

**Blakeney Homes (Breachwood Green)
Limited
Paragon Bank PLC**

Phase 1 Geoenvironmental Desk Study

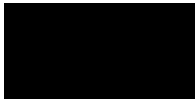
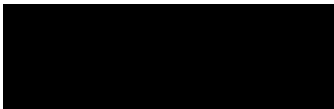
**Heath Road
Breachwood Green
Hertfordshire
SG4 8BW**

**Report Ref: 24.07.031-f01
August 2024**



DOCUMENT RECORD

Report Title	Phase 1 Geoenvironmental Desk Study Report
Development	Development of former allotments into 10 dwellings
Project Address	Heath Road, Breachwood Green, Hertfordshire SG4 8PL
Project Ref	24.07.031
Client	Blakeney Homes (Breachwood Green) Limited Paragon Bank PLC

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For and on behalf of ListersGeo, trading name of Listers Geotechnical Consultants Ltd

Issue No	Date	Status
dr01	14 th August 2024	Draft Report
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EXECUTIVE SUMMARY

Project Reference	24.07.031
Site Location	Heath Road, Breachwood Green, Hertfordshire SG4 8PL
OS Grid Reference	514888 222426
Development Proposals	Development of former allotments into 10 dwellings.
Current Site Usage	Disused.
Existing Buildings	None present.
Topography	Sloping gently to the southeast with a gradient of approximately 1.5%. Gentle undulations on surface on site.
Vegetation	Low herbaceous vegetation covering most of site with sporadic tree cover.
Published Geology	Artificial ground: None Mapped Superficial geology: Clay-with-flints Formation Bedrock geology: Lewes Nodular Chalk Formation and Seaford Chalk Formation
Hydrology	No surface water features within anticipated direction of hydraulic flow – site above dry valley. Closest water features mapped are a cluster of three ponds 180m north (not in direction of hydraulic flow).
Hydrogeology	Clay-with-Flints: Unproductive Strata. Lewes Nodular Chalk Formation and Seaford Chalk Formation: Principal Aquifer of Medium Vulnerability.
Site History	1881 – 1898: Tree lined field with building in southeast and disused clay pits and brick kiln to the south. 1898 – 1924: Brick kiln no longer mapped. 1924 – Present: Building absent, site labelled allotments. Clay pits to south backfilled. It is considered likely small buildings, sheds, and greenhouses associated with the use as an allotment will have been present and subsequently demolished, however these are often informal and not mapped.
Unexploded Ordnance	Low risk.
Potential Contamination Sources	Made ground associated with historic development and construction (with contaminants such as elevated metals and asbestos). PAH in shallow soils associated with past use as allotments and proximate brick kiln.
Expected Ground Conditions	Topsoil and localised Made Ground over Clay-with-Flints Formation, over Lewes Nodular Chalk Formation and Seaford Chalk Formation.
Potential Risks to Human Health	Potential for contaminants in shallow soils associated with made ground and past land uses.
Potential Ground Gas Risks	No significant ground gas risks have been identified for the site
Potential Risks to Controlled Waters	None identified.
Further Work Recommendations	Phase 2 Intrusive Geoenvironmental Investigation to ascertain potential contamination and any required remediation. Site Specific Radon report is recommended.

This executive summary should be read in conjunction with the main report.

CONTENTS

INTRODUCTION	1
PROPOSALS	1
SITE INFORMATION AND RECONNAISSANCE	1
<i>Setting, Size and Current Use</i>	<i>1</i>
<i>Topography and Surface Conditions</i>	<i>2</i>
<i>Vegetation.....</i>	<i>2</i>
<i>Structural Observations and Hazards.....</i>	<i>2</i>
DESK STUDY AND BACKGROUND INFORMATION	3
GEOLOGY.....	3
<i>Published Geology.....</i>	<i>3</i>
<i>Worked-Out Ground and Artificial Ground.....</i>	<i>4</i>
<i>Superficial Deposits</i>	<i>4</i>
<i>Bedrock.....</i>	<i>4</i>
<i>Structural Features</i>	<i>4</i>
<i>Solution Features.....</i>	<i>4</i>
<i>Deneholes and Chalk Mines.....</i>	<i>4</i>
<i>Historical Boreholes.....</i>	<i>5</i>
BACKGROUND SOIL CHEMISTRY.....	5
<i>Sulphate Bearing Strata.....</i>	<i>5</i>
HYDROLOGY.....	5
HYDROGEOLOGY.....	6
HISTORY OF THE SITE.....	6
UNEXPLODED ORDNANCE AND BOMB SITES	7
INDUSTRIAL USAGE SITES.....	7
<i>Historical Site Use</i>	<i>7</i>
<i>Current Site Use</i>	<i>8</i>
<i>Electricity Substations.....</i>	<i>8</i>
ENVIRONMENTAL PERMITS, INCIDENTS AND REGISTERS.....	8
POTENTIALLY SENSITIVE LAND USES.....	8
WASTE TREATMENT AND LANDFILL SITES.....	8
WORKED OUT GROUND/MADE GROUND	8
RADON GAS.....	9
GEOTECHNICAL HAZARDS	9
<i>Geological.....</i>	<i>9</i>
<i>Mining and Man-Made Cavities</i>	<i>9</i>
<i>Natural Cavities Database</i>	<i>10</i>
INITIAL CONTAMINATION CONCEPTUAL SITE MODEL	11
POTENTIAL CONTAMINATION SOURCES.....	11
<i>Potential Solid-, Liquid- and Vapour-phase Contamination Sources</i>	<i>11</i>
<i>Potential Ground Gas Contamination Sources</i>	<i>11</i>
RECEPTORS	12
<i>Human Health – Long Term Exposure.....</i>	<i>12</i>
<i>Human Health – Short Term Exposure</i>	<i>12</i>
<i>Controlled Waters and the Environment.....</i>	<i>12</i>
<i>Infrastructure.....</i>	<i>12</i>
PATHWAYS	12
<i>Human Health.....</i>	<i>12</i>
<i>Controlled Waters and Environmental.....</i>	<i>12</i>
<i>Infrastructure.....</i>	<i>12</i>
PRELIMINARY RISK ASSESSMENT	13
ON AND OFF-SITE SOURCES	14
CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER WORK	15
<i>Recommendations.....</i>	<i>15</i>
REFERENCES	16
APPENDICES – see overleaf	

APPENDICES

APPENDIX A – PLANS AND PHOTOGRAPHS

- Site Location Plan
- Plan Showing Existing Site Layout
- Site Photographs

APPENDIX B – CONTAMINATION RISK ASSESSMENT

- Contaminated Land Risk Assessment Methodology

APPENDIX C – DESK STUDY INFORMATION

- Groundsure Enviro and Geo Insight
- Historical Ordnance Survey and National Grid Maps

PHASE 1 GEOENVIRONMENTAL DESK STUDY REPORT

INTRODUCTION

A Phase 1 Geoenvironmental desk study has been undertaken for a Development of former allotments into 10 dwellings at Heath Road, Breachwood Green, Hertfordshire SG4 8PL. A Site Location Plan is provided in Appendix A. The Ordnance Survey National Grid reference for the approximate centre of the site is 514888 222426.

Instructions to undertake the investigation were received from Blakeney Estates Ltd acting on behalf of Paragons, in their email dated 17th July 2024

This report describes the desk study and walkover survey carried out by ListersGeo in order to provide an evaluation of the potential ground conditions and potential for any soil, gas or groundwater contamination at the site. The report presents a preliminary human health and groundwater risk assessment based on the findings of the desk study information.

This report has been prepared for the sole use of the client and their professional advisors. This report shall not be relied upon by third parties without the express written authority of ListersGeo. If an unauthorised third party comes into possession of this report they must not rely on it and the authors owe them no duty of care and skill.

PROPOSALS

It is proposed to develop the site to accommodate a new residential development.

The preliminary geoenvironmental risk assessment has been prepared to discharge Condition 11(a) of Planning Application reference 22/02942/OP.

The report is based upon the above development proposals. Should these alter significantly following issue of this report, then the contents will require re-evaluation.

SITE INFORMATION AND RECONNAISSANCE

A reconnaissance of the site and its immediate surrounds was undertaken on the 17th of July 2024. A selection of site photographs is presented in Appendix A along with a plan showing the existing site layout annotated with the salient features identified.

Setting, Size and Current Use

The site lies in a residential and agricultural area in the northwest of Breachwood Green and is currently occupied by disused allotments. Access to the site was afforded via Heath Road to the east of the site.

The site consists of a generally flat rectangular parcel of land, aligned approximately east-west. With dimensions of approximately 123m by 45m the site extends to approximately 52ha.

On the site area itself, there was a small and shallow plastic membrane lined pond in the southeast area, measuring 4m x 6m x 0.35m deep.

There was an indication of a small development platform and a small demolished building, suspected to be a greenhouse due to an abundance of glass, in the southwest of the site.

In the northwest of the site is a small area of mature trees estimated to be 3m in height. Across the northeast, east, and southeast of the site is an area of mature trees estimated to be over 10m in height.

Along the south of the site are sporadic trees estimated to be up to 8m in height.

The site is bordered by:

Direction	Feature
North	Intermittent wooden and wire fencing, with allotments, houses, and gardens beyond
East	Heath Road with houses, gardens, farms, and open fields beyond
South	Wooden fencing with houses and gardens beyond
West	Hedgerow and trees with arable fields beyond

Topography and Surface Conditions

The general topography of the area slopes gently down to the southeast towards a dry valley approximately 100m away in that direction. The site itself generally slopes gently down towards the southeast with a gradient of approximately 1.5%. The surface of the site itself is uneven with gentle undulations, anticipated from its past use and working as an allotment.

There were no obvious stains, spills or areas of dying vegetation on the site surface that might indicate areas of contaminated ground.

Vegetation

The site is covered with low grass and herbaceous vegetation with sporadic tree cover, and continuous tree cover in the southeastern portion of the site.

In the northwest of the site is a small area of mature trees estimated to be mature fruit trees and 3m in height. Across the northeast, east, and southeast of the site is an area of mature trees estimated to be over 4m to over 10m in height of mixed type including coniferous, deciduous, and mature Hawthorn. In the southwest of the site was a mature tree estimated to be 8m in height estimated to be deciduous. Along the west of the site was a row of trees estimated to be Oak and 8m in height, beyond which was a hedgerow estimated to be 3m in height which formed the western boundary.

No areas of dying or sparse vegetation were observed.

Structural Observations and Hazards

No standing structures were observed on the site.

No apparent hazards were observed on the site, such as open manhole covers.

DESK STUDY AND BACKGROUND INFORMATION

A desk study review of the site and its history has been undertaken to determine the former land usage and the potential for any historically derived sources of chemical contamination.

The information provided in the desk study is obtained from independent third-party sources. We have relied on this information, but no guarantee can be given for the accuracy or completeness of the third-party data used. It should be appreciated that such data is not exhaustive and is constantly being updated and reviewed in light of new information and procedures. Therefore, improved practices, technology and new information may affect our conclusions and hence this report should be referred back to us for reassessment if new data comes to light, or changes in legislation/best practise is identified prior to development. Similarly, should the development commence more than one year from publication of this report, then we recommend this report is referred back to us for reassessment.

A copy of the desk study information obtained from Groundsure is presented in Appendix C of this report.

The desk study comprises a review of data compiled from multiple organisations and information sources, including:

- Ordnance Survey
- Environment Agency (EA)
- Local Authority
- Natural England
- UK Health Security Agency (UKHSA)
- Centre for Ecology & Hydrology
- Contemporary Trade Directories
- The Coal Authority
- British Geological Survey (BGS), National Geoscience Information Service
- Arup and Stantec
- Aerial Imagery
- Unexploded Ordnance (UXO) maps

Information from the above referenced sources has been utilised to develop a conceptual model of the site for use in the source-pathway-receptor risk assessment.

GEOLOGY

Published Geology

Reference to the BGS 1:50,000 scale map, Sheet 221 for Hitchin dated 1995 and other published geological information on the area indicates that the site is underlain by Quaternary age Superficial geology, the Clay-with-Flints Formation above Cretaceous age Bedrock geology, the Lewes Nodular Chalk Formation and Seaford Chalk Formation.

Worked-Out Ground and Artificial Ground

No worked out or made ground is mapped on the site.,

Superficial Deposits

Clay with flints is a residual deposit formed from weathering of underlying bedrock strata and in this area is typically represented by orange brown and red brown sandy clay with abundant nodules and gravel of flint, with local bodies of sand, silty and gravel.

