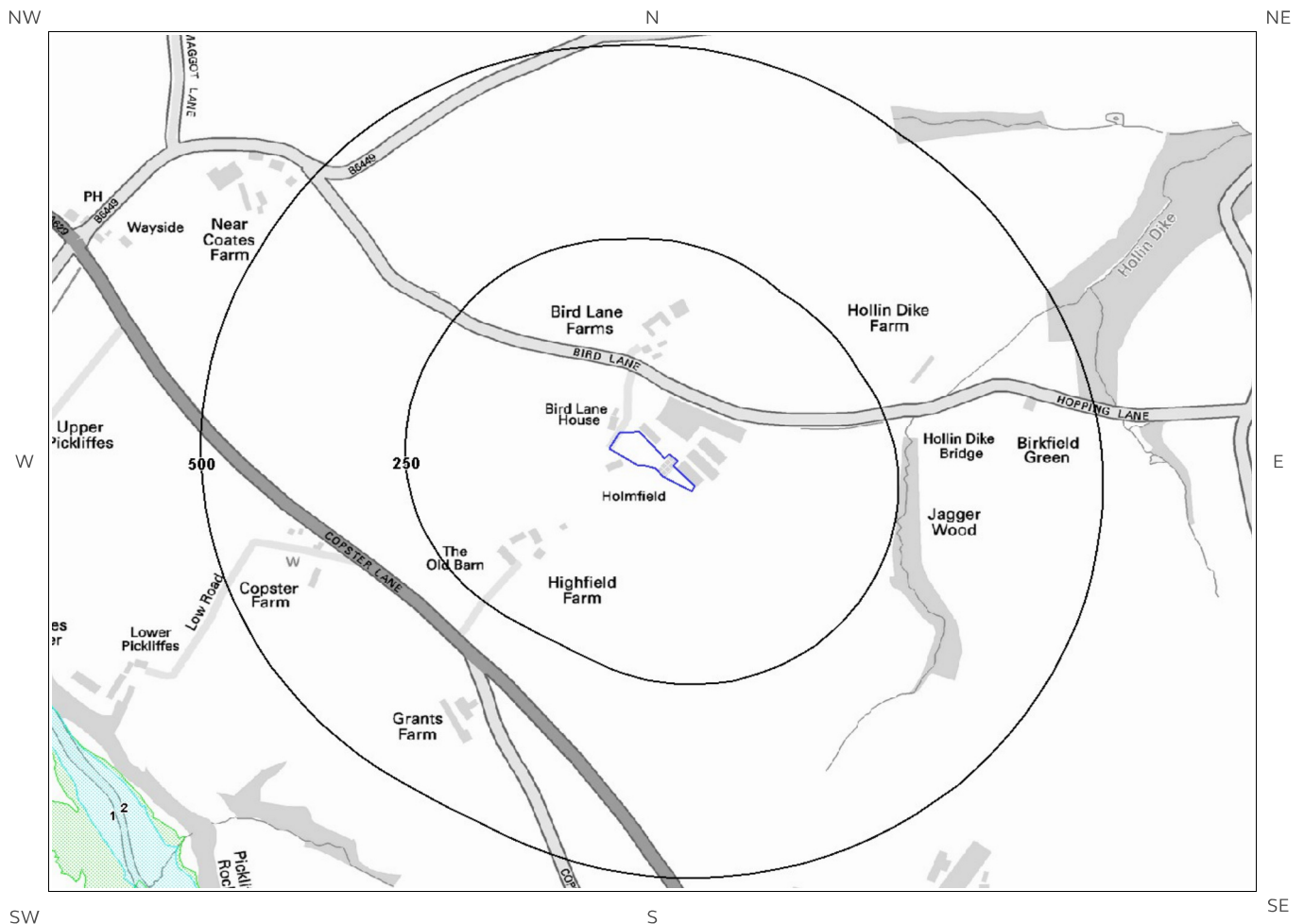
Surface water features within 250m of the study site

Identified

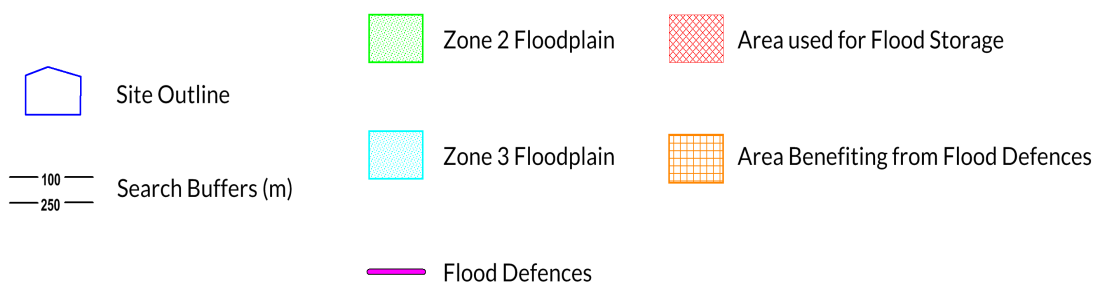
The following surface water records are not represented on mapping:

Distance (m)	Direction
154	NE

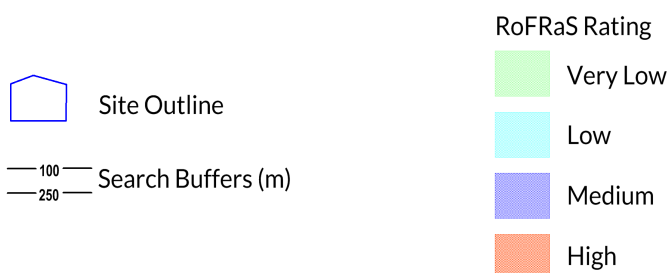
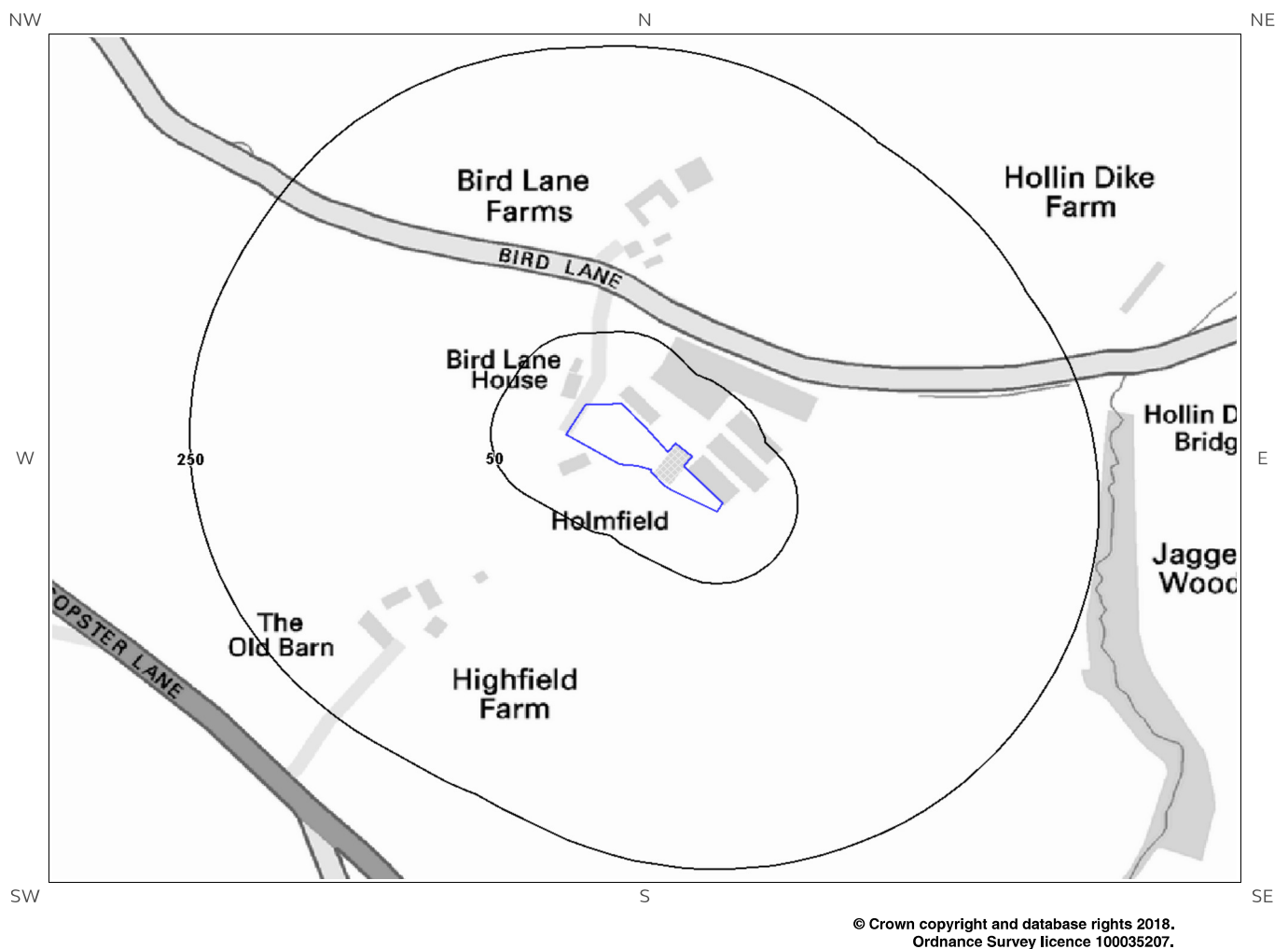
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m None identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Flood Defences within 250m of the study site None identified
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site

Identified

Clearwater Flooding or Superficial Deposits Flooding

Clearwater Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Limited potential

Where limited potential for groundwater flooding to occur is indicated, this means that although given the geological conditions there may be a groundwater flooding hazard, unless other relevant information, e.g. records of previous flooding, suggests groundwater flooding has occurred before in this area, you need take no further action in relation to groundwater flooding hazard.

7.8 Groundwater Flooding Confidence Areas

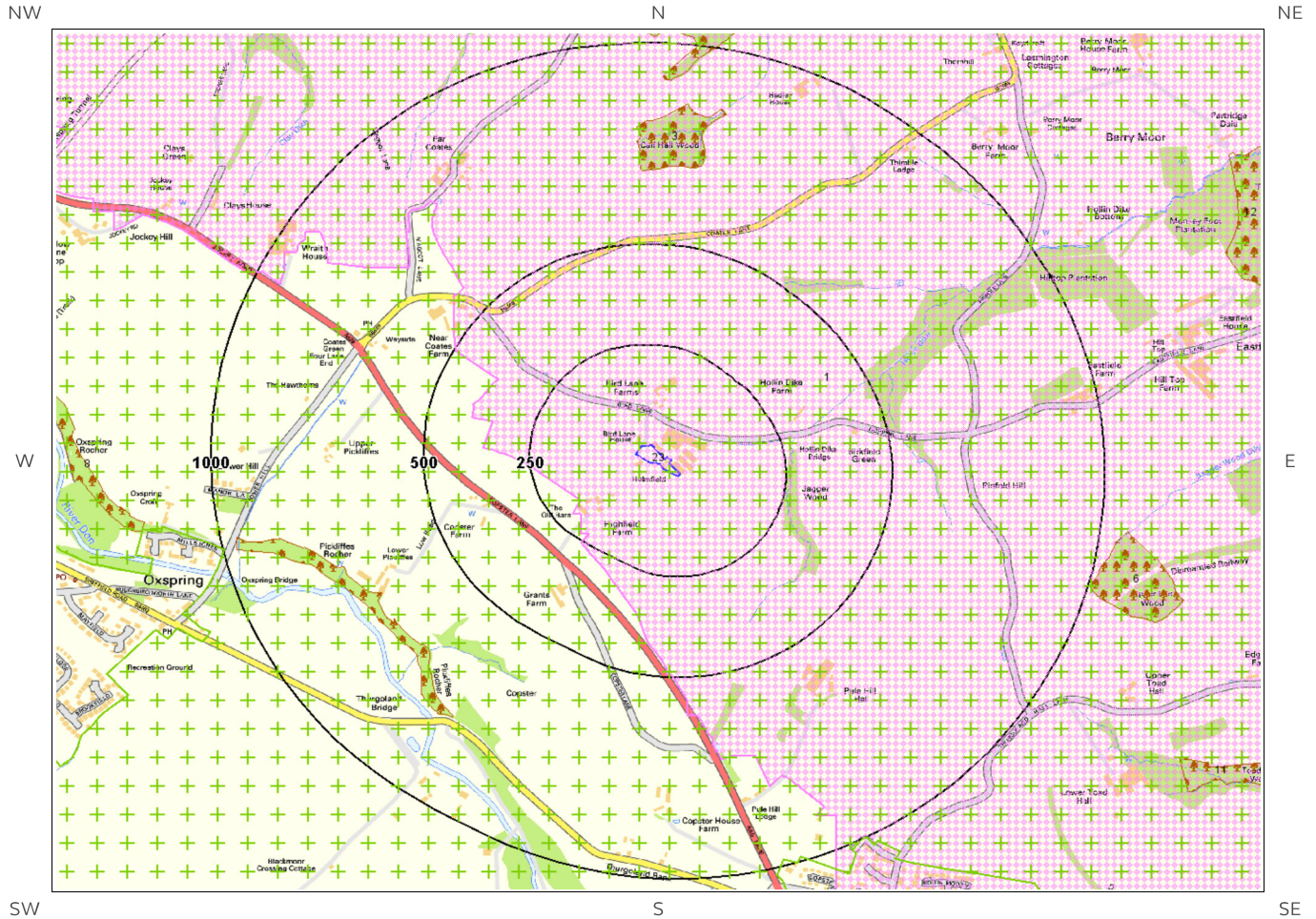
British Geological Survey confidence rating in this result