Bedrock

The Lewes Nodular Chalk Formation and Seaford Chalk Formation of the White Chalk Subgroup, are typically represented by hard chalk interbedded with softer chalk and marls (calcareous mudstone) and nodular flints.

Structural Features

No structural features are mapped within 1000m of the site.

Solution Features

Chalk, as a calcium-carbonate rich rock, is highly susceptible to dissolution by water containing carbon dioxide. This dissolution can create three common types of features within the chalk, grouped together under the generic term 'dissolution features'. These features include:

- **Sinkholes:** Depressions at the ground surface caused by the collapse of overlying chalk or superficial deposits into underground voids created by dissolution. The shape and size are dependent on the underlying void feature.
- **Solution pipes:** A feature in the surface of the chalk caused by increased dissolution in an area of closely spaced discontinuities. These features may, or may not, have a ground surface expression. They occur up to 20m in diameter, though are commonly much smaller.
- **Swallow Holes:** A void within the surface of the chalk where a stream is 'swallowed' by the chalk to flow underground. They often occur at the junction of impermeable strata and chalk. Infilled ancient swallow holes do exist where streams used to flow and may not have any surface expression. They can occur up to 14m in diameter, though commonly a few metres.

The ground dissolution risks are discussed further on in this report.

Ground dissolution features are not documented in the area or for the Lewes Nodular Chalk that the site lies on.

Deneholes and Chalk Mines

In addition to the above natural cavities found within chalk strata, man-made cavities, such as deneholes or chalk mines, can also be encountered. Deneholes are produced by ancient chalk mining for flint and are commonly vertical shafts excavated through any overburden material and undermined at the base, similar to bell-pits in coal mining areas. Chalk Mines are more modern and are excavated in a similar way to coal mines.

Both are often insufficiently backfilled, initiating collapse at a later date. They are seldom found in areas with a high water table.

The desk study information indicates that the area is in a low risk for chalk mining.

Historical Boreholes

No relevant historical boreholes were identified from the available data.

BACKGROUND SOIL CHEMISTRY

Information from the BGS is provided in the table below listing the background soil chemistry of some commonly occurring heavy metals in the natural soils in the site area:

Heavy Metal	Level in Natural Soils (mg/kg)
Arsenic	15
Cadmium	1.8
Chromium	60 to 90
Lead	100
Bio-available Lead	60
Nickel	30-45

The background soil chemistry does not indicate any elevated metals which could pose a risk to residential end users of the site.

Sulphate Bearing Strata

The available information does not show known sulphate bearing strata being present on the site.

HYDROLOGY

The site is on a gentle, southeast-facing hillside above a dry valley. The anticipated direction of hydraulic flow is to the southeast and the nearest surface watercourse in that direction is the River Mimran, approximately 1900m from the site. The nearest mapped surface water features are a cluster of three ponds 180m to the north of the site. Due to the topography of the area, the ponds are not considered within the direction of hydraulic flow.

The Environment Agency's Catchment Data Explorer records the Mimram (Whitwell to Codicote Bottom), to be of Moderate ecological status for the latest reported period in 2022.

The desk study data indicates that the following flood risks are recorded for the site:

- River or coastal waters: no records, indicating Negligible risk.
- Surface water: Negligible risk.
- Groundwater: Low risk

These data do not constitute a site-specific Flood Risk Assessment and we recommend further enquiries to determine if such an assessment would be required to support a development application for the site.

There are no recorded current surface water abstraction licenses located within 1000m of the site.

HYDROGEOLOGY

The groundwater vulnerability and aquifer designation data are based on geological mapping provided by the British Geological Survey.

Groundwater vulnerability is divided, by the EA, into High, Medium and Low ranks (as further detailed in the appended Desk Study Report).

The aquifer designation is initially divided as below:

- **Superficial (Drift)** - permeable unconsolidated (loose) deposits. For example, sands and gravels
- **Bedrock** - solid permeable formations. For example, sandstone, chalk and limestone

And, for each of these, there are sub-classifications as Principal, Secondary A and Secondary B Aquifers and Unproductive Strata, each with a decreasing rank of importance.

The EA records the Clay-with-Flints as Unproductive Strata and the Lewes Nodular Chalk Formation and Seaford Chalk Formation as a Principal Aquifer of Medium Vulnerability.

According to information provided by the EA the site is within a Zone 2 Source Protection Zones (SPZ) for a public potable water supply located approximately 986m to the northeast of the site.

An SPZ is a protection zone placed around a well or borehole (or group of such) that supplies groundwater of potable quality and is divided into three sub-zones, defined as follows:

- Zone 1 – Travel time (of water) of 50 days or less to the groundwater source
- Zone 2 – The greater of: 25% of the source area, or a travel time of 400 days
- Zone 3 – The total area needed to support the discharge and abstraction from the source

The Water Framework Directive for groundwater bodies records the Upper Lee Chalk Water Body as having Poor overall status at the last report period dated 2019.

HISTORY OF THE SITE

The history of the site has been assessed by reviewing historical Ordnance Survey and National Grid maps dating back to 1881.

At their earliest these show the site as a tree lined field, with a tree in the centre, and a building recorded in the southeast of the site. The village of The Heath is 20m to the north and there were old clay pits 50m to the south and a brick kiln approximately 125m to the south. The village of Breachwood Green is approximately 300m south and Darleyhall approximately 500m east, with open fields and sporadic woods between. By 1898 the brick kiln is no longer mapped and by 1924 the building in the southeast of the site is not mapped and the site is designated allotments. The site layout had no further mapped changes to the present day.

By 1972 the old clay pits 50m south of the site are no longer mapped, and two houses are present to the south of the site over the location of the pits, and the village of Breachwood Green approximately 300m to the south has expanded.

Between 2010 and 2024 a small residential development, in the location of the former clay pits, was constructed named Spinney Gardens.

A public footpath is mapped across the centre of the site travelling northeast to southwest.

Inspection of more recent historical aerial imagery of the site revealed that there were several small sheds and greenhouses on the site.

UNEXPLODED ORDNANCE AND BOMB SITES

The Zetica bomb risk map shows that the site is located in an area where there is a low risk of encountering unexploded ordnance (UXO) beneath the site. Works can normally proceed without any special precautions.

INDUSTRIAL USAGE SITES

The following table summarises eight historical potentially contaminative activities and two current industrial land uses that have been identified within 250m from the site:

Distance (m)	Direction	Feature/Activity
On site	-	Allotments (Historic)
10	SE	Motor Vehicle Parts and Accessories (Contemporary)
42	SE	Clay Pits (Historic)
76	N	Garage (Historic)
95	N	Motor Second Hand Vehicles (Contemporary)
140	S	Brick Kiln (Historic)
146	N	Unspecified Pits (Clay considered likely) (Historic)
151	S	Unspecified Pits (Clay considered likely) (Historic)
241	SE	Smithy (Historic)
242	SE	Electricity Substation (Historic - Pre 1981)

The nearest active or historic fuel filling station is in excess of 1km from the site.

Historical Site Use

The site was formerly used as allotments.

Contaminants associated with historical site usage would be expected to include polycyclic aromatic hydrocarbons (PAHs) associated with incomplete combustion of materials from small scale burning of waste, and potential asbestos containing materials associated with storage buildings.

Current Site Use

The site is currently disused.

Electricity Substations

Generally, if an electricity substation was installed prior to 1981, it should be assumed to potentially contain polychlorinated biphenyls (PCBs) in the transformer oil used as a coolant or dielectric fluid. Whilst not particularly mobile in the environment, PCBs are persistent in the environment and were banned for use in new equipment 1981 and should not be present in equipment installed after that date.

The closest electricity substation recorded before 1981 is 242m southeast of the site and due to the immobility of PCBs and the impermeability of the intervening superficial deposits this is considered to pose a negligible risk to the site.

ENVIRONMENTAL PERMITS, INCIDENTS AND REGISTERS

There are no records of pollution incidents or accidents, licensed industrial activities, storage of dangerous, hazardous or radioactive substances, pollution control licenses or contaminated land within 500m of the site.

There is one waste exemption record within 500m of the site, which was 49m south of the site and for the use of waste in construction. Due to the distance of the site and the impermeable nature of the intervening superficial deposits this is considered to pose a negligible risk to the site.

There are four licensed discharges to controlled waters within 500m of the site, however, as the site is located upstream of these discharges and not in proximity to surface water features these are considered unlikely to have any significant impact upon the site.

POTENTIALLY SENSITIVE LAND USES

The site is located in close proximity to several environmentally sensitive land uses.

- The site is located within designated Green Belt.
- The site is located within a surface water and ground water nitrate vulnerable zone.
- 36m southeast of the site an additional habitat for Deciduous Woodland is listed on the Priority Habitat Inventory.

WASTE TREATMENT AND LANDFILL SITES

Reference to records indicates that there are no current or historical landfill disposal sites within 500m of the site.

WORKED OUT GROUND/MADE GROUND

A veneer of Made Ground is anticipated in the southeast of the site associate with the historic building mapped here.

A more significant depth of Worked out and Made ground is anticipated beyond the boundary to the south of the site associated with historic clay pits and brick kiln, their subsequent infilling/demolition, and the later

construction upon their location. There are no indications of excavations having taken place on the site itself, however, the presence of unrecorded workings cannot be discounted.

RADON GAS

Reference to the Groundsure information indicates the site is within an area where less than 1% exceed the 200 Bq/m³ action level.

As such, no radon gas protections measures are required for new dwellings at this site.

GEOTECHNICAL HAZARDS

The following geotechnical information from Groundsure is provided here, but no formal geotechnical desk study or recommendations form part of the scope of this geoenvironmental report.

Geological

The risk of naturally occurring geotechnical hazards at the site is recorded in the Groundsure report to be as follows:

Ground Stability Hazard	Hazard Potential Rating	Comments
Shrinking and swelling clays	Low	Clay geology
Collapsible deposits	Very Low	
Ground dissolution of soluble rocks	Very Low	Low risk mapped within 100m southeast of the site and Moderate risk some 300m southeast.
Landslides	Very Low	
Running sand	Negligible	
Compressible deposits	Negligible	

Mining and Man-Made Cavities

The desk study information identified that the site does not lie within an area likely to be affected by coal mining or non-coal mining activities.

The desk study information and mapping has not identified recorded man-made or mining cavities with 500m of the site. Several surface workings are however within proximity to the site as listed in the earlier Industrial Usage Sites section.

There have been several sinkhole collapses in Hertfordshire in recent years which have now been attributed to the collapse of un-recorded chalk mines associated with clay pits where lime from the chalk has been extracted for making bricks. As there is a clay pit recorded 42m to the southeast of the site and a brick kiln 140m south of the site, consideration should be given to the potential for chalk mine workings extending beneath the site itself.

However, the desk study information states that the site is located in an area where underground mine workings are uncommon, and despite similar geology to areas with workings elsewhere, the potential for difficult ground conditions is unlikely and at a level where this needs not to be considered.

Natural Cavities Database

Information held by Stantec UK has not identified any naturally formed dissolution features within 500m from the site.

For geotechnical purposes, it is recommended that a natural cavities dissolution risk assessment is undertaken to confirm the hazard ratings presented in the desk study information.

INITIAL CONTAMINATION CONCEPTUAL SITE MODEL

A qualitative Preliminary Risk Assessment (PRA) has been undertaken in line with the EA's online guidance Land Contamination: Risk Management (LCRM).

It is understood that the development proposals are for residential houses.

Potential sources of contamination and potential receptors have been assessed using the source-pathway-receptor principle to create a Conceptual Site Model (CSM). This takes into account the fact that a complete pathway must exist between a potential source of contamination and a potential receptor for there to be considered a risk.

POTENTIAL CONTAMINATION SOURCES

Potential Solid-, Liquid- and Vapour-phase Contamination Sources

The results of the desk study and walkover indicate that the following potential sources of soil or groundwater contamination are present at or in close proximity to the site:

- Made Ground is likely to be present at the site associated with historical construction and demolition works, potentially containing metals or asbestos.
- Contaminants associated with historic use of the site including PAHs.
- Worked out ground is considered possible to be present associated with nearby historic clay pits and unrecorded workings on the site itself.

Potential Ground Gas Contamination Sources

Two main groups of gaseous-phase contamination have been considered: the gases (including methane and carbon-dioxide) that result from organic decomposition of constituents in the ground; and Radon gas that results from the radioactive decay of thorium and uranium (found, in varying quantities, in most soils and rocks).

In consideration of the source-pathway-receptor methodology for ground gas risk assessment set out in CIRIA C665, the sensitivity of the residential development is considered to be high.

The site is located in an area where the risks from ground gases are considered to be low. We have therefore provisionally assessed the risk of ground gas impacting the site, by reference to the CL:AIRE research bulletin RB17, "A pragmatic approach to ground gas risk assessment" 2012.

The following potential sources have been assessed:

- No credible sources or pathways for landfill gas migration from an off-site landfill have been identified.
- The site has not been a registered landfill.
- Any Made Ground present is not expected to be 5m deep or an average of 3m in thickness.
- The site does not lie on a potential naturally organic soil.
- Radon protection measures are not required for this development.
- Therefore, no significant sources of ground gases have been identified for the site.

RECEPTORS

The following most sensitive receptors have been identified at the site:

Human Health – Long Term Exposure

- End users of the site - the future residents.
- Nearby residents

The critical receptor is a child under the age of six.

Human Health – Short Term Exposure

- Construction workers (during redevelopment)
- General Public (during redevelopment)
- Maintenance Workers

The critical receptor is an adult.

Controlled Waters and the Environment

- The Lewes Nodular Chalk Formation and Seaford Chalk Formation Principal Aquifer beneath the site
- Zone 2 Source Protection Zone

Infrastructure

- Substructures
- Water supply pipes

PATHWAYS

It is considered that a number of potential pathways exist between these potential sources and the above identified receptors. The viability of these pathways is discussed in the preliminary risk assessment.

Human Health

- Direct soil ingestion in areas of exposed soil
- Ingestion of soil attached to homegrown produce
- Ingestion of homegrown produce with contamination uptake
- Inhalation of indoor and outdoor vapours and dust
- Dermal contact with contaminated soil

Controlled Waters and Environmental

- Migration/leaching of contaminants through the unsaturated zone
- Migration of contaminants through the groundwater
- Movement of contaminants through drains or services runs

Infrastructure

- Leachable or corrosive contaminants within the soil

- Corrosive contaminants within the groundwater

PRELIMINARY RISK ASSESSMENT

Based on the desk study research, the following potentially-complete pollutant linkages have been assessed and in accordance with CIRIA C552, a consequence and probability rating has been applied to each potential contamination source to create an overall risk rating. The definitions and methodology are presented in Appendix B and the results are presented in the following table:

ON AND OFF-SITE SOURCES

Potential Source	Pathway	Potential Receptor	Probability	Consequence	Risk Classification	Explanation
Contaminants within the shallow soils associated with use as allotments, historic development, and nearby historic brick kiln, and Made Ground - <i>heavy metals, PAH, TPH, asbestos</i>	Ingestion Dermal Contact Inhalation	End Users - Residents	Low likelihood	Medium	Moderate/Low	On-site contamination of shallow soils considered possible with long term risk to future residents in areas of soft landscaping.
		Nearby Residents	Unlikely	Medium	Low	
		Construction Workers	Low likelihood	Mild	Low	Exposure to maintenance and construction workers can be mitigated by use of appropriate PPE and maintaining good hygiene levels.
	Migration through unsaturated zone, groundwater, drains or service runs	Principal Aquifer	Low likelihood	Mild	Low	There is a Potable Water Supply abstraction located 986m NE of the site and the site is within a Source Protection Zone 2. Due to the low permeability of the overlying superficial deposits is it considered unlikely the Principal aquifer will be at any significant risk in this location.
	Direct Contact	Infrastructure	Unlikely	Medium	Very Low	Sulphate bearing soils are not anticipated Contamination which may affect water pipes is unlikely

An intrusive Phase 2 geoenvironmental investigation and risk assessment will be required to validate this CSM.

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER WORK

Based on the desk study research, the sources, pathways and receptors listed in the CSM are considered to have the potential to be present as complete pollutant linkages, albeit widespread contamination is not anticipated. These have the potential to cause harm to the identified human health receptors.

It is considered possible that the shallow soils may contain elevated levels of PAHs associated with the historic use as an allotment and the nearby historic brick kiln.

There is likely to be a veneer of Made Ground in the southeast of the site associated with historic construction and demolition activities and working of the allotments.

There is a potential for unrecorded backfilled clay pits.

Therefore, Made Ground may be present which may contain low levels of metals, PAHs or potentially asbestos.

Recommendations

It is therefore recommended that an intrusive Phase 2 investigation is undertaken at the site to identify the nature and extent of potential contamination within the shallow soils on the site.

It is recommended that in this investigation that the surface soils and Made Ground, are screened for heavy metals, asbestos, and PAHs as a minimum.

The Phase 2 investigation could combine investigation for geotechnical matters to further explore the ground conditions with reference to shrink swell clays and recommendations for foundations.

The conclusions of this report should be approved by the Local Authority as soon as possible to avoid delays to the development.

REFERENCES

- British Standards Institution (BSI), Site Investigations: Code of Practice, BS 5930:2015+A1:2020, 2020
- BSI, Investigation of Potentially Contaminated Sites: Code of Practice, BS 10175:2011+A2:2017, 2017
- Association of Geotechnical and Geoenvironmental Specialists (AGS), Site Investigation Asbestos Risk Assessment, AGS Interim Guidance, 2013
- CIRIA, Asbestos in soil and made ground: good practice site guide, C765, 2017
- CIRIA, Unexploded Ordnance (UXO), A Guide for the Construction Industry, C681, 2009
- BRE, Radon: Guidance on Protective Measures for New Buildings, BR 211, 2023
- BRE, Reducing Radon: Underground Rooms – Cellars and Basements, Quick Guide 7, 2015
- NHBC, NHBC Standards, Chapter 4.2 Building Near Trees, 2024
- NHBC, NHBC Standards, Chapter 4.1 Land Quality – Managing Ground Conditions, 2024
- Environment Agency, Land contamination: risk management, 2023
<https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>
- CIRIA, Contamination Land Risk Assessment – A Guide to Good Practice, C552, 2001
- BSI, Soil quality – Conceptual site models for potentially contaminated sites, BS EN ISO 21365:2020
- BSI, Soil quality - Assessment of human exposure from ingestion of soil and soil material - Procedure for the estimation of the human bioaccessibility/bioavailability of metals in soil, BS ISO 17924:2018, 2018
- Environment Agency, Remedial Target Methodology, Hydrogeological Risk Assessment for Contaminated Land, 2006
- The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015
- Card G, Wilson S, Mortimer S, A Pragmatic Approach to Ground Gas Risk Assessment, CL:AIRE Research Bulletin RB17, 2012
- CIRIA, Assessing Risks Posed by Hazardous Ground Gases to Buildings, C665, 2007
- BSI, Guidance on investigations for ground gases – Permanent gases and Volatile Organic Compounds (VOCs), BS 8576:2013, 2013
- BSI, Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings, BS 8485:2015+A1:2019, 2019
- CIRIA, Engineering in Chalk, C574, 2002
- Edmonds C N, Predicting natural cavities in chalk, Geological Society Engineering Group Special Publication No, 18, BGS, 2001
- CIRIA, The SuDS Manual, C753, 2015

BRE=Building Research Establishment. BSI=British Standards Institution. AGS=Association of Geotechnical and Geoenvironmental Specialists CIRIA=Construction Industry Research and Information Association. EA=Environment Agency. NHBC=National House Building Council. BGS=British Geological Survey.

APPENDIX A PLANS & PHOTOGRAPHS



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Key	
	Approximate Site Boundary
Features of Interest	
	Approximate area of suspected demolished building/structure
	Approximate location of small pond



Listers Geotechnical Consultants Ltd www.listersgeotechnics.co.uk Tel: 01327 860060

Title: Existing Site Layout with Features of Interest

Site: Heath Road, Breachwood Green, Hertfordshire
SG4 8BW

Scale: NTS

Job Number: 24.07.031

Drawn By: NA



Showing the site looking northwest



Showing the site looking southeast

Site Photographs

Report:
24.07.031



Showing the site looking northeast



Showing the site looking southwest

Site Photographs

Report:
24.07.031



Showing the Pond in the southeast of the site



Showing the location of the former suspected greenhouse in the northwest of the site

Site Photographs

Report:
24.07.031

APPENDIX B

CONTAMINATION RISK ASSESSMENT

Contaminated Land Risk Assessment – Definition of Methodology

The Contaminated Land Risk Assessment methodology followed in this report is based on Environment Agency's (EA) online guidance, Land Contamination: Risk Management (LCRM), published in June 2019. The new guidance is based upon the principles of the EA's CLR11 guidance, Model procedures for the management of land contamination, published in 2004.

The preliminary Conceptual Site Model (CSM) has been assessed using the methodology set out in CIRIA C552, Contaminated Land Risk Assessment - A Guide to Good Practice, published in 2001, as detailed below.

Risk evaluation determines the magnitude of risks present by assessing the likelihood of a particular risk being present alongside the severity of the consequence, should that event occur. The overall risk classification is a combination of the two and provides a qualitative assessment upon which to base any further work or remedial measures, where deemed necessary.

Where complete pollutant linkages are present, the probability of a contamination risk occurring at the site has been classified in accordance with the terms listed and defined in the table below.

Classification	Definition of Probability
High Likelihood	An event appears very likely in the short term and almost inevitable in the long term; or there is evidence at the receptor that harm or pollution is occurring.
Likely	It is probable that an event will occur, however, the event is not inevitable. It is possible in the short term and is likely over the long term.
Low Likelihood	Circumstances are possible under which an event could occur. However, it is uncertain that the event would occur even over a longer period and even less likely in the short term.
Unlikely	Circumstances are such that it is improbable that an event would occur even in the very long term.

The magnitude of the consequence of a contamination event occurring at this site is classified in accordance with the definitions listed in the following table. The classification of the consequence does not take into account the probability of the consequences being realised.

Classification	Definition of Consequence	Examples
Severe	Short term (acute) risk to human health likely to result in “significant harm” as defined by the Environment protection Act (1990), Part IIA. Short term risk of pollution of controlled waters. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion causing building collapse (can also equate to a short-term human health risk if buildings are occupied.).
Medium	Chronic damage to Human Health (“significant harm”). Pollution of controlled waters. A significant change in a particular ecosystem, or organism forming part of such ecosystem.	Concentrations of contaminants from site exceeding generic or site-specific screening criteria. Leaching of contaminants into a major or minor aquifer. Death of species within a designated nature reserve.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings/structures/services or the environment	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy. (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by measures such as protective clothing etc). Easily reparable effects of damage to buildings, structures and services	The presence of contaminants at such concentration that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

Once the probability and consequence of each pathway has been classified, the potential overall risk classification can be evaluated using the following matrix.

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

The definitions of the risk categories provided in CIRIA C552, together with actions that are likely to be necessary, are presented below.