Low

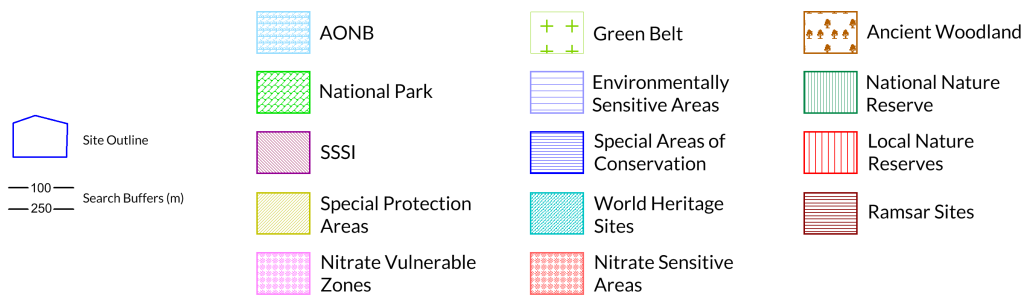
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site	Identified
---	------------

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

20

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
3	683	N	UNKNOWN	Ancient and Semi-Natural Woodland
4	686	SW	UNKNOWN	Ancient and Semi-Natural Woodland
5	909	N	UNKNOWN	Ancient Replanted Woodland
6	1004	E	UNKNOWN	Ancient Replanted Woodland
Not shown	1157	NW	UNKNOWN	Ancient and Semi-Natural Woodland
8	1169	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1246	N	UNKNOWN	Ancient Replanted Woodland
Not shown	1299	N	UNKNOWN	Ancient and Semi-Natural Woodland
11	1369	SE	UNKNOWN	Ancient and Semi-Natural Woodland
12	1396	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1419	E	UNKNOWN	Ancient Replanted Woodland
Not shown	1671	E	UNKNOWN	Ancient Replanted Woodland
Not shown	1735	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1760	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1775	SE	UNKNOWN	Ancient Replanted Woodland
Not shown	1787	E	UNKNOWN	Ancient Replanted Woodland
Not shown	1833	NE	UNKNOWN	Ancient Replanted Woodland
Not shown	1847	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1929	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1944	NW	UNKNOWN	Ancient Replanted Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

2

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0	On Site	Existing	DEFRA
Not shown	1669	E	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

2

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
23	0	On Site	Liverpool, Manchester and West Yorks Greenbelt	Barnsley District (B)
Not shown	1669	E	Liverpool, Manchester and West Yorks Greenbelt	Barnsley District (B)

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure Geo Insight**, available from our [website](#). The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell** hazard rating identified on the study site Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property no significant increase in insurance risk due to natural slope instability problems.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site

Identified

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary

Identified

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Sheffield Area	Vein Mineral/Iron ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site
Guidance: No Guidance Required.

None identified

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:

Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe

Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority

Authority: Barnsley Metropolitan Borough Council
Phone: 01226 770770
Web: <http://www.barnsley.gov.uk/>
Address: PO Box 634, Barnsley, South Yorkshir, S70 9GG

Gemapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England/Natural Resources Wales who retain the Copyright and Intellectual Property Rights for the data.

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<https://www.groundsure.com/terms-and-conditions-may25-2018>

Silkstone Environmental Ltd
THORNCLIFFE HALL ANNEXE SILKSTONE
ENVIRONMENTAL, NEWTON CHAMBERS
ROAD,
SHEFFIELD/CHAPELTOWN, S35 2PH

Groundsure Reference: GS-5319350
Your Reference: 18167
Report Date: 13 Aug 2018
Report Delivery Method: Email - pdf

Geo Insight

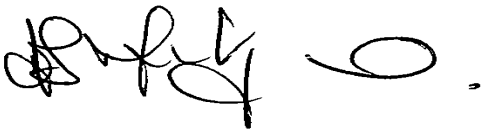
Address: BIRD LANE HOUSE, BIRD LANE, THURGOLAND, BARNSELY, S36 8YD

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
Groundsure Geo Insight

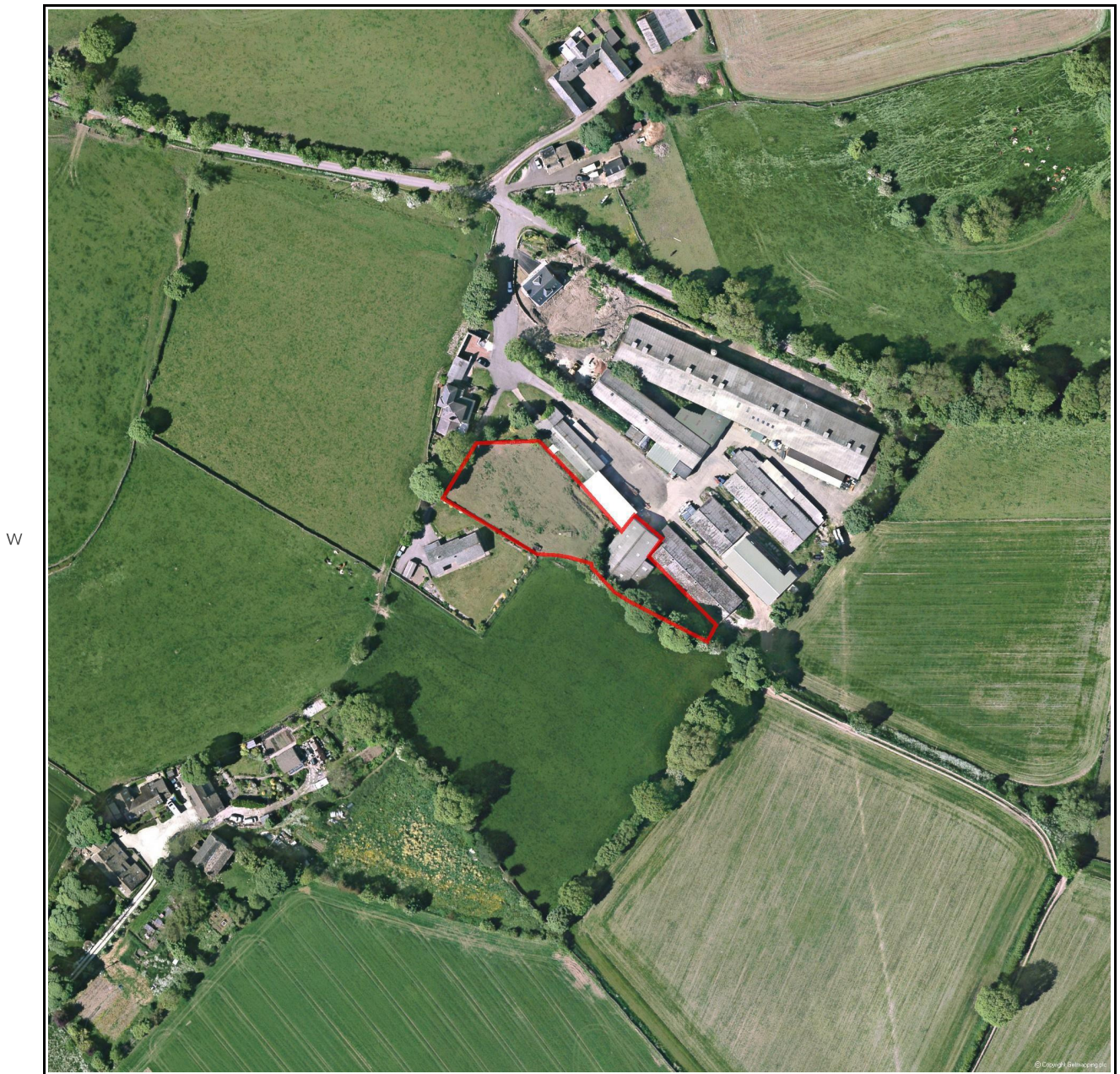
Address: BIRD LANE HOUSE, BIRD LANE, THURGOLAND, BARNSLEY, S36 8YD

Date: 13 Aug 2018

Reference: GS-5319350

Client: Silkstone Environmental Ltd

NW N NE



SW S SE

Aerial Photograph Capture date: 07-Jun-2013
Grid Reference: 428298,402377
Site Size: 0.27ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale

1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslide within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	Yes

Section 2: Geology 1:50,000 Scale

2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslide within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.

2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?

Yes

2.3.3 Are there any records of linear features within 500m of the study site boundary?

Yes

Section 3: Radon

3. Radon

3.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	0	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	3
4.3 Current Ground Workings	0	0	1	3	6

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	3
5.2 Coal Mining	1	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	1	0	0	0	0
5.5 Non-Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

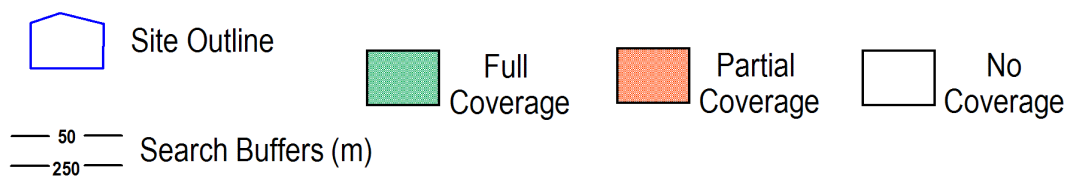
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Very Low				
6.2 Landslides	Low				
6.3 Ground Dissolution of Soluble Rocks	Negligible				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Negligible				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	0	0		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	1	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	Some deposits are mapped
N2	1669.0	Some deposits are mapped	Full	Full	Some deposits are mapped

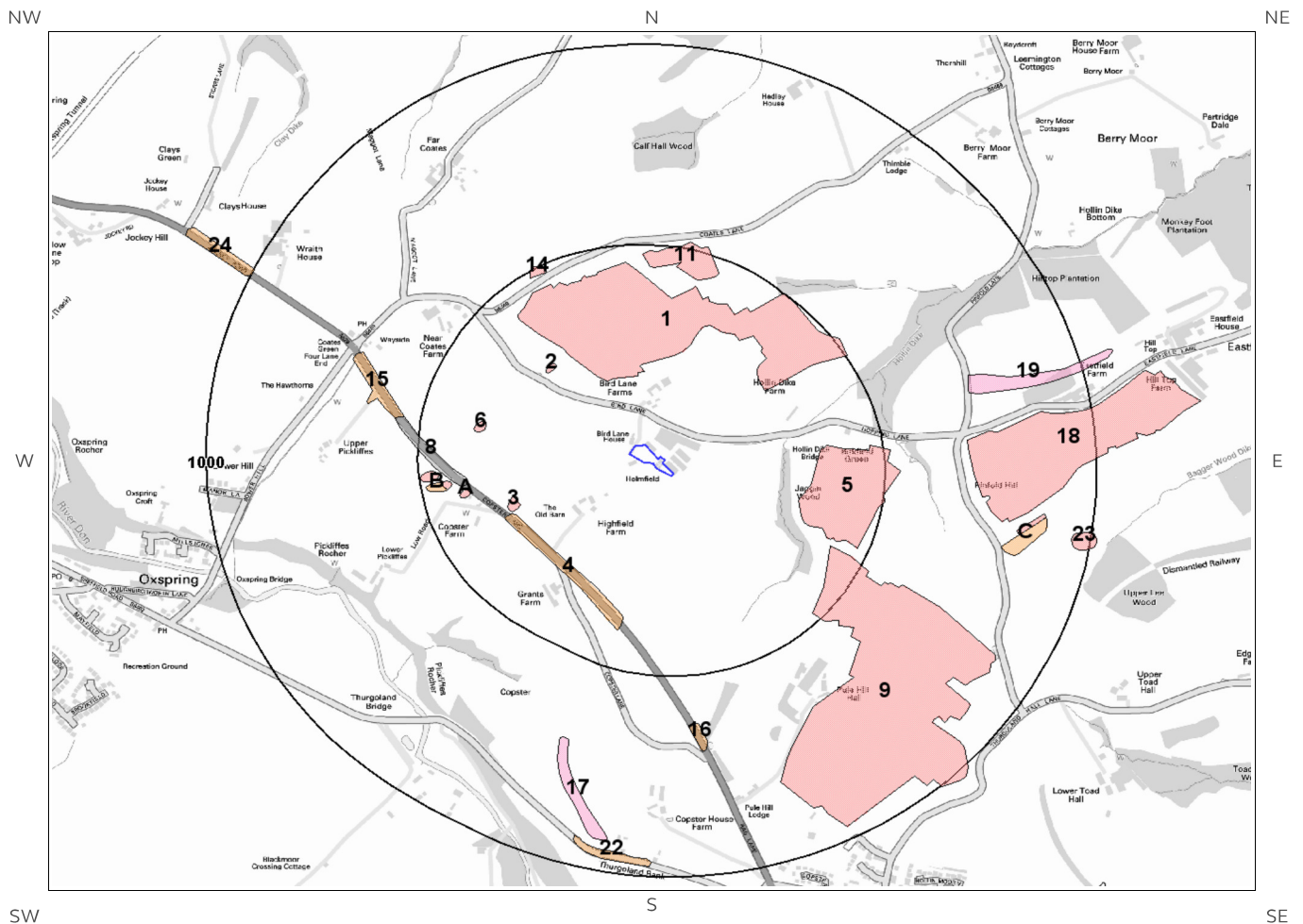
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