Classification	Definition of Risk and Likely Actions Required
Very high Risk	• High probability that severe harm could arise or that severe harm is already occurring • This risk, if realised, is likely to result in a substantial liability • Urgent investigation and remediation are likely to be required
High Risk	• Harm is likely to arise • The risk, if realised, is likely to present a substantial liability • Urgent investigation is required and remediation may be necessary in the short term and likely over the longer term
Moderate Risk	• It is possible that harm could arise, however, it is unlikely that any harm would be severe and more likely it would be relatively mild • Investigation is likely to be required to clarify the risk and determine potential liability • Some remediation may be required in the longer term
Low Risk	• It is possible that harm could arise, but is likely that this harm, if realised, would be mild at worst
Very low Risk	• There is a low possibility that harm could arise • If realised, such harm is not likely to be severe

Reference:

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

APPENDIX C

DESK STUDY INFORMATION

Site Details:

Lane north of the The Pheasantry, Heath Road, Breachwood Green, Hitchin, SG4 8BW

Client Ref: 24.07.031/765
Report Ref: GS-65U-UAU-RGI-OVI
Grid Ref: 514886, 222428

Map Name: County Series

Map date: 1881

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1881
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 Edition N/A
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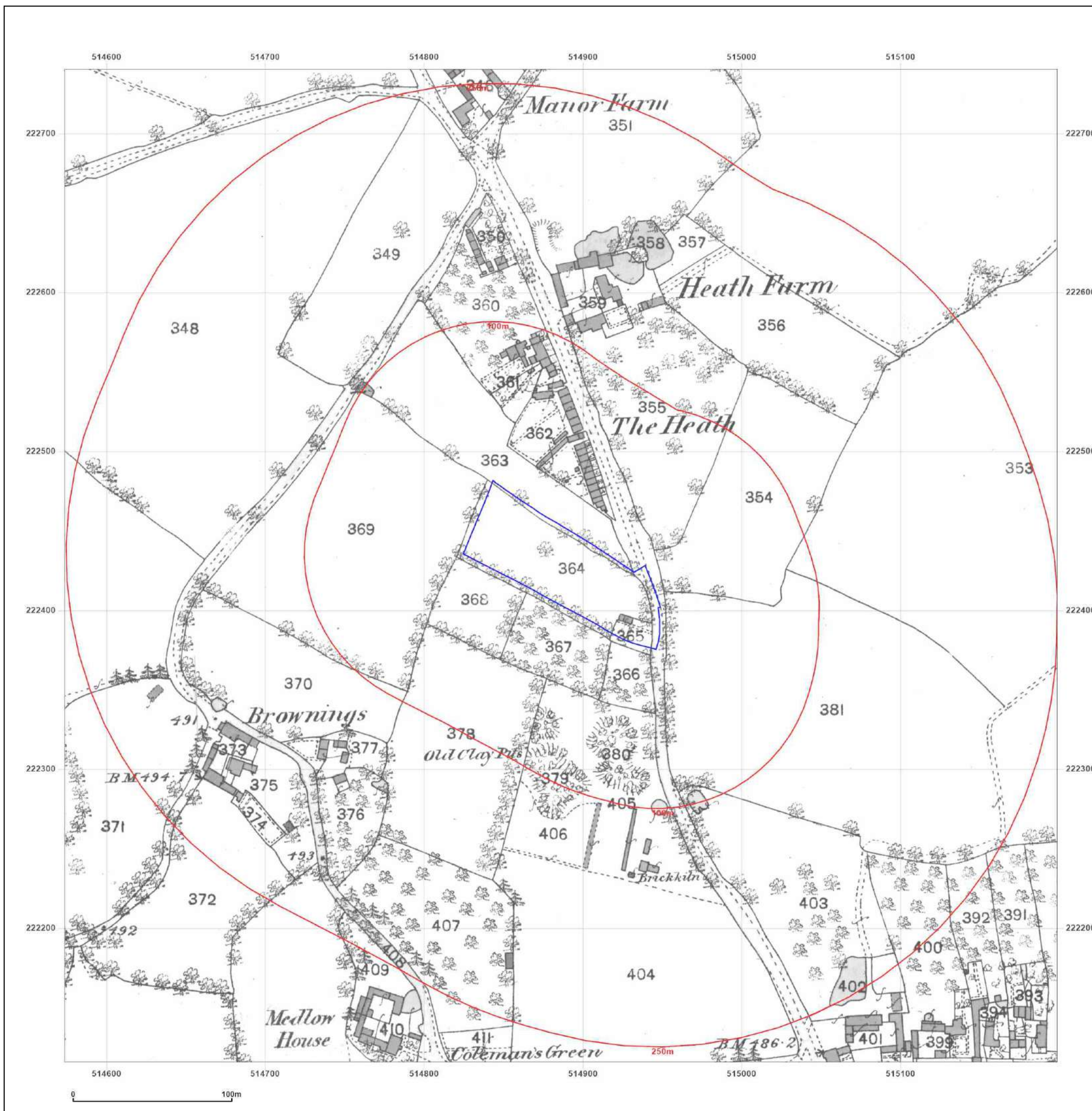


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Report Ref: GS-65U-UAU-RGI-OVI
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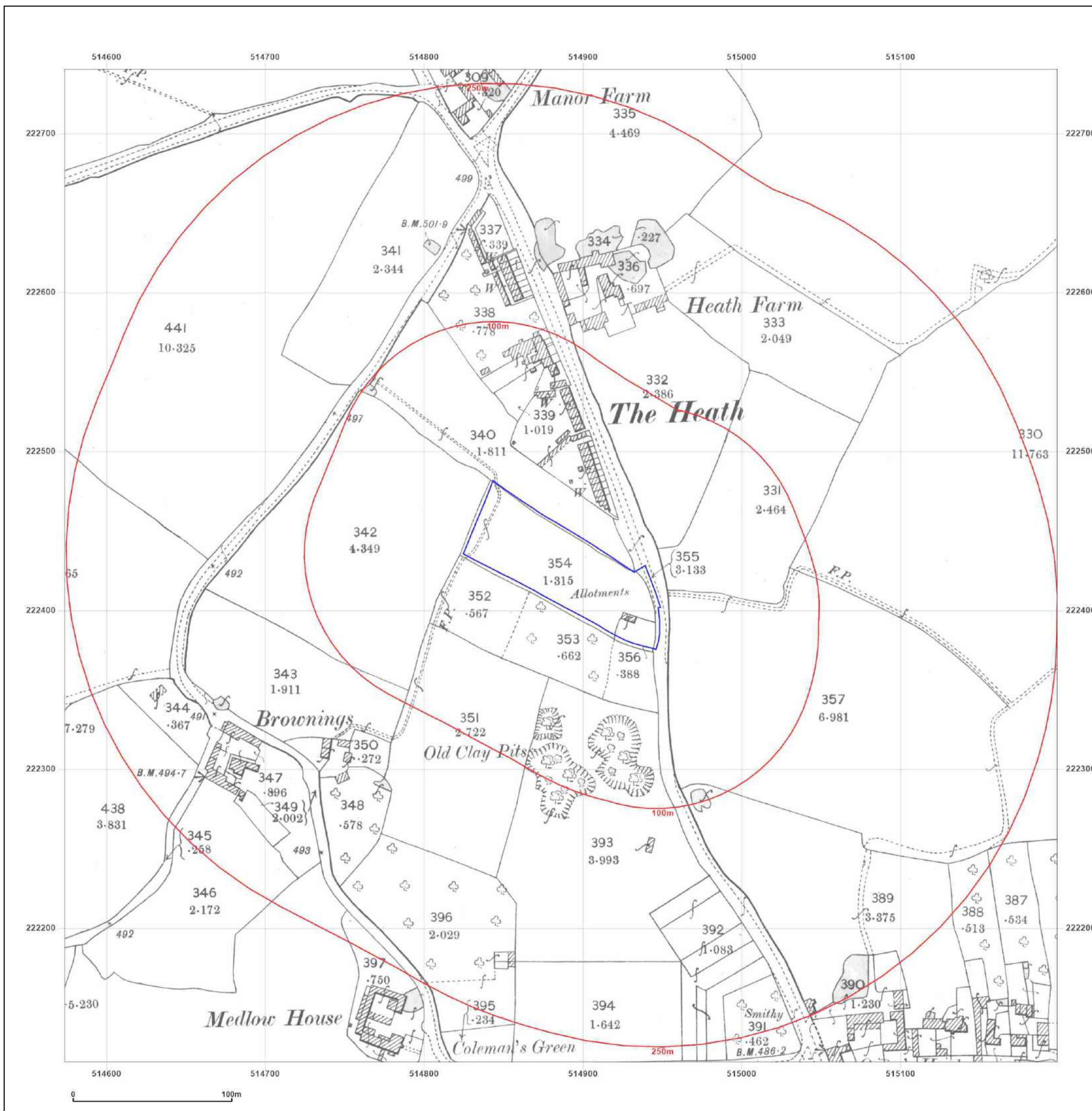


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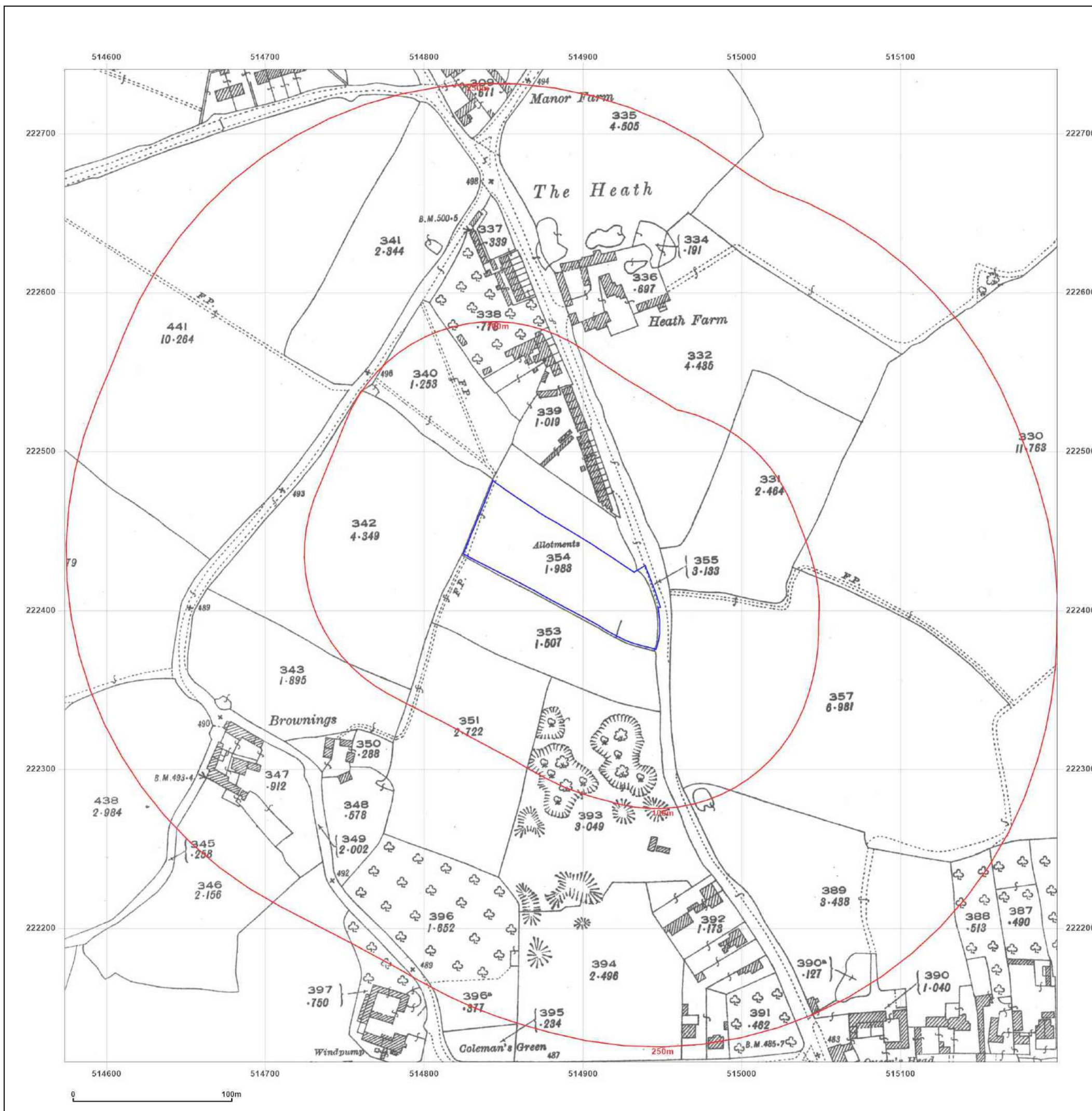


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Report Ref: GS-65U-UAU-RGI-OVI
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Revised N/A
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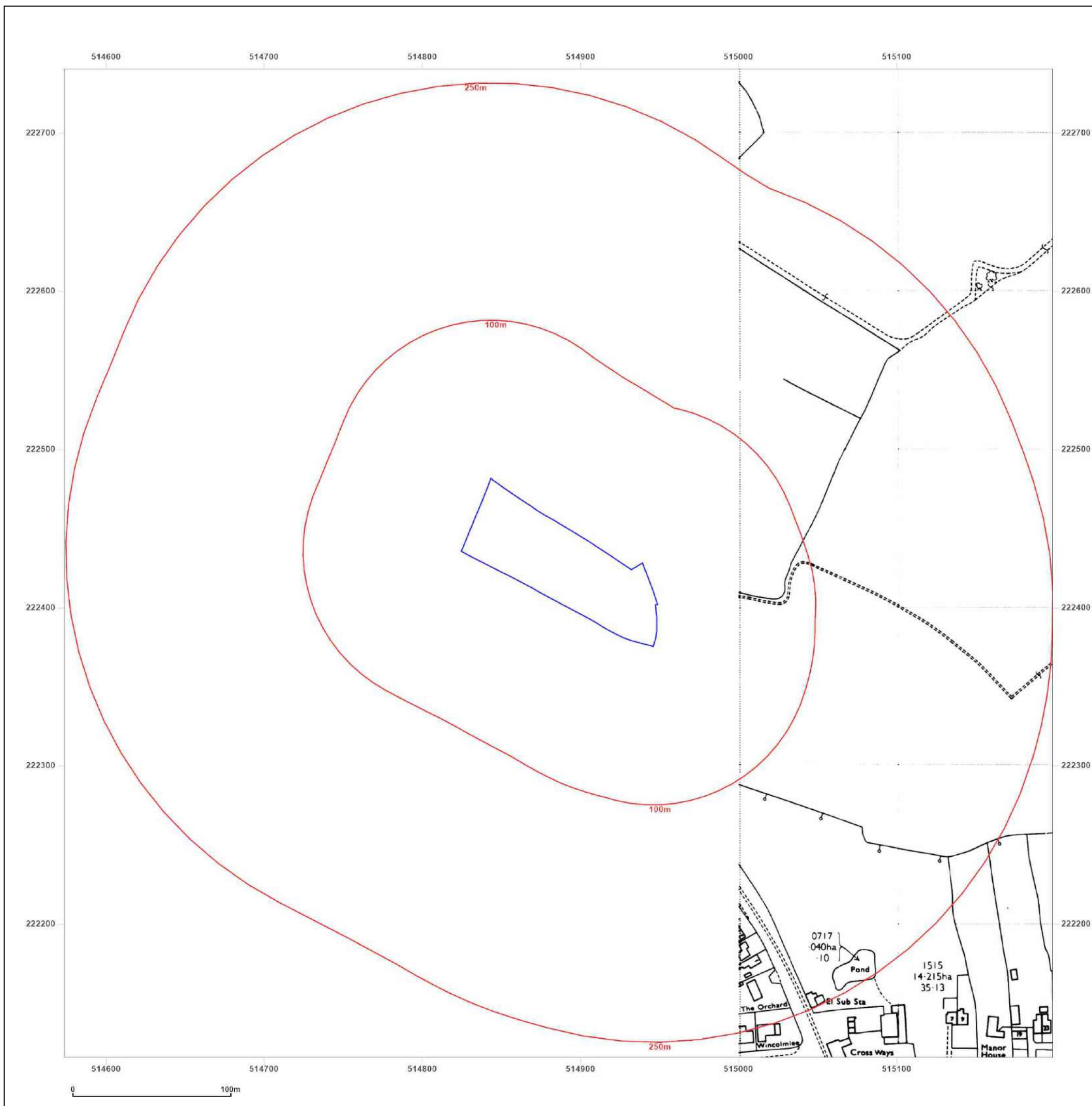


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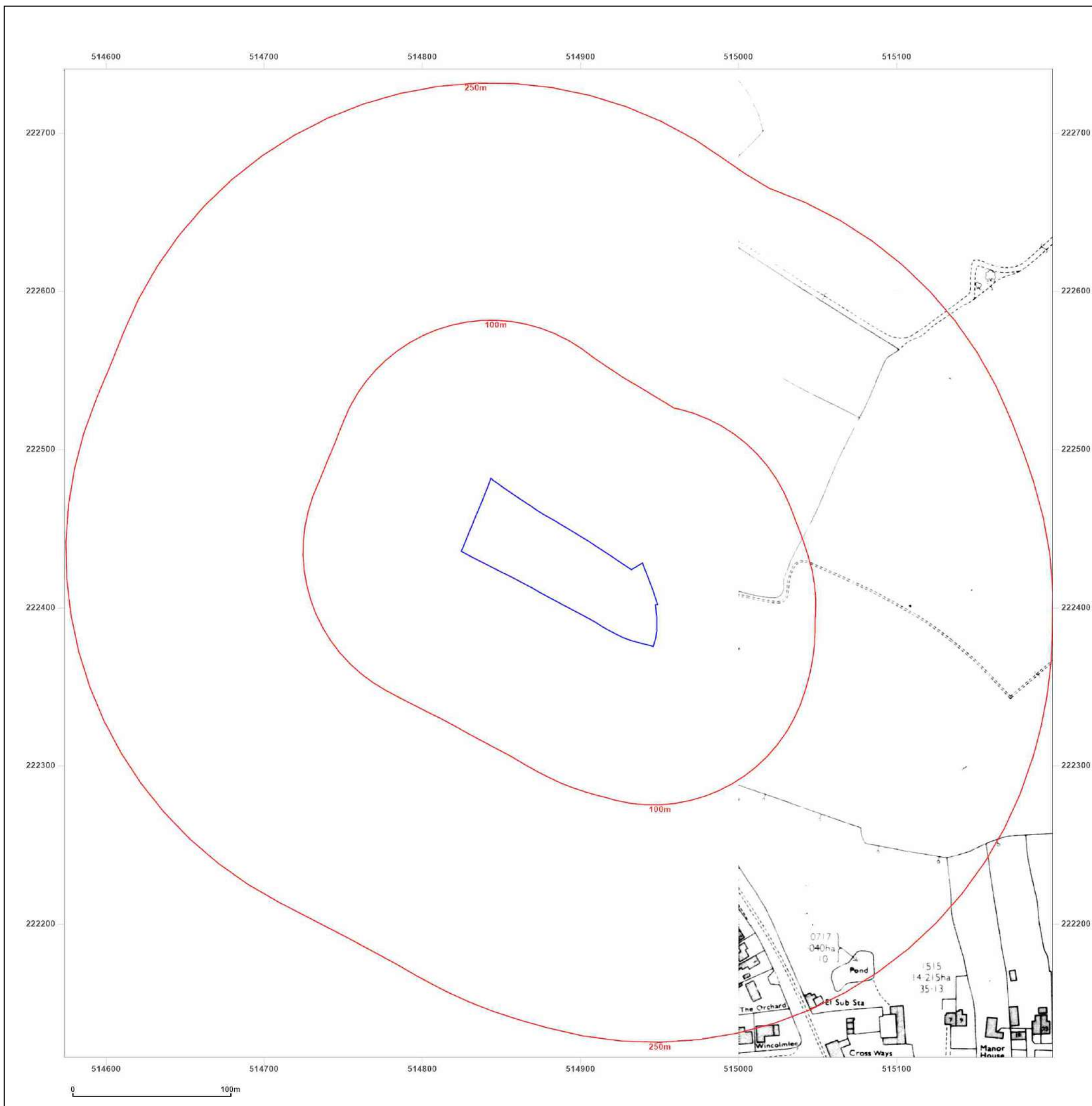


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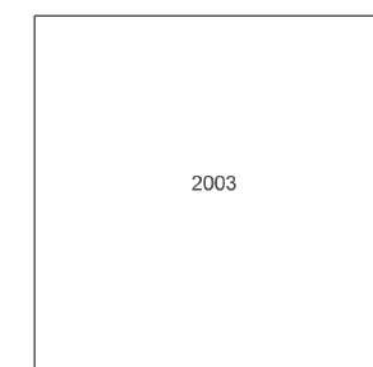
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Report Ref: GS-65U-UAU-RGI-OVI
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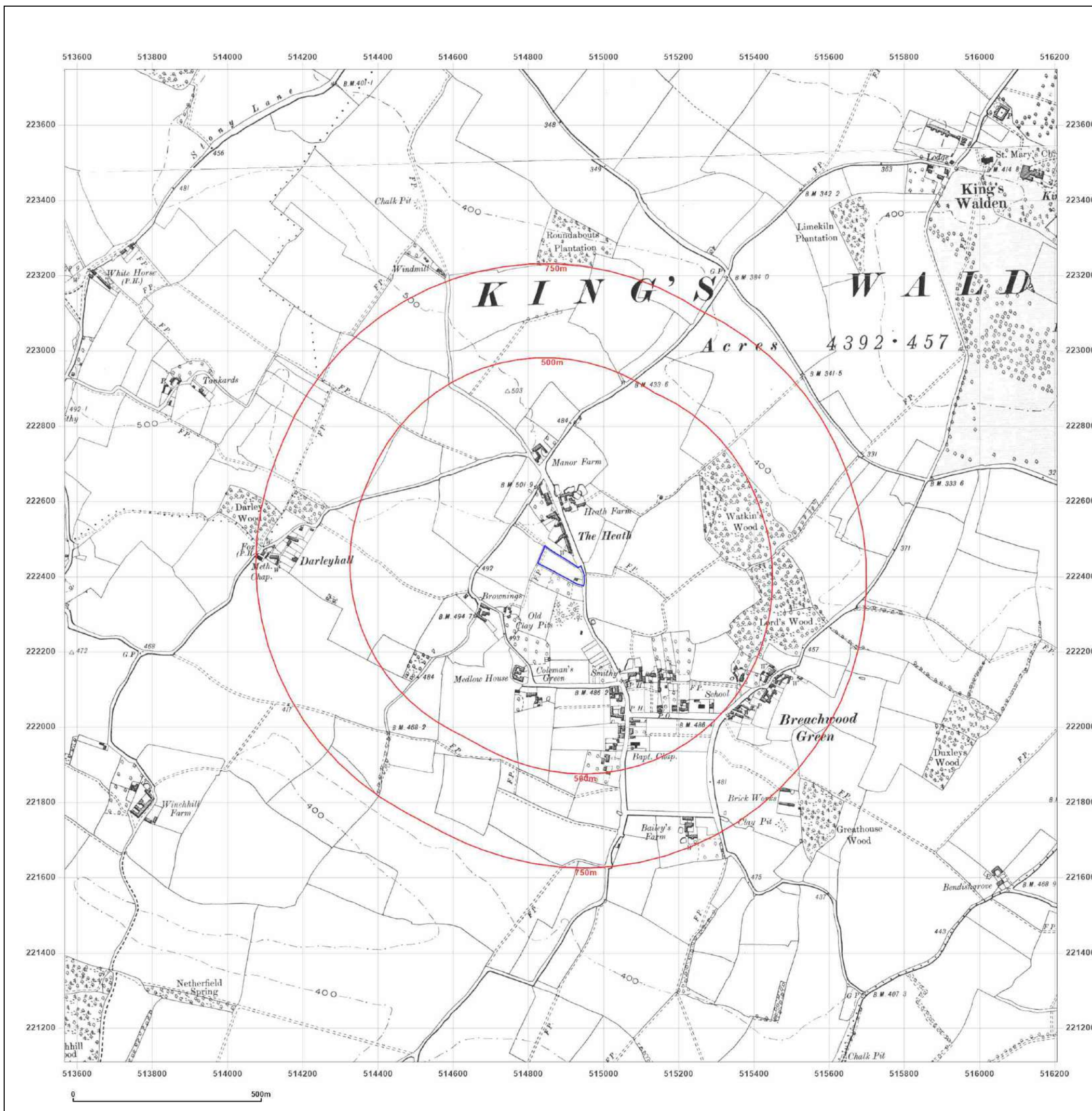