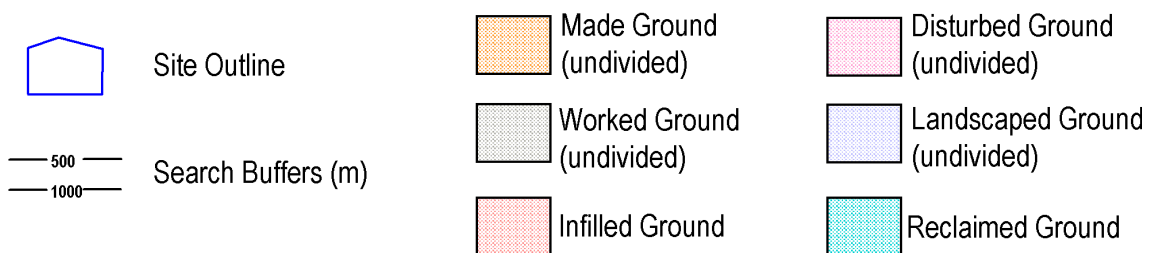
1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

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1. Geology 1:10,000 scale

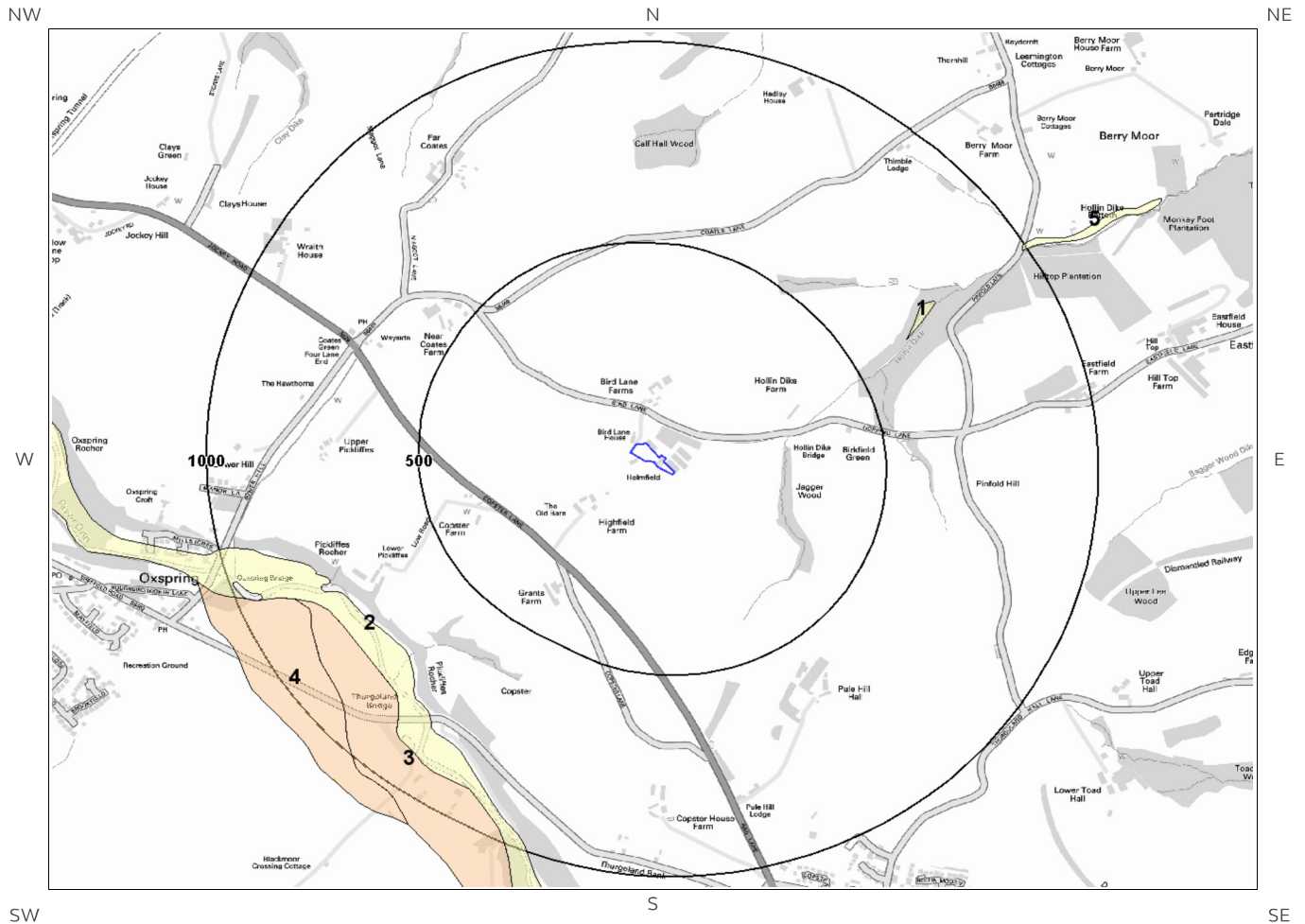
1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

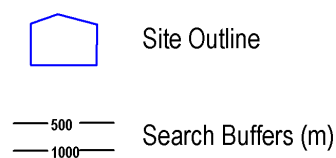
ID	Distance	Direction	LEX Code	Description	Rock Description
1	172.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
2	270.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	287.0	SW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	296.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	302.0	E	WMGR-ARTDP	Infilled Ground	Artificial Deposit
6	346.0	W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
7A	388.0	W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
8	389.0	W	WGR-VOID	Worked Ground (Undivided)	Void
9	413.0	SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
10A	426.0	W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
11	430.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
12B	438.0	W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
13B	454.0	W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
14	481.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit

1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2.2 Landslip

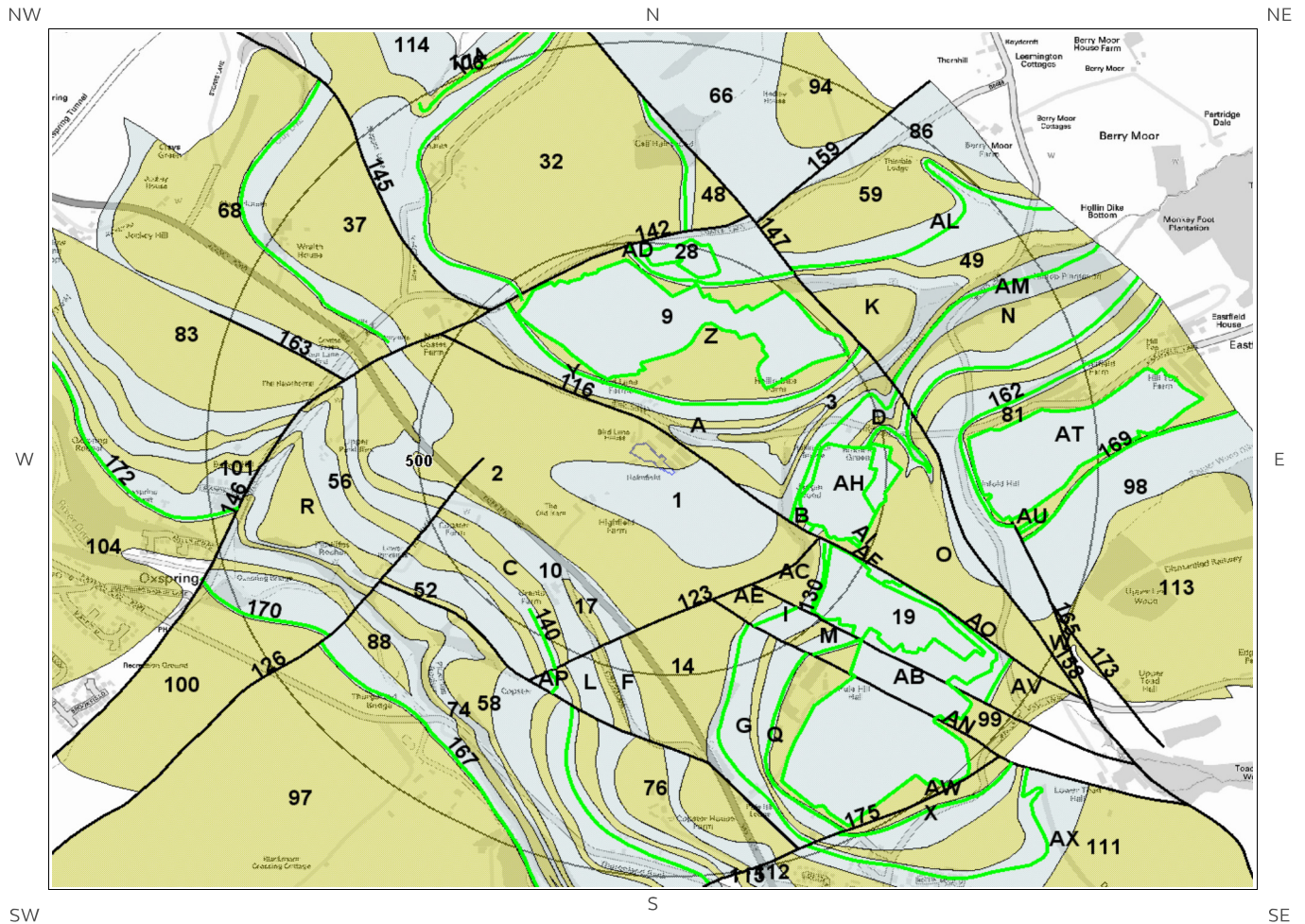
Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

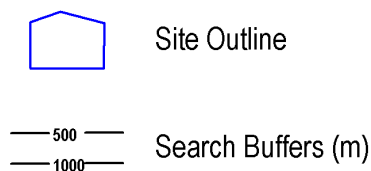
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
2	0.0	On Site	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
3	48.0	NE	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
4A	56.0	NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
5Y	82.0	N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
6Z	127.0	N	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
7A	132.0	NE	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
8AA	143.0	E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
9	172.0	N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
10	301.0	SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
11AH	302.0	E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
12B	317.0	SE	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
13AE	323.0	S	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
14	324.0	S	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
15AC	331.0	SE	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
16B	334.0	SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
17	344.0	SW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
18O	371.0	SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
19	379.0	SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
20C	381.0	SW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
21G	401.0	SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
22I	405.0	SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
23AD	406.0	N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
24D	408.0	E	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
25E	421.0	W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
26F	424.0	S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
27C	429.0	SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
28	430.0	N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
29D	439.0	E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
30E	449.0	W	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
31F	456.0	S	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
32	458.0	NW	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
33G	458.0	SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
34AG	460.0	NW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
35H	464.0	SW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
36J	469.0	W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
37	477.0	NW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
38AK	477.0	SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
39L	483.0	SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
40H	483.0	SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
41I	487.0	SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
116	48.0	NE	FAULT	Normal fault, inferred
117Y	118.0	N	ROCK	Coal seam, inferred
118B	143.0	E	FAULT	Normal fault, inferred
119Z	172.0	N	ROCK	Coal seam, observed
120AA	297.0	E	ROCK	Coal seam, inferred
121B	302.0	E	ROCK	Coal seam, observed
122AA	302.0	E	ROCK	Coal seam, observed
123	323.0	S	FAULT	Normal fault, inferred
124AN	324.0	S	FAULT	Normal fault, inferred
125AB	331.0	SE	FAULT	Normal fault, inferred
126	347.0	W	FAULT	Normal fault, inferred
127B	351.0	SE	ROCK	Coal seam, inferred

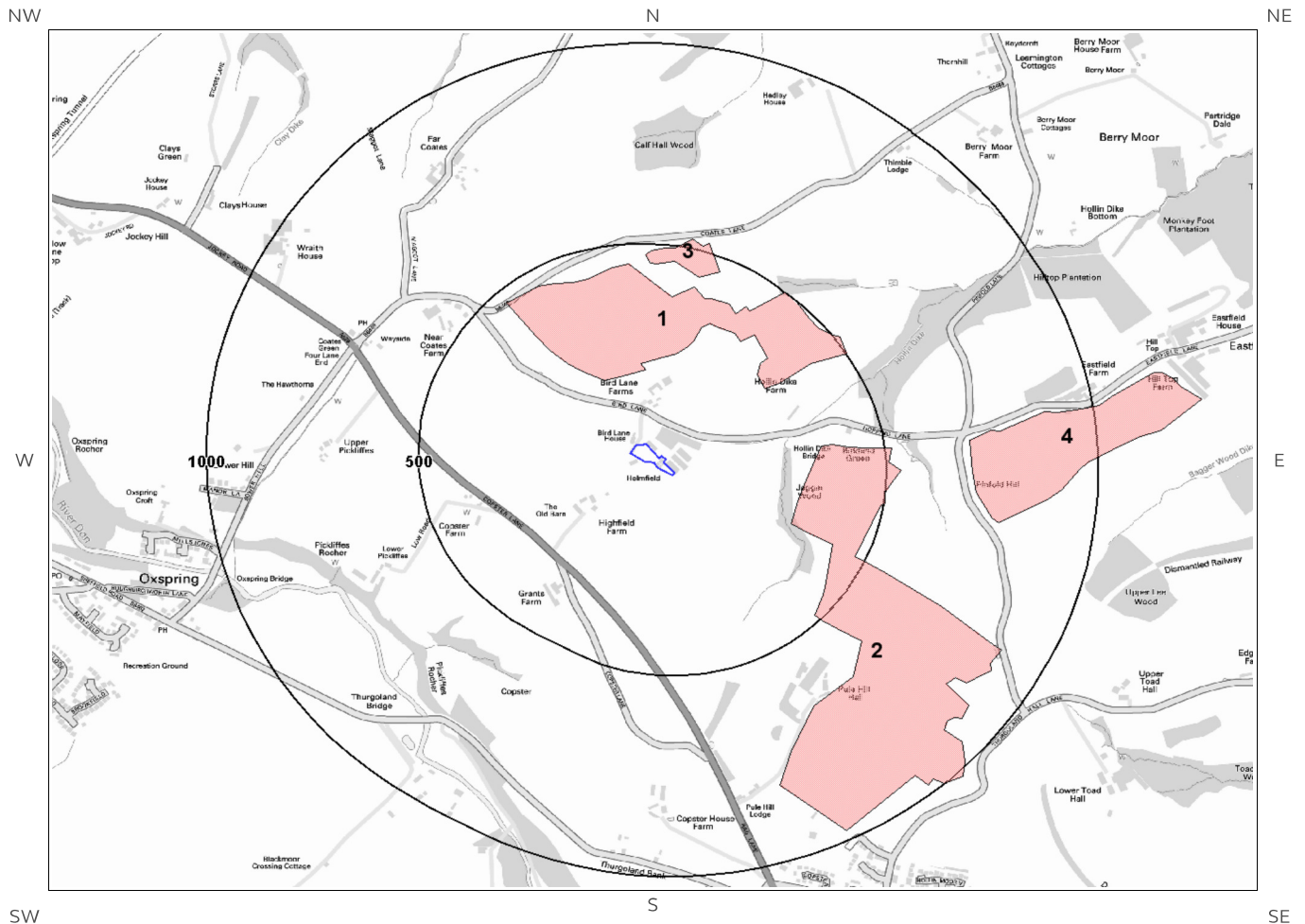
ID	Distance (m)	Direction	Category Description	Feature Description
128AC	398.0	SE	ROCK	Coal seam, inferred
129G	411.0	SE	ROCK	Coal seam, inferred
130	413.0	SE	ROCK	Coal seam, observed
131AF	413.0	SE	ROCK	Coal seam, observed
132AD	414.0	N	ROCK	Coal seam, inferred
133AO	422.0	SE	FAULT	Normal fault, inferred
134AE	422.0	SE	ROCK	Coal seam, inferred
135AD	430.0	N	ROCK	Coal seam, inferred
136AF	441.0	E	ROCK	Coal seam, observed
137AI	441.0	E	ROCK	Coal seam, observed
138AG	445.0	NW	ROCK	Coal seam, inferred
139AH	449.0	E	ROCK	Coal seam, observed
140	456.0	SW	ROCK	Coal seam, inferred
141D	456.0	E	ROCK	Coal seam, inferred
142	458.0	NW	FAULT	Normal fault, inferred
143AH	465.0	E	ROCK	Coal seam, observed
144AI	473.0	E	ROCK	Coal seam, observed
145	477.0	NW	FAULT	Normal fault, inferred
146	477.0	NW	FAULT	Normal fault, inferred

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

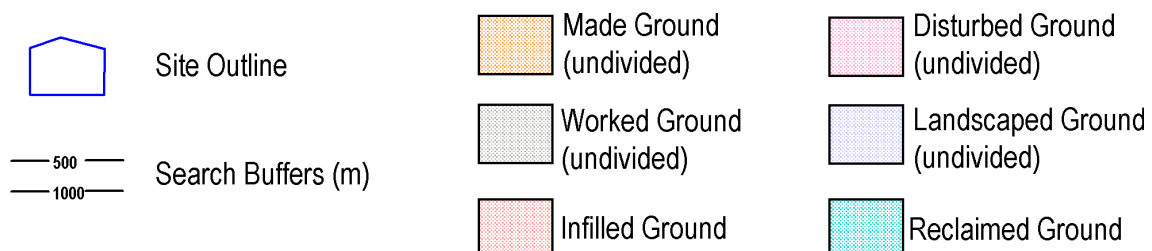
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 087

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

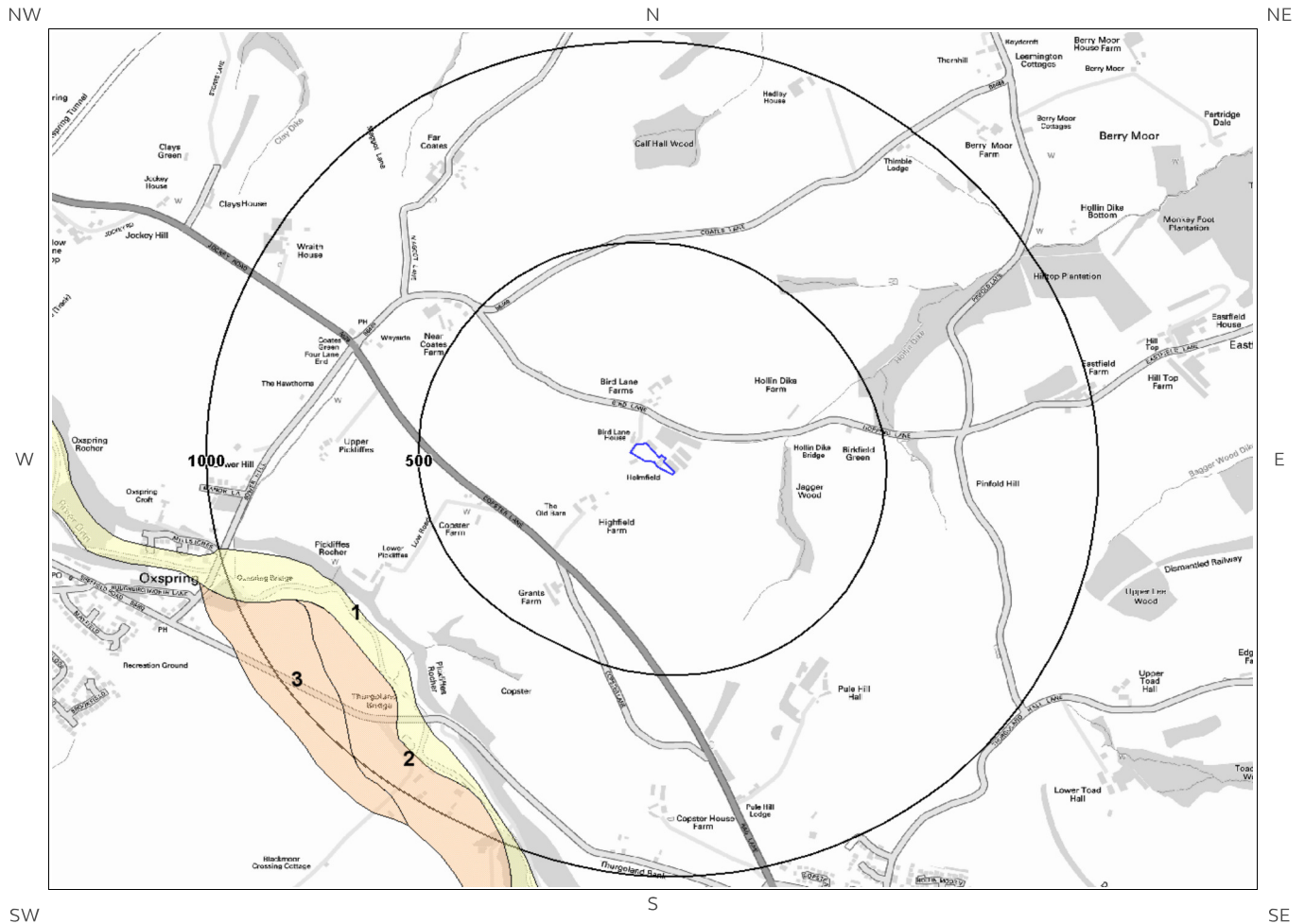
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	175.0	N	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
2	300.0	E	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
3	435.0	N	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

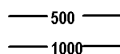
2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? No

Database searched and no data found.

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? No

Database searched and no data found.

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

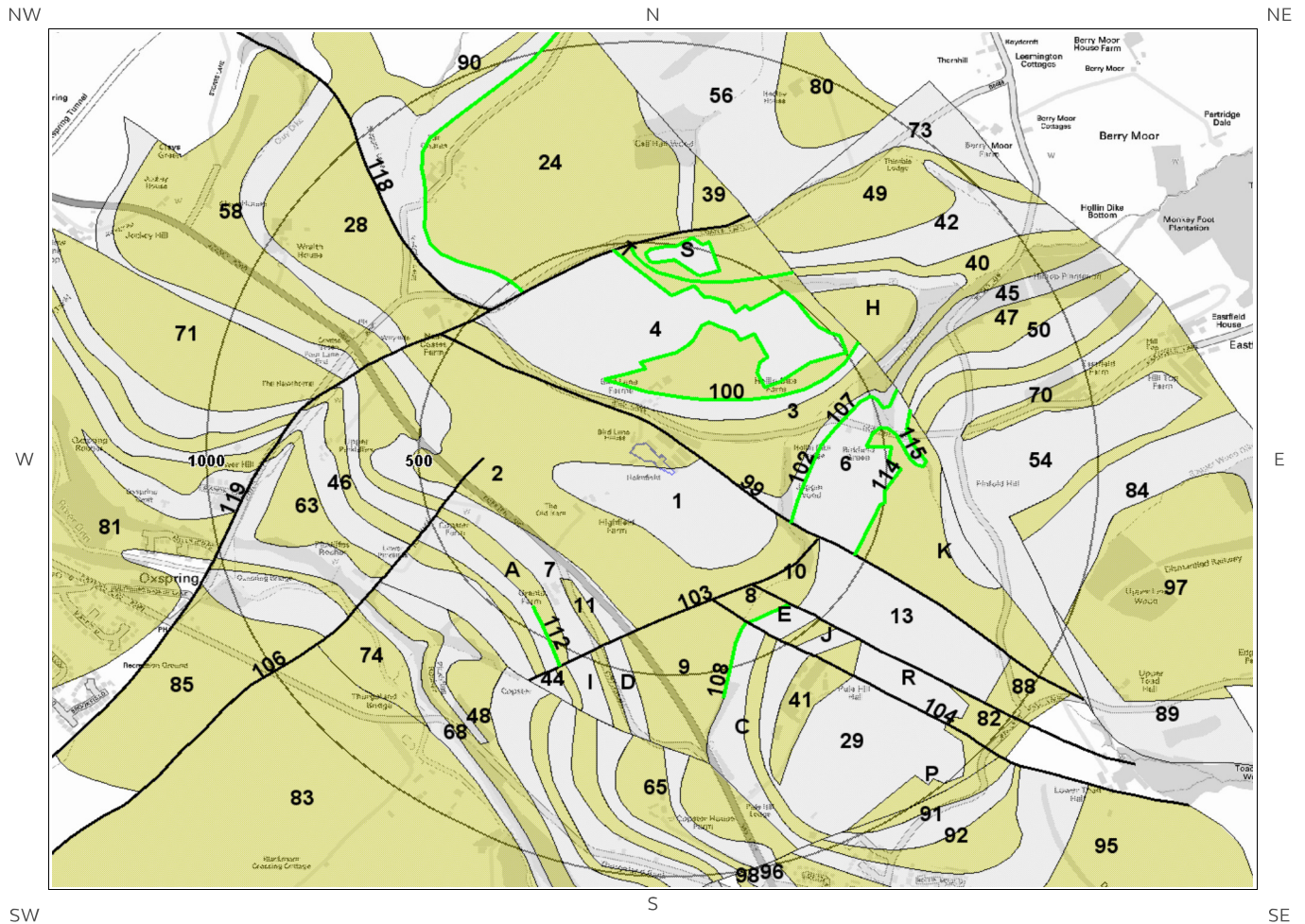
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