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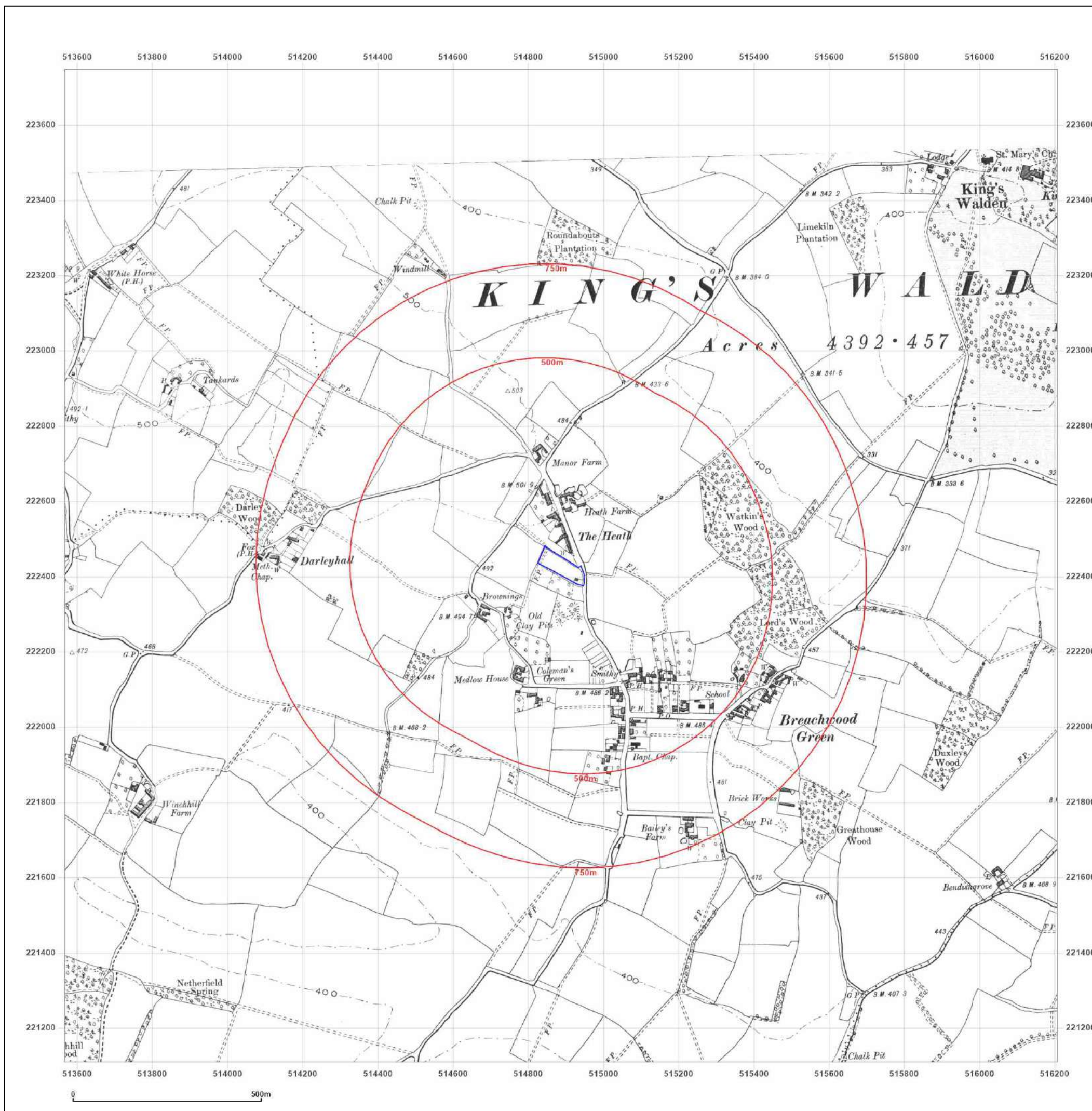


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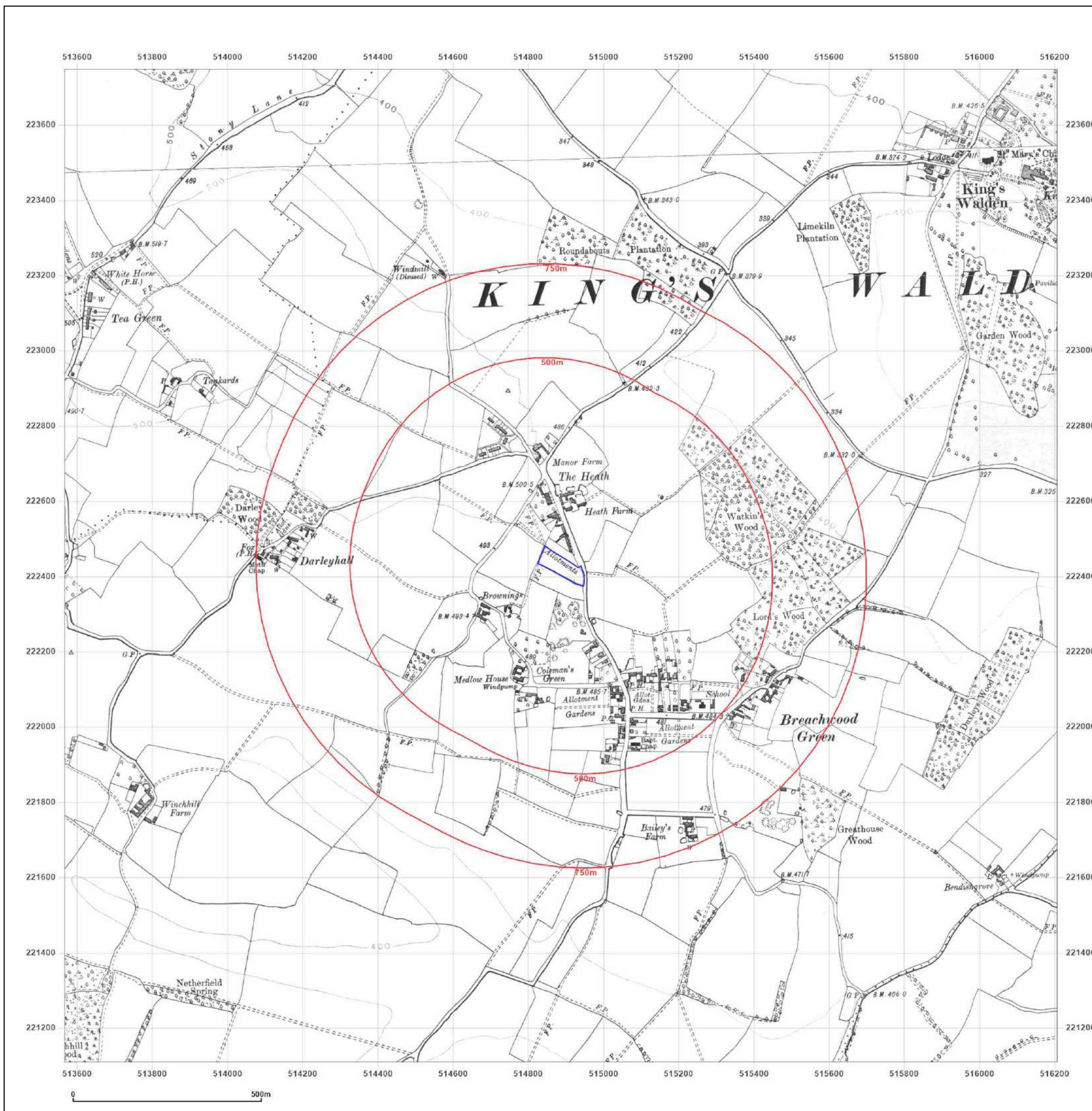


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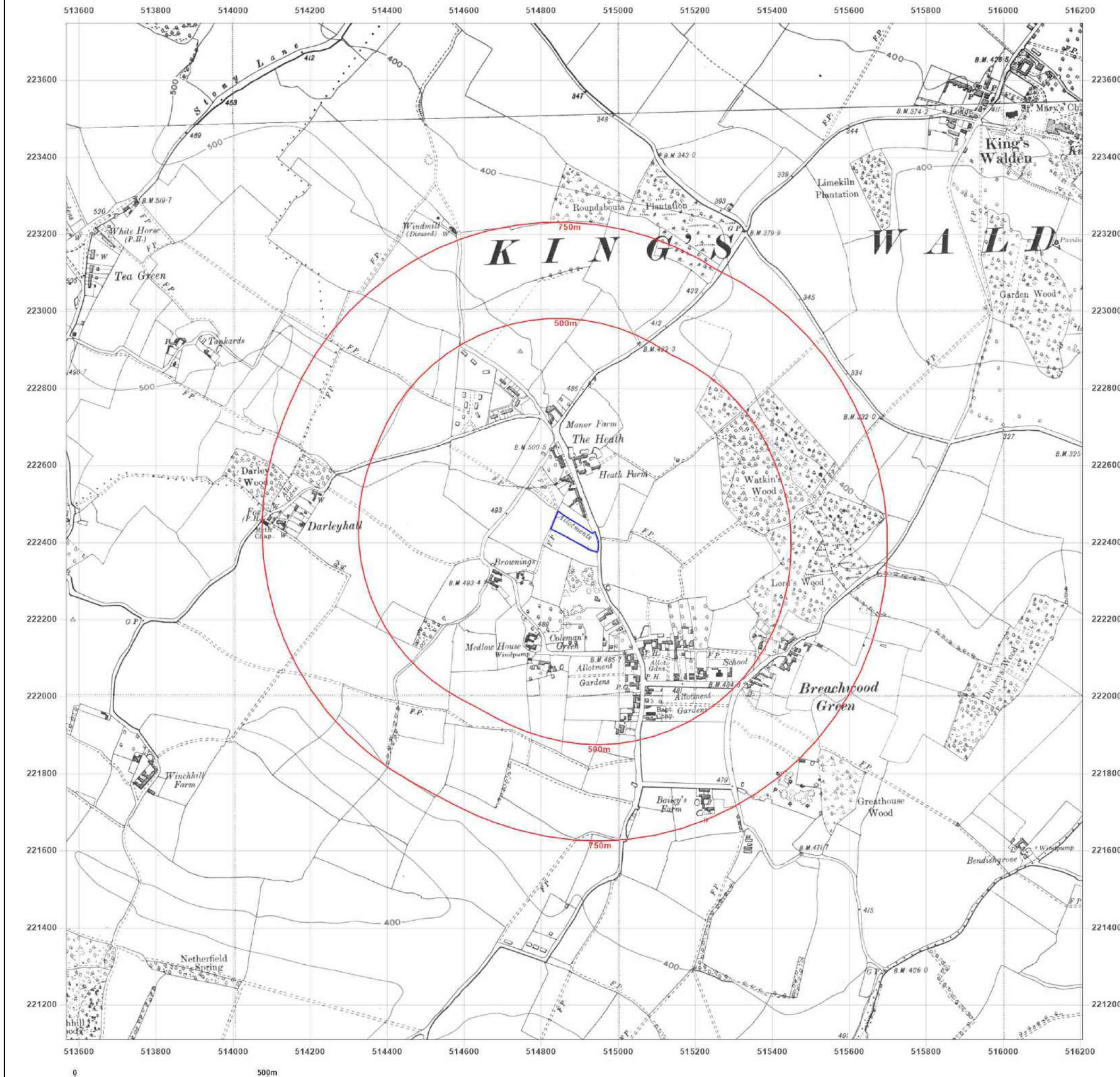


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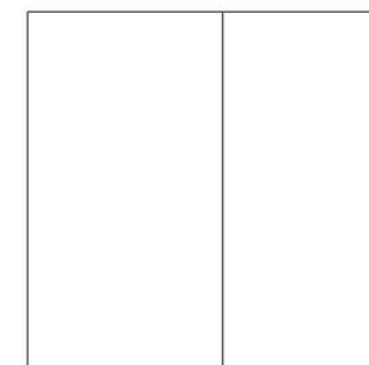
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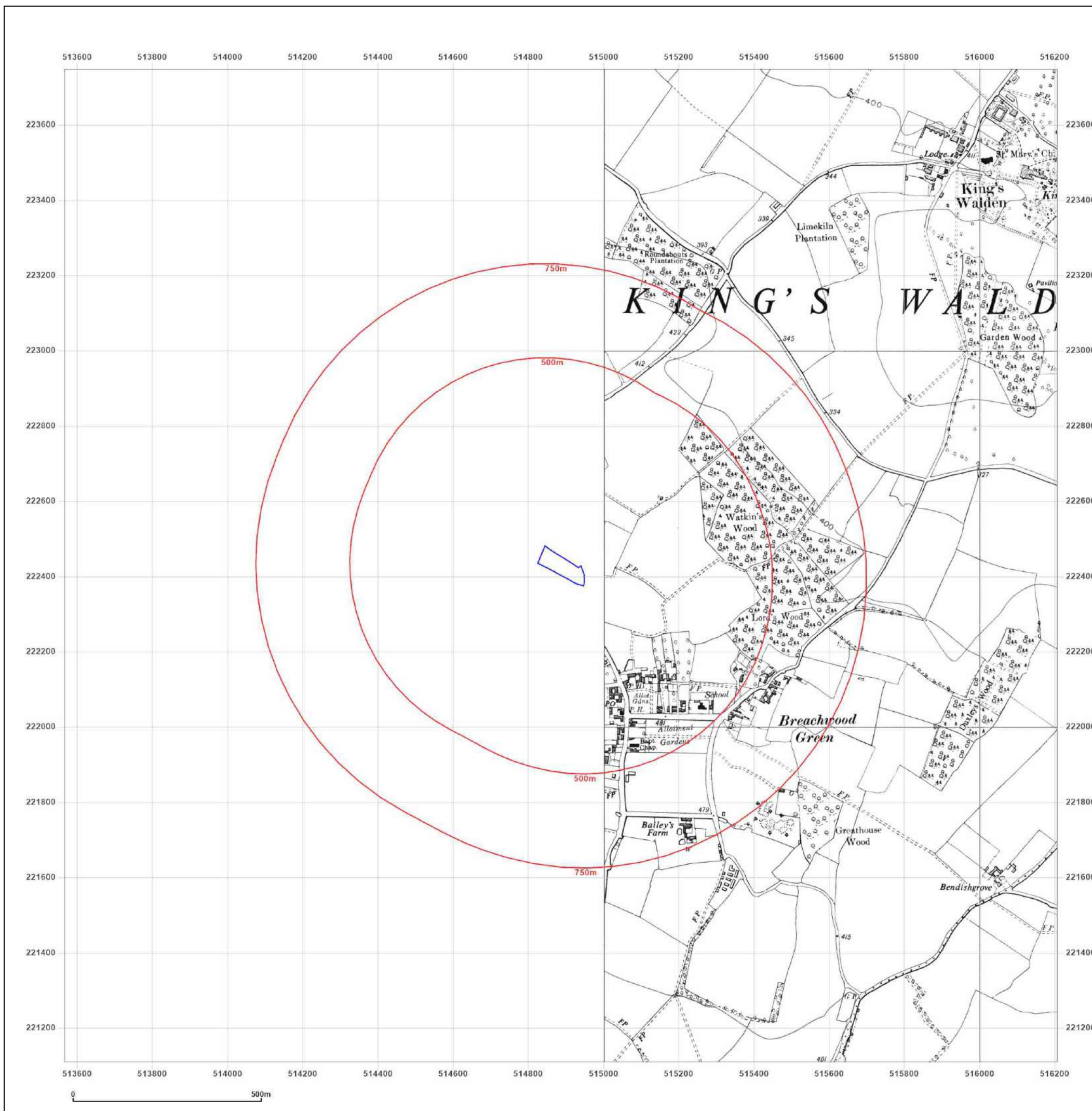