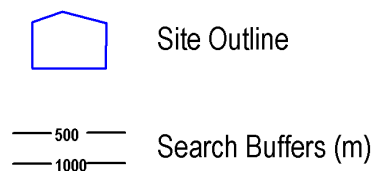
Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



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2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 087

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	0.0	On Site	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
3	47.0	NE	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
4	86.0	N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
5Q	128.0	N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
6	143.0	E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	299.0	SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	323.0	S	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
9	324.0	S	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
10	331.0	SE	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
11	344.0	SW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
12A	378.0	SW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
13	380.0	SE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
14C	406.0	SE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
15E	411.0	SE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
16B	421.0	W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
17D	424.0	S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
18A	426.0	SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
19S	435.0	N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
20B	450.0	W	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
21C	450.0	SE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
22D	456.0	S	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
23K	457.0	E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
24	458.0	NW	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
25U	460.0	NW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
26F	463.0	SW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
27G	477.0	W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
28	477.0	NW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
29	478.0	SE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
30E	482.0	SE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
31I	483.0	SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
32F	485.0	SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	High	Moderate
0.0	On Site	Fracture	High	Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? Yes

ID	Distance	Direction	Category Description	Feature Description
99	47.0	NE	FAULT	Fault, inferred
100	128.0	N	ROCK	Coal seam, inferred
101Q	175.0	N	ROCK	Coal seam, inferred
102	300.0	E	ROCK	Coal seam, inferred
103	323.0	S	FAULT	Fault, inferred
104	324.0	S	FAULT	Fault, inferred
105R	331.0	SE	FAULT	Fault, inferred
106	347.0	W	FAULT	Fault, inferred
107	352.0	E	ROCK	Coal seam, inferred
108	406.0	SE	ROCK	Coal seam, inferred
109E	411.0	SE	ROCK	Coal seam, inferred
110S	418.0	N	ROCK	Coal seam, inferred

ID	Distance	Direction	Category Description	Feature Description
111S	435.0	N	ROCK	Coal seam, inferred
112	447.0	SW	ROCK	Coal seam, inferred
113T	451.0	N	ROCK	Coal seam, inferred
114	457.0	E	ROCK	Coal seam, inferred
115	457.0	E	ROCK	Coal seam, inferred
116T	458.0	NW	FAULT	Fault, inferred
117U	460.0	NW	ROCK	Coal seam, inferred
118	477.0	NW	FAULT	Fault, inferred
119	477.0	NW	FAULT	Fault, inferred

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

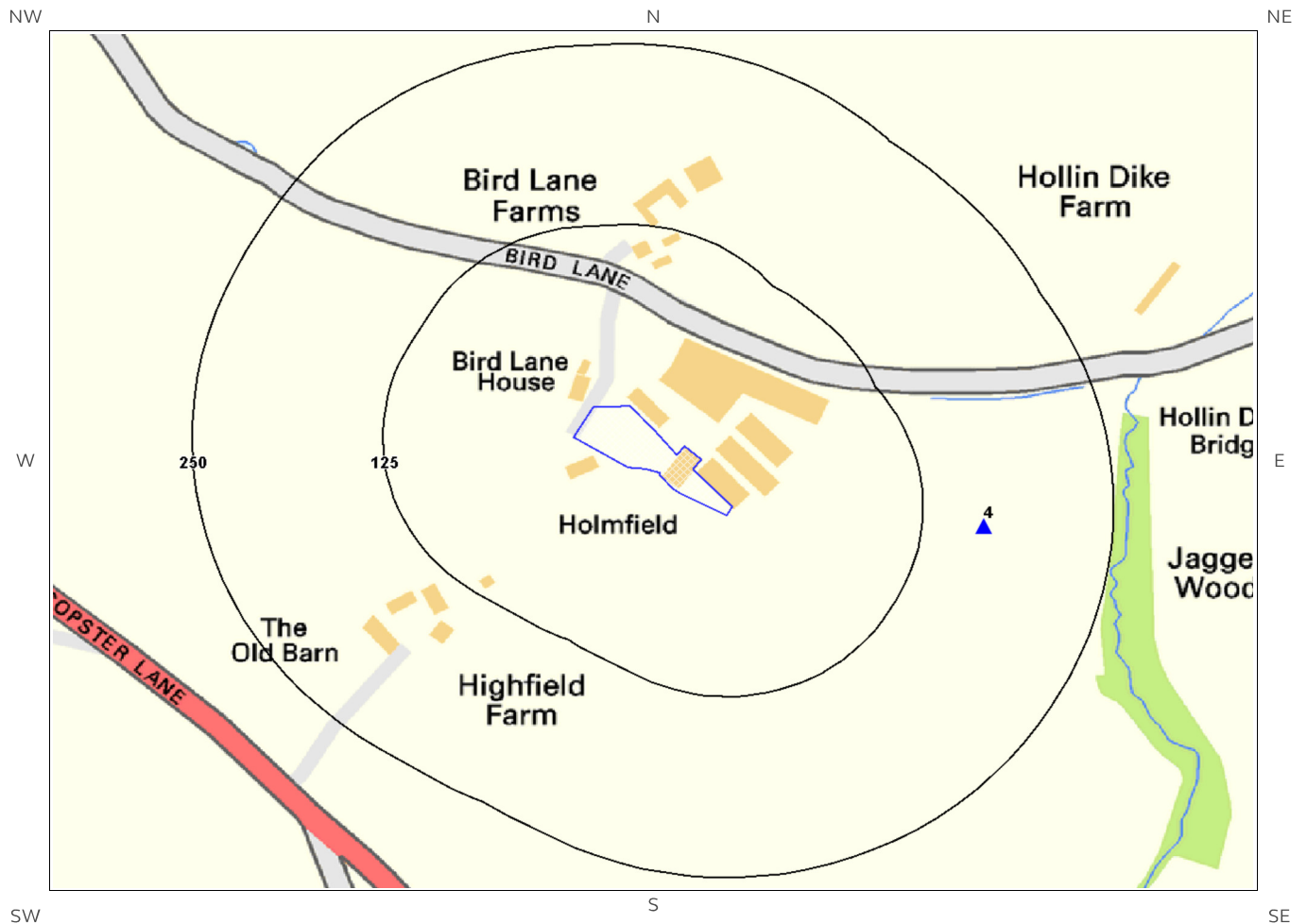
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

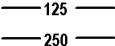
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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- | | | | |
|---|--------------------|---|----------------------------------|
|  | Site Outline |  | Historic Surface Ground Workings |
|  | Search Buffers (m) |  | Historic Underground Workings |
| | |  | Current Ground Workings |

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? No

Database searched and no data found.

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	501.0	NE	428578 402812	Unspecified Old Shaft	1903
Not shown	529.0	NE	428586 402878	Coal Pit	1903
Not shown	572.0	NE	428624 402873	Unspecified Levels	1903

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
4	165.0	E	428496 402336	Coal, Deep	Jagger Wood Coal Pit	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)	Ceased

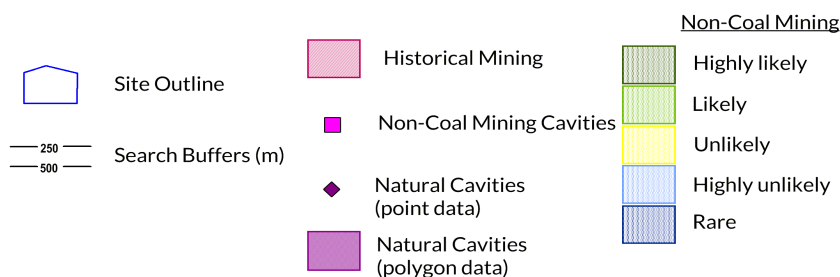
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	341.0	NW	428059 402708	Sandstone	Near Coates	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	473.0	W	427756 402355	Sandstone	Copster	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	490.0	NW	428004 402848	Sandstone	Near Coates	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	558.0	NE	428596 402868	Coal, Deep	Coates Coal Pits	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)	Ceased
Not shown	623.0	SE	428859 402018	Sandstone	Pule Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	739.0	S	428537 401635	Coal, Deep	California Colliery	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)	Ceased
Not shown	750.0	E	429077 402431	Sandstone	Pinfold Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	781.0	SW	427771 401764	Sandstone	Thurgoland Bridge	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	926.0	SW	427708 401631	Sandstone	Thurgoland Bank	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
2	501.0	NE	428578 402812	Unspecified Old Shaft	1903
3	529.0	NE	428586 402878	Coal Pit	1903
4	572.0	NE	428624 402873	Unspecified Levels	1903

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? Yes

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Sheffield Area	Vein Mineral/Iron ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

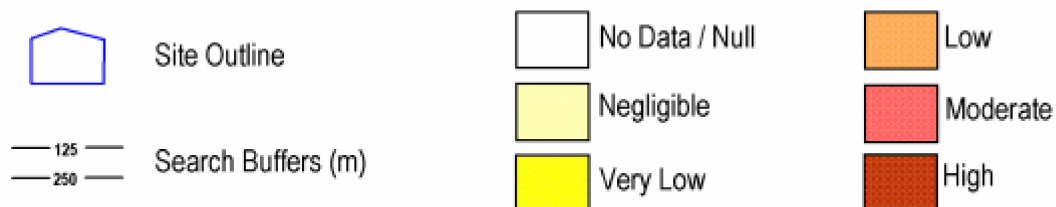
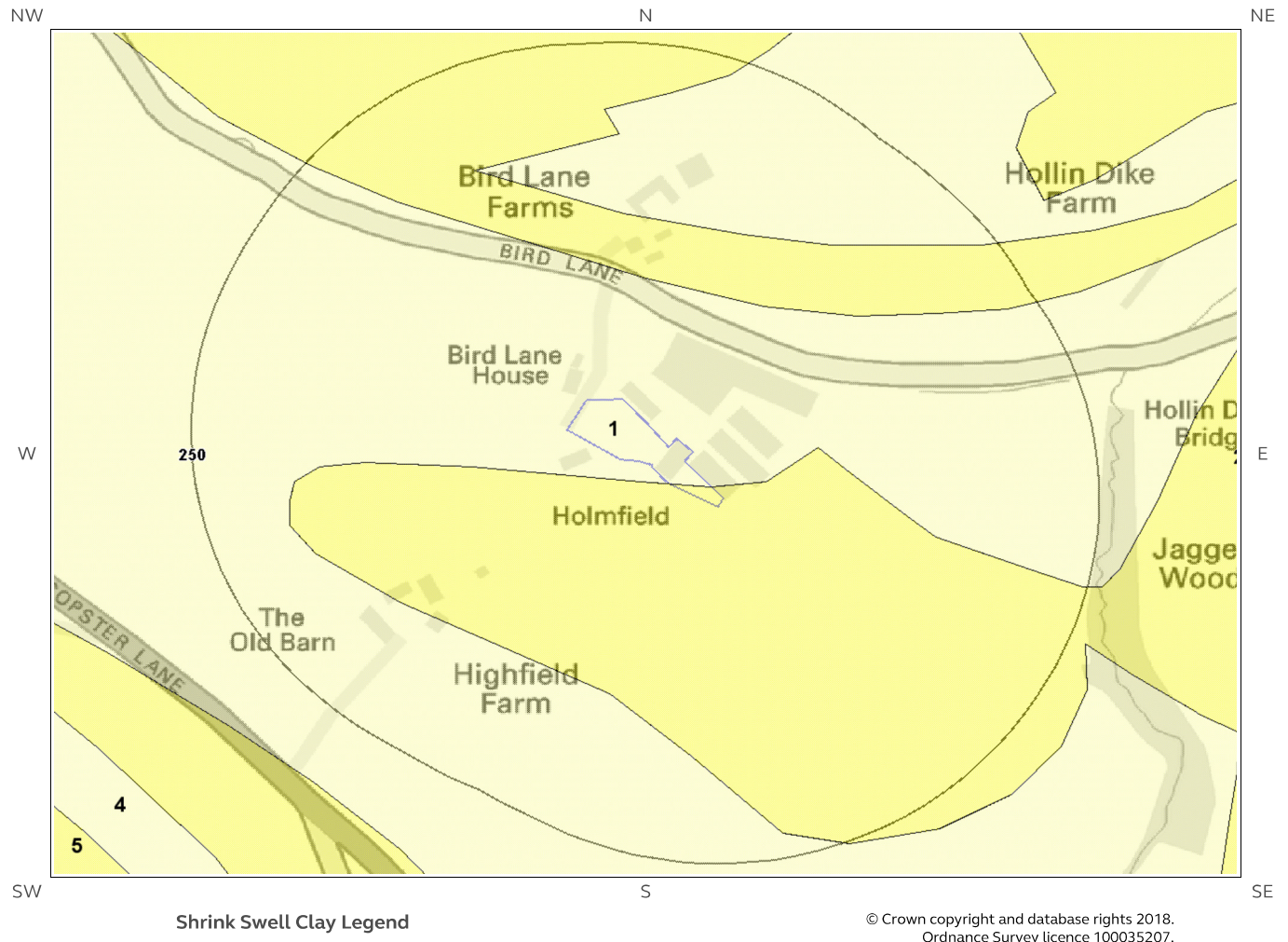
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