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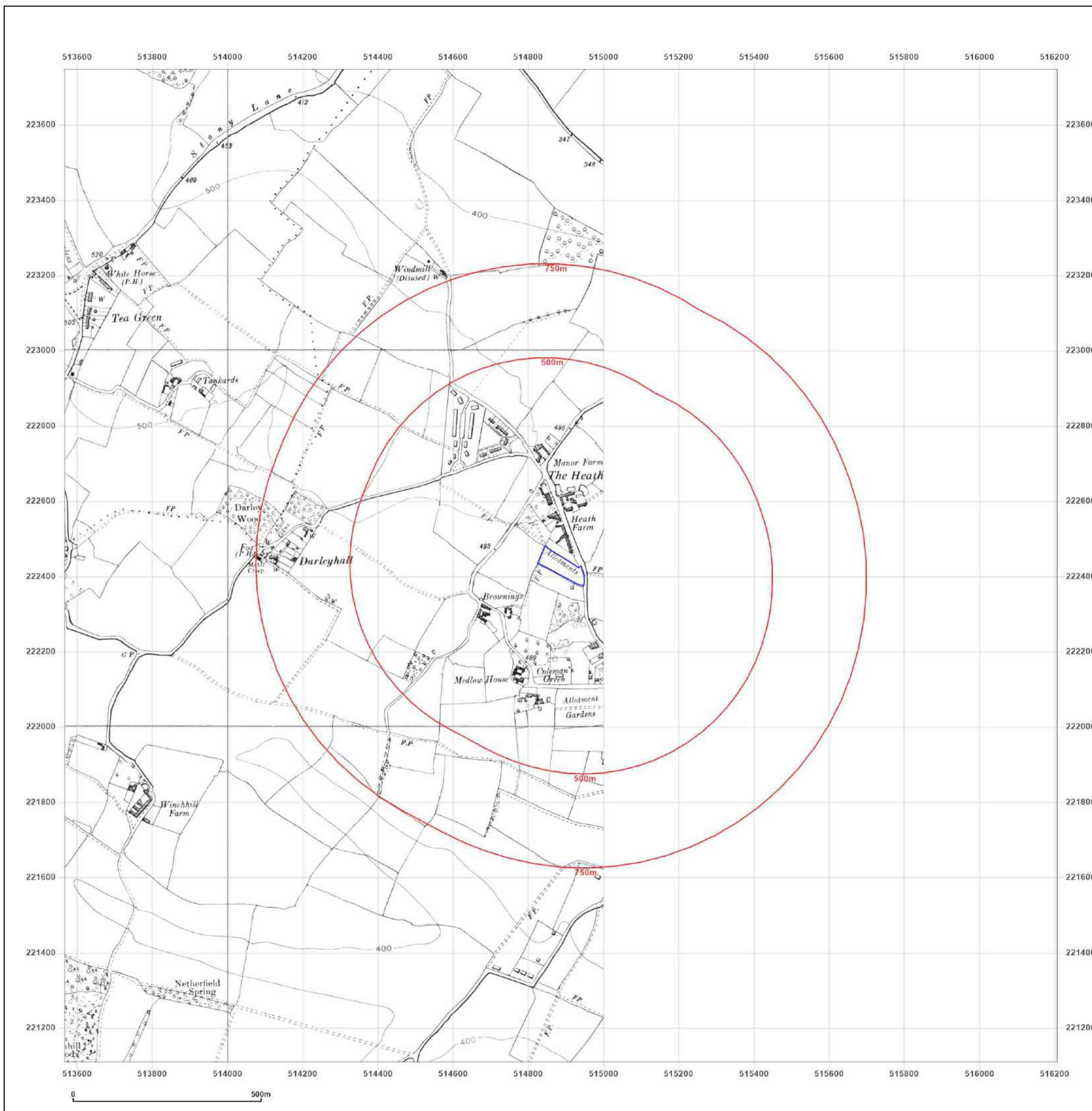


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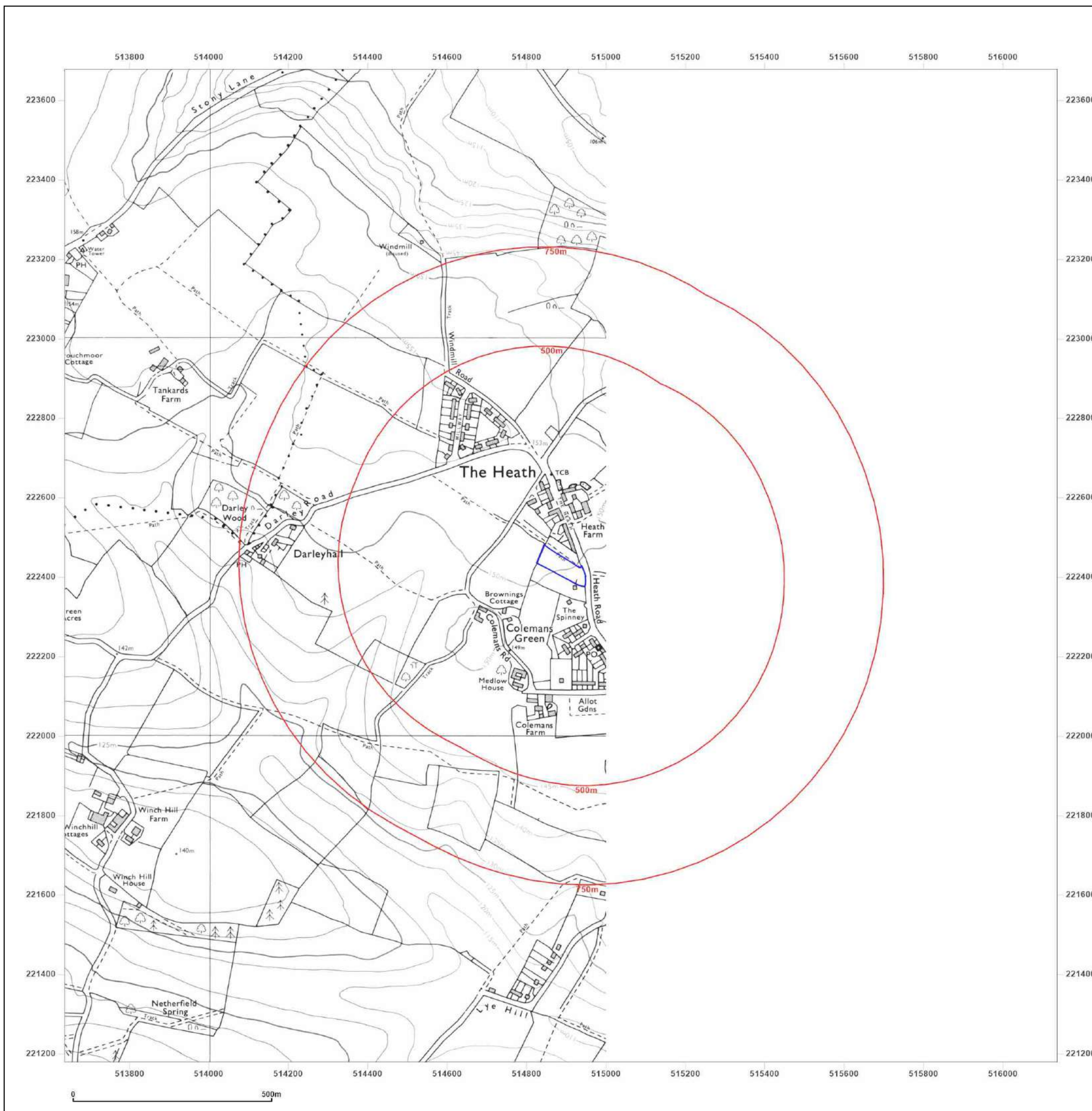


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Site Details:

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Client Ref: 24.07.031/765
Report Ref: GS-65U-UAU-RGI-OVI
Grid Ref: 514886, 222428