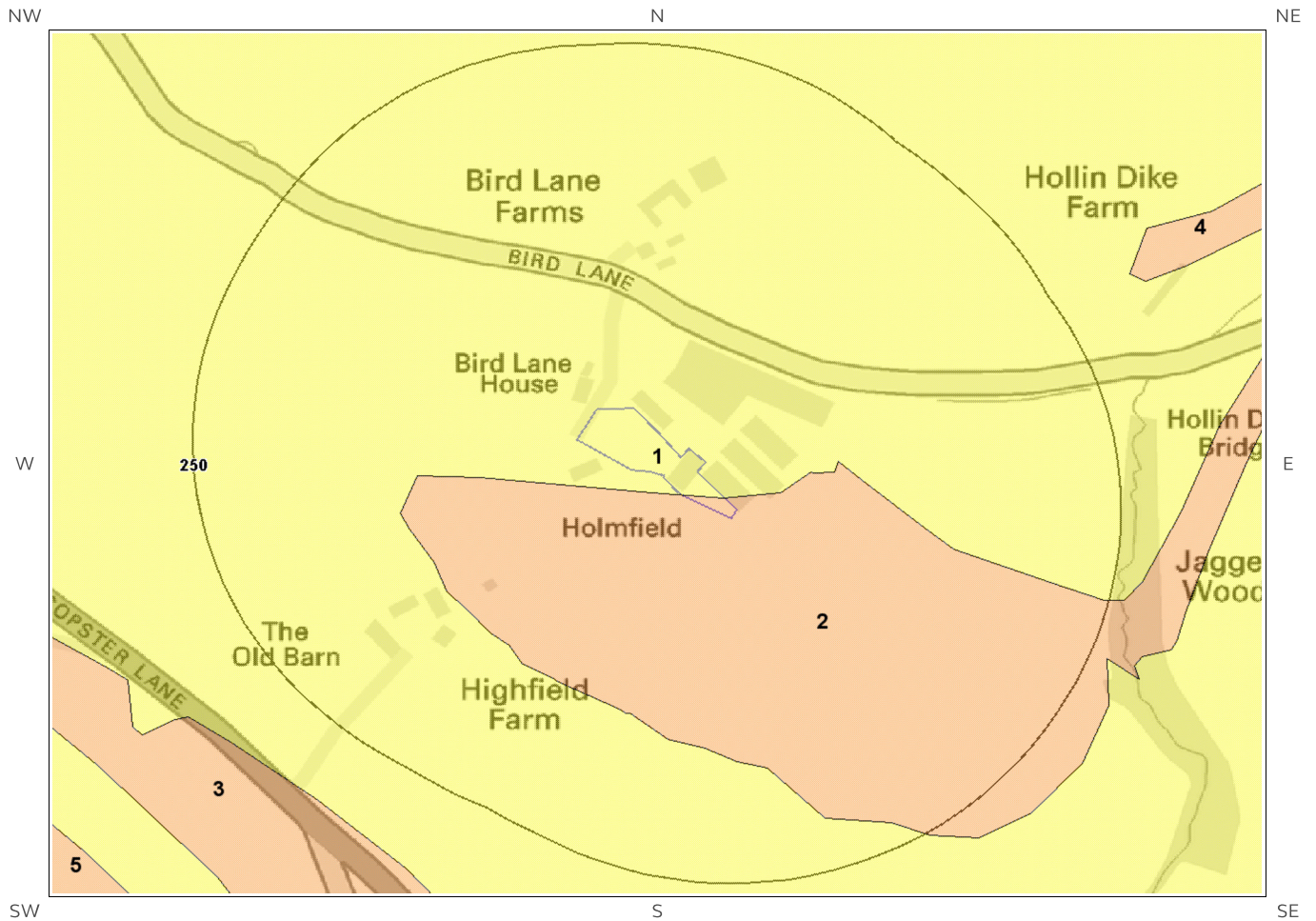
Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

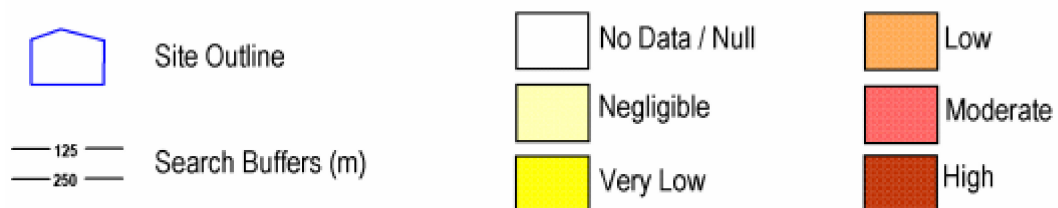


6.2 Landslides map

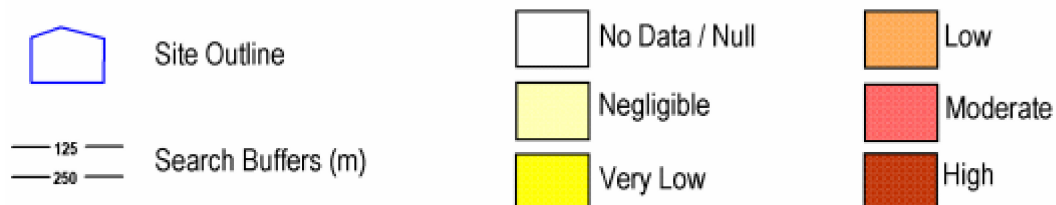
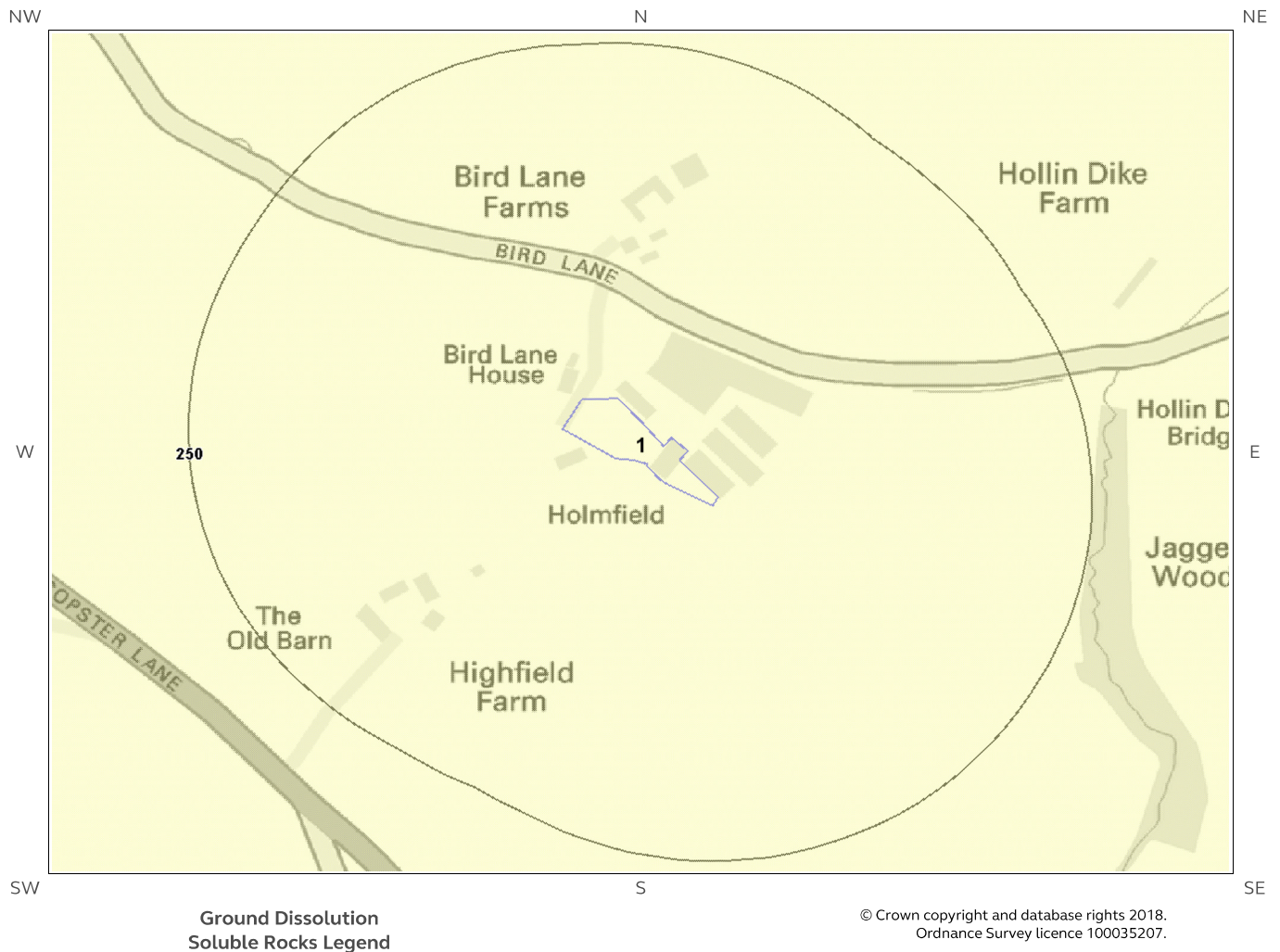


Landslides Legend

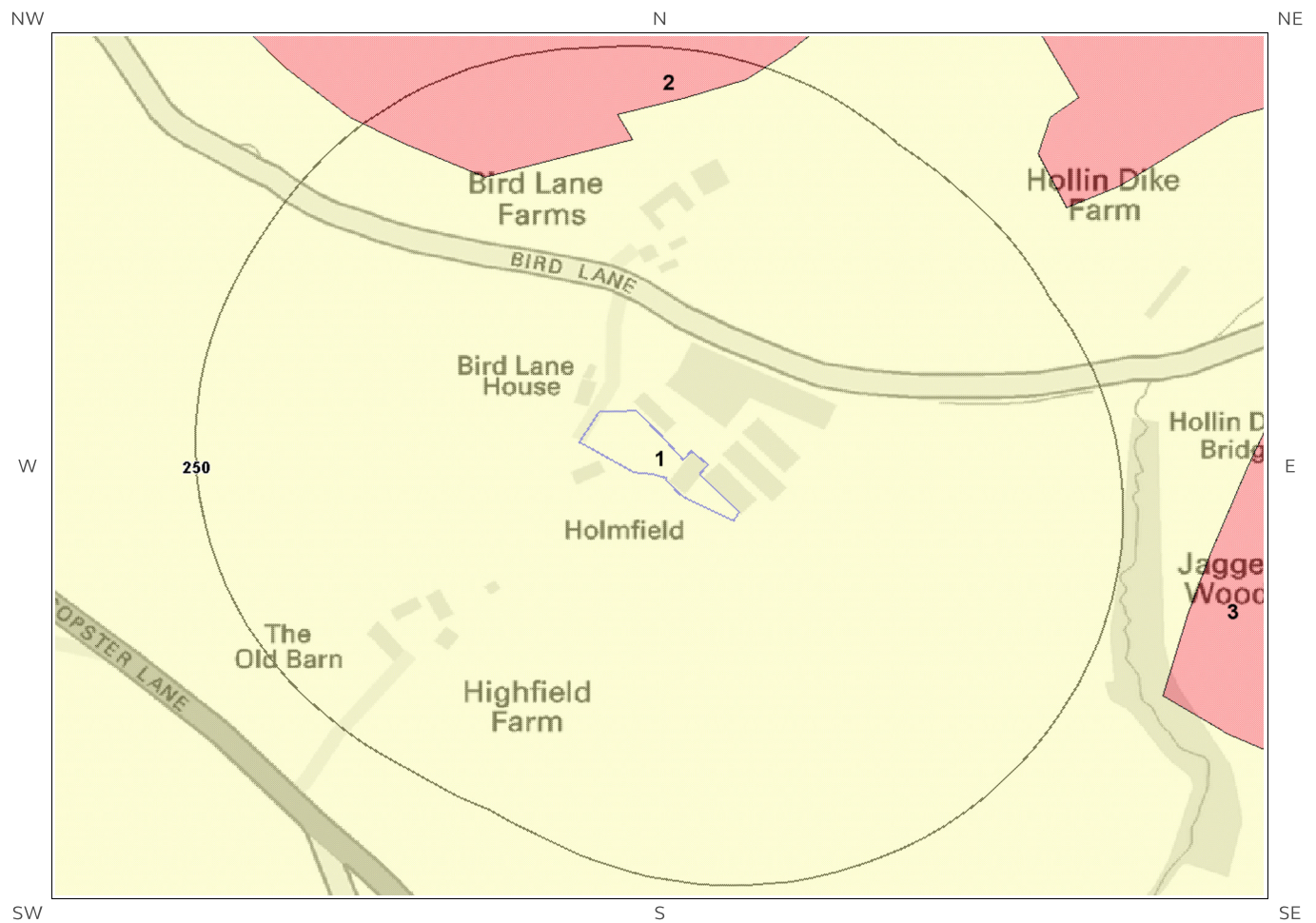
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6.3 Ground Dissolution of Soluble Rocks map

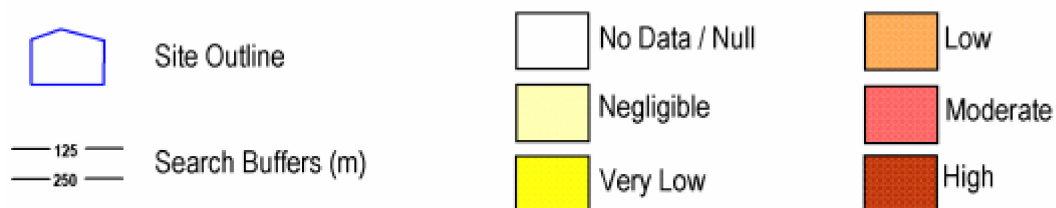


6.4 Compressible Deposits map

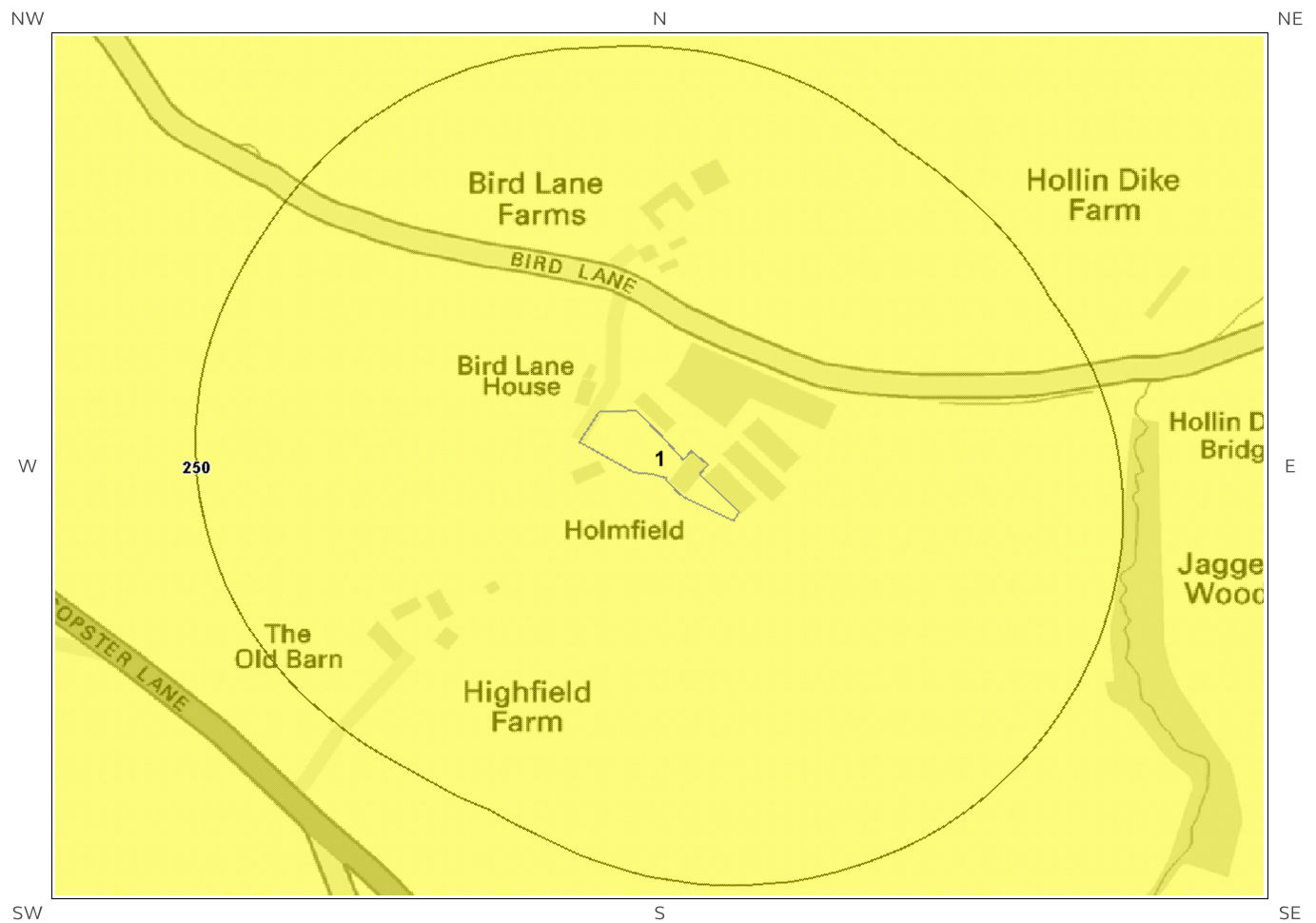


Compressible Deposits Legend

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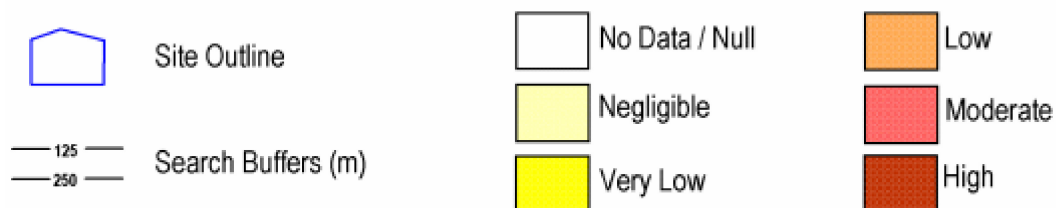


6.5 Collapsible Deposits map



Collapsible Deposits Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? Low

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
2	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
2	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

* This includes an automatically generated 50m buffer zone around the site

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

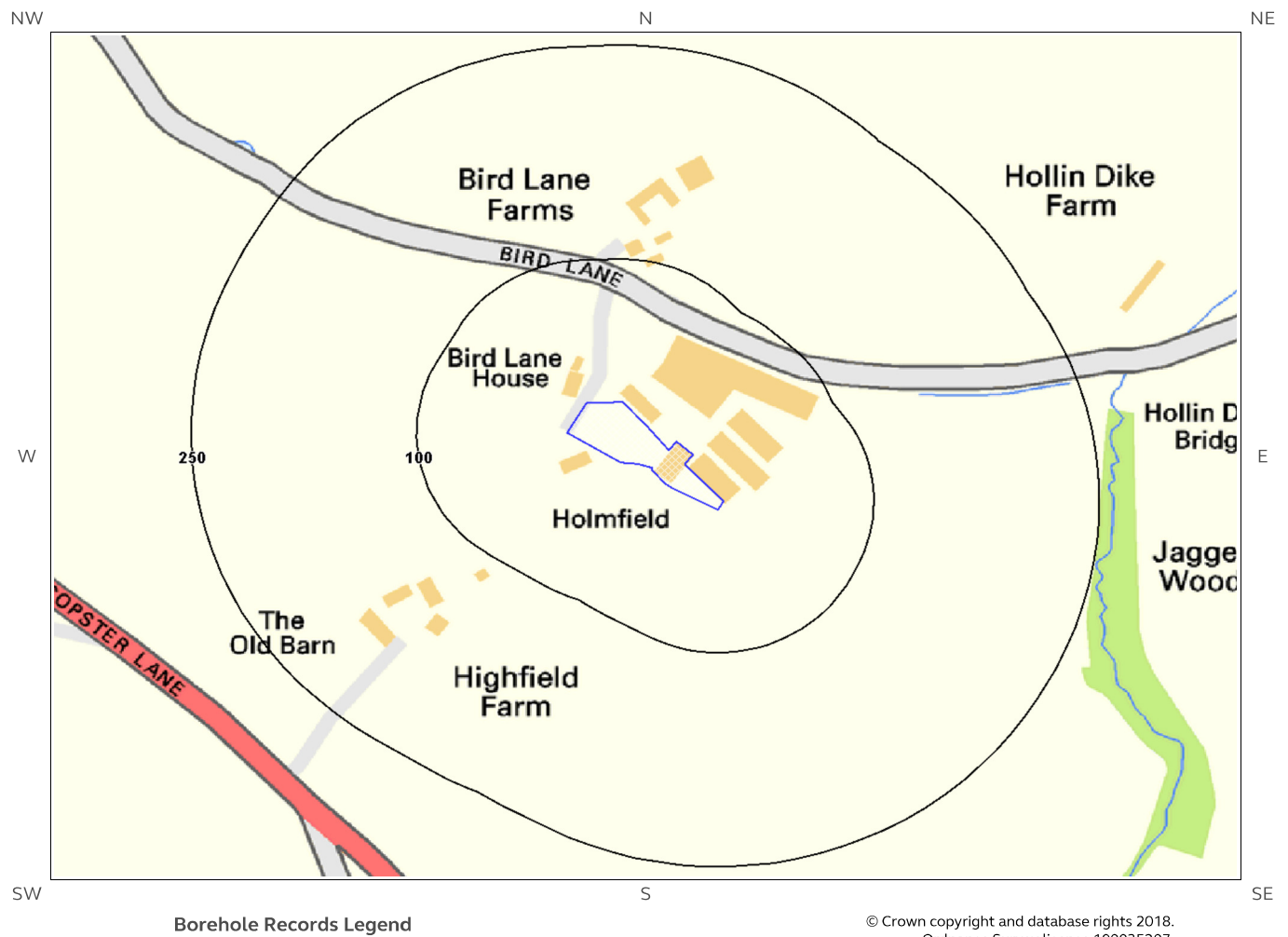
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 0

Database searched and no data found.

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

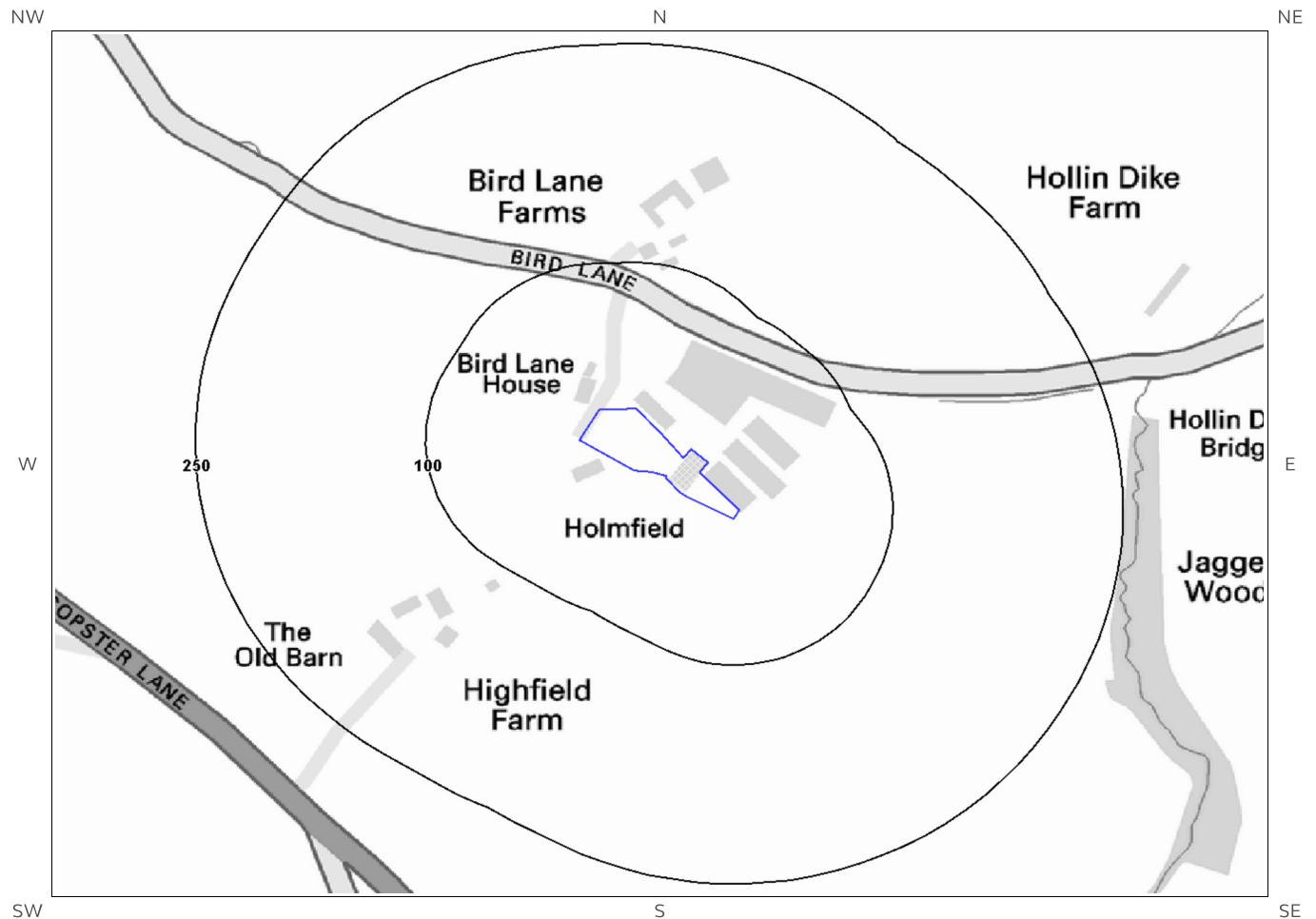
1

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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	Site Outline		Underground or Partially Underground Railway / Subway System		Railway Track (OpenStreetMap)
	Search Buffers (m)		Railway Tunnel (OS Mapping)		High Speed 2
			Abandoned or Dismantled Railway (OpenStreetMap)		High Speed 2 Revised Proposed Route
			Railway Track (OS Mapping)		Crossrail 1
					Railway and/or Tunnel Feature from Historical Mapping

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com



British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk



BGS Geological Hazards Reports and general geological enquiries

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX



The Coal Authority

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Mansfield
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Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk



Public Health England

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<https://www.gov.uk/government/organisations/public-health-england>
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<https://www.groundsure.com/terms-and-conditions-may25-2018>



The Coal
Authority

Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

BIRD LANE HOUSE
BIRD LANE
THURGOLAND
BARNESLEY
S36 8YD

Date of enquiry: 13 August 2018
Date enquiry received: 13 August 2018
Issue date: 13 August 2018

Our reference: 51001897756001
Your reference:



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority, at the time we answer the search.

Client name

Alan Ashburn

Enquiry address

BIRD LANE HOUSE, BIRD LANE, THURGOLAND,
BARNSELY, S36 8YD

How to contact us

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Approximate position of property



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Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	No
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	No
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	No
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is not within a surface area that could be affected by recorded past underground mining.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31st October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.

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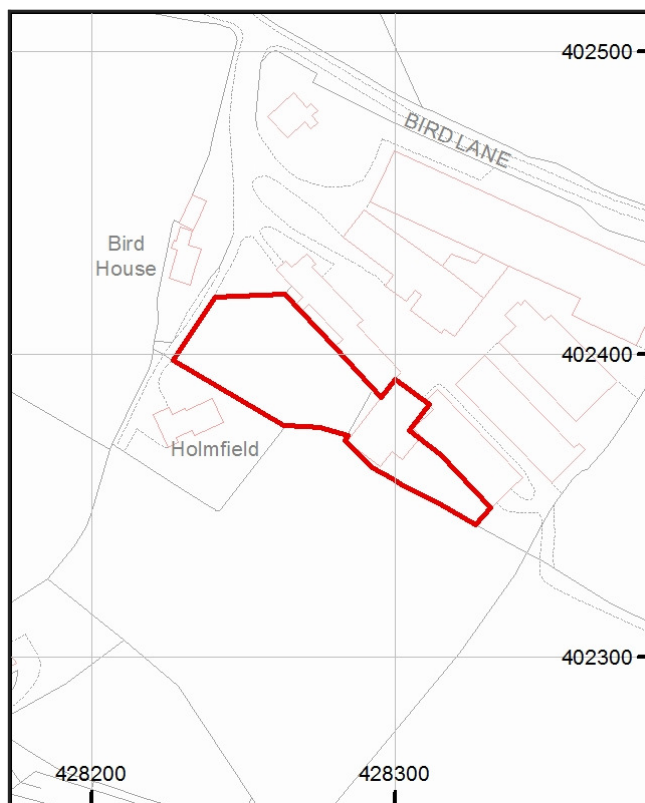
Alternative formats

If you would like this report in an alternative format, please contact our communications team.

Enquiry boundary

Key

Approximate position of enquiry boundary shown



How to contact us

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VAT receipt

Issued by	The Coal Authority 200 Lichfield Lane Mansfield Nottinghamshire NG18 4RG
Tax point date	13 August 2018
Issued to	ALAN ASHBURN HALL ANNEX 7 THORNCLIFFE PARK CHAPELTOWN SHEFFIELD SOUTH YORKSHIRE S352PH
Property search for	BIRD LANE HOUSE BIRD LANE THURGOLAND BARNSELY S36 8YD
Reference number	51001897756001
Date of issue	13 August 2018
Cost	£81.43
VAT @ 20%	£16.29
Total received	£97.72
VAT registration	598 5850 68

APPENDIX D

- 1) Photographs

Photo Reference	Description
A	Site Plan & Location of photographs.
B	Site access gate. Bird Lane House Farm.
C	Western field with proposed barn conversion to the left.
D	Proposed barn conversion.
E	Roof of proposed barn conversion.
F	Western field adjacent to proposed barn conversion.
G	Disused concrete septic tank, western field.
H	Disused brick built septic tank, western field.
I	Bird Lane House Farm, western perimeter.
J	Front of proposed barn conversion.
K	Corrugated metal barn.
L	Wooden barn.
M	Eastern elevation of proposed barn conversion.
N	2-3m high embankment into which south end of barn is cut.
O	Corrugated roofing, eastern elevation of proposed barn conversion.
P	Composition of embankment – weathered sandstone.

PHOTO 'A': Site Plan & Location of photographs.

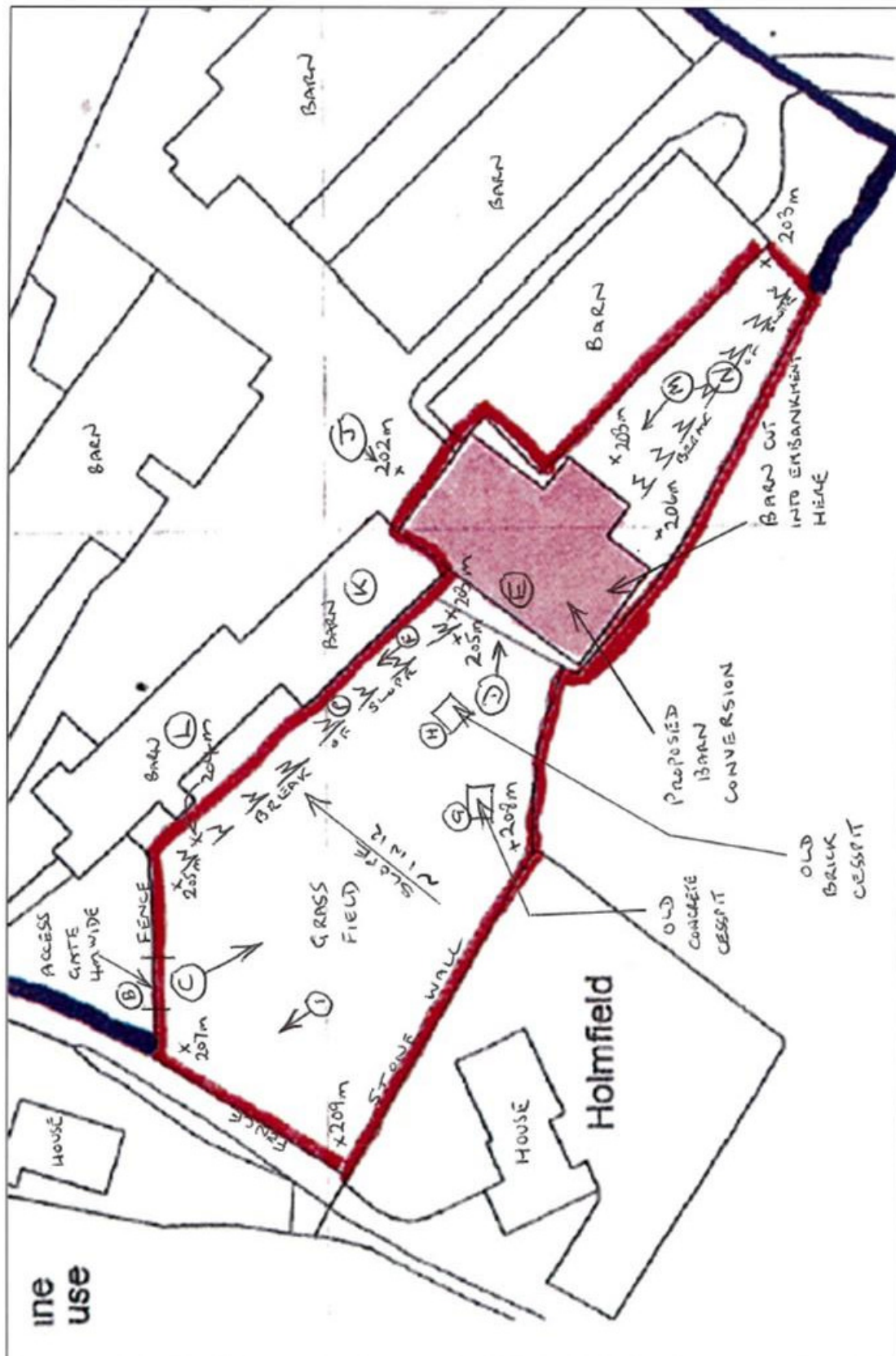


PHOTO 'B': Site access gate. Bird Lane House Farm.



PHOTO 'C': Western field with proposed barn conversion to the left.



PHOTO 'D': Proposed barn conversion.



PHOTO 'E': Roof of proposed barn conversion.



PHOTO 'F': Western field adjacent to proposed barn conversion.



PHOTO 'G': Disused concrete septic tank, western field.



PHOTO 'H': Disused brick built septic tank, western field.



PHOTO 'I': Bird Lane House Farm, western perimeter.



PHOTO 'J': Front of proposed barn conversion.



PHOTO 'K': Corrugated metal barn.



PHOTO 'L': Wooden barn.



PHOTO 'M': Eastern elevation of proposed barn conversion.



PHOTO 'N': 2-3m high embankment into which south end of barn is cut.



PHOTO 'O': Corrugated roofing, eastern elevation of proposed barn conversion.



PHOTO 'P': Composition of embankment – weathered sandstone.