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

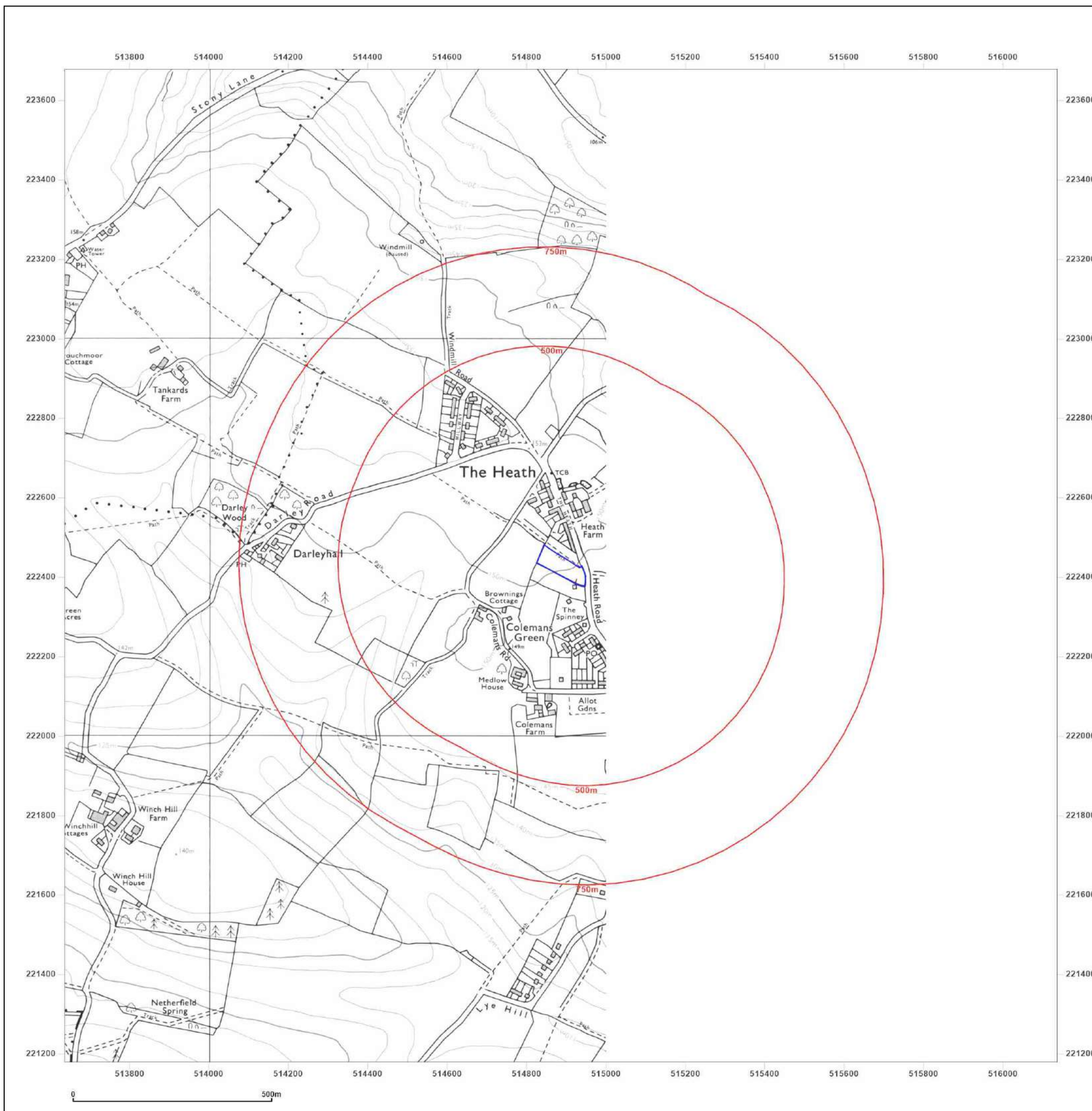


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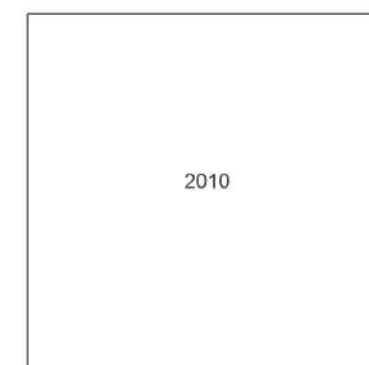
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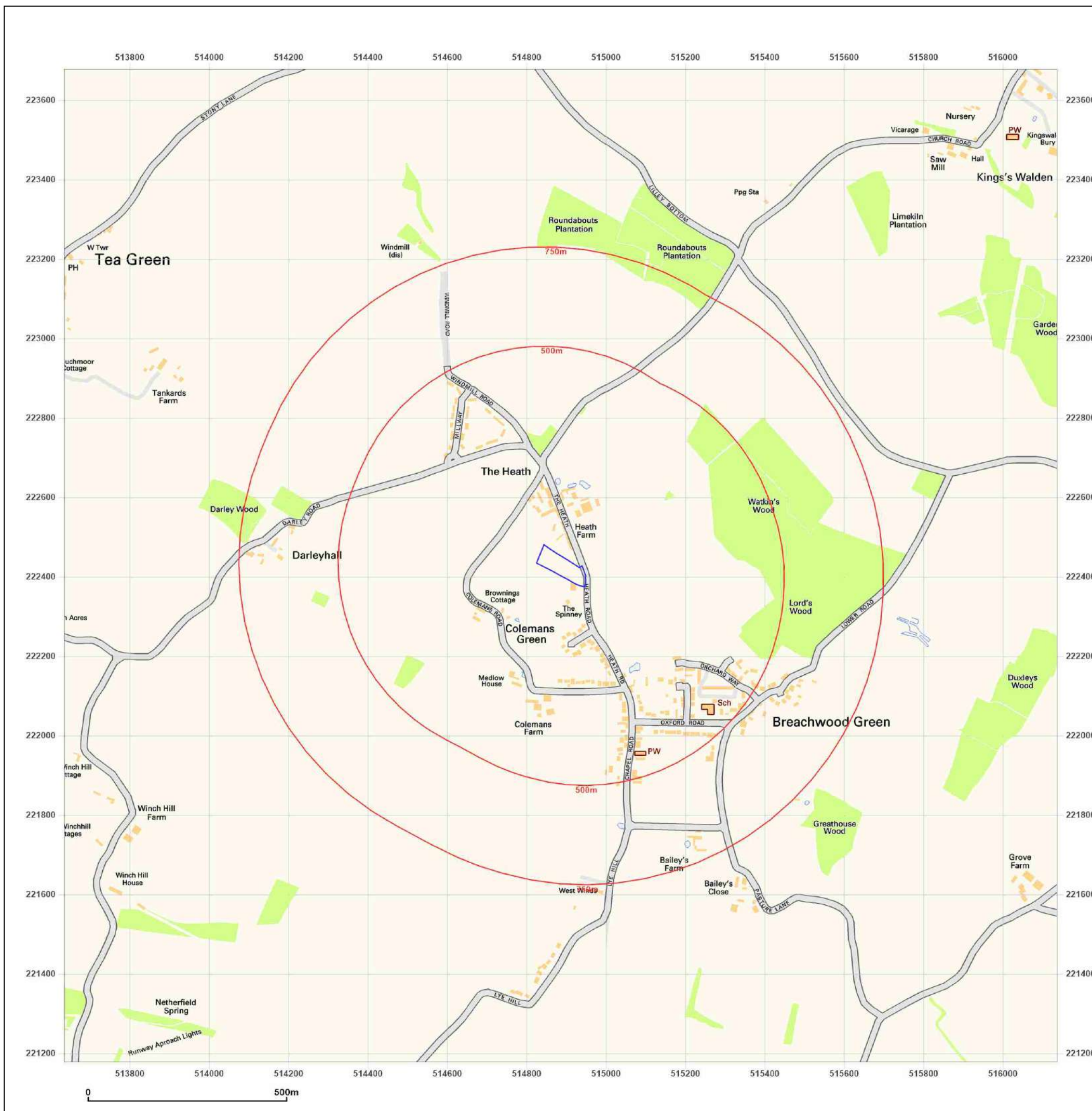


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Site Details:

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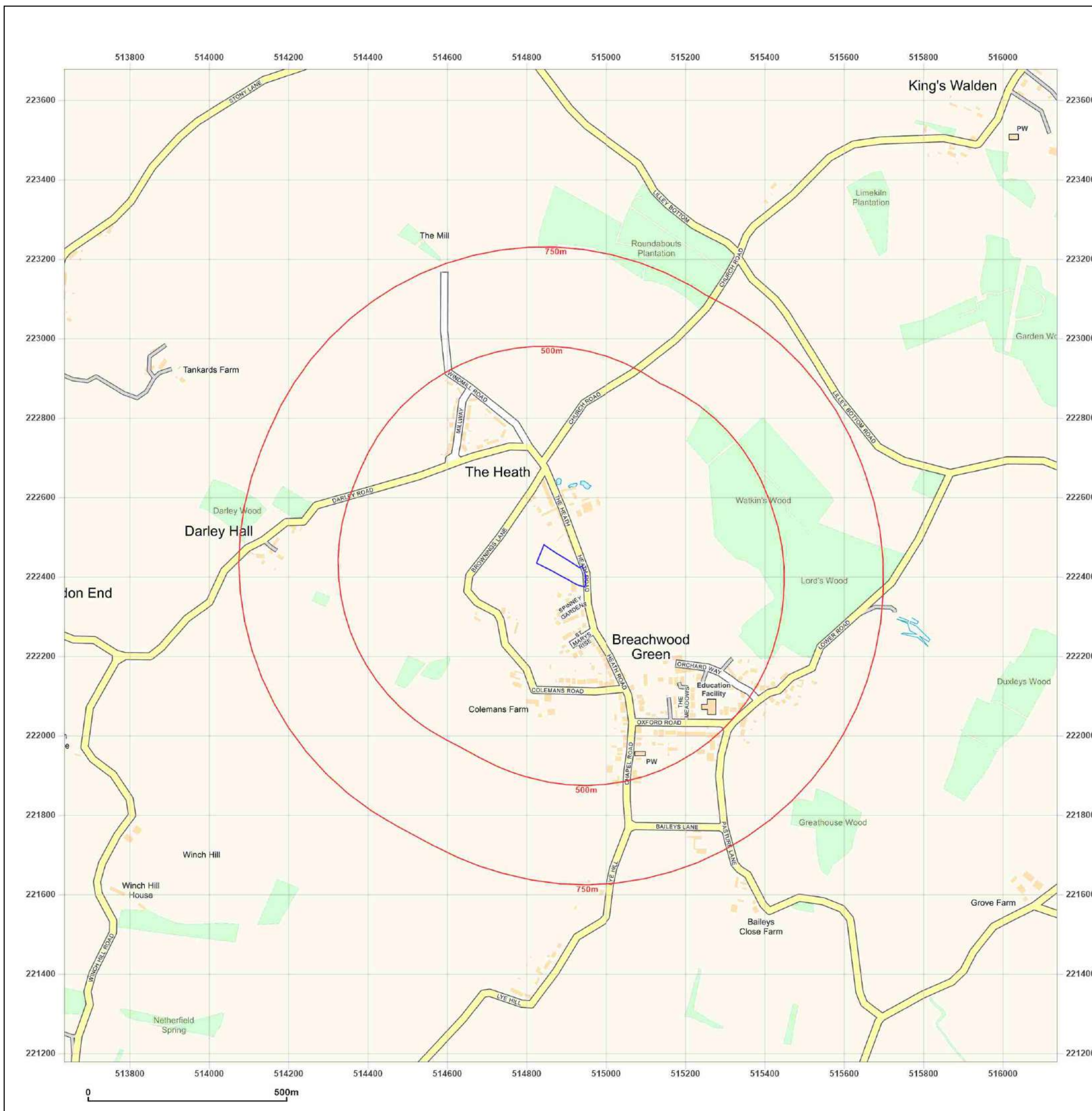


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Lane north of the The Pheasantry, Heath Road, Breachwood Green, Hitchin, SG4 8BW

Order Details

Date: 17/07/2024
Your ref: 24.07.031/765
Our Ref: GS-IZJ-CCT-5IU-WD5

Site Details

Location: 514888 222426
Area: 0.57 ha
Authority: [North Hertfordshire District Council](#) ↗



Summary of findings

[p. 2 >](#) **Aerial image**

[p. 9 >](#)

OS MasterMap site plan

[p.14 >](#) [Insight User Guide](#) ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	4	9	5	-
16 >	1.2 >	Historical tanks >	0	0	0	3	-
17 >	1.3 >	Historical energy features >	0	0	1	4	-
17	1.4	Historical petrol stations	0	0	0	0	-
18 >	1.5 >	Historical garages >	0	0	1	0	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	0	6	10	5	-
20 >	2.2 >	Historical tanks >	0	0	0	3	-
21 >	2.3 >	Historical energy features >	0	0	2	4	-
21	2.4	Historical petrol stations	0	0	0	0	-
21 >	2.5 >	Historical garages >	0	0	2	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24 >	3.7 >	Waste exemptions >	0	1	0	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
26 >	4.1 >	Recent industrial land uses >	0	1	1	-	-
27	4.2	Current or recent petrol stations	0	0	0	0	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-



27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
29 >	4.13 >	<u>Licensed Discharges to controlled waters ></u>	0	0	2	2	-
30	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.15	Pollutant release to public sewer	0	0	0	0	-
30	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
30	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
31	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
31	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
32 >	5.1 >	<u>Superficial aquifer ></u>	Identified (within 500m)				
34 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
36 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
37 >	5.4 >	<u>Groundwater vulnerability- soluble rock risk ></u>	Identified (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38 >	5.6 >	<u>Groundwater abstractions ></u>	0	0	0	0	6
40	5.7	Surface water abstractions	0	0	0	0	0
40 >	5.8 >	<u>Potable abstractions ></u>	0	0	0	0	1
41 >	5.9 >	<u>Source Protection Zones ></u>	1	0	1	0	-
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
42	6.1	Water Network (OS MasterMap)	0	0	0	-	-



42 >	6.2 >	Surface water features >	0	0	3	-	-
43 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
43 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
44 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
45	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
46	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
46	7.5	Flood Storage Areas	0	0	0	-	-
47	7.6	Flood Zone 2	None (within 50m)				
47	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
48	8.1	Surface water flooding	Negligible (within 50m)				
Page	Section	Groundwater flooding >					
49 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
50	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
51	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
51	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
51	10.4	Special Protection Areas (SPA)	0	0	0	0	0
51	10.5	National Nature Reserves (NNR)	0	0	0	0	0
52	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
52 >	10.7 >	Designated Ancient Woodland >	0	0	0	2	5
52	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
53	10.10	Marine Conservation Zones	0	0	0	0	0
53 >	10.11 >	Green Belt >	1	0	0	0	0
53	10.12	Proposed Ramsar sites	0	0	0	0	0



54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
54	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
54	10.15	Nitrate Sensitive Areas	0	0	0	0	0
54 >	10.16 >	Nitrate Vulnerable Zones >	2	0	0	0	2
56 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
57	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
58	11.1	World Heritage Sites	0	0	0	-	-
59	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
59	11.3	National Parks	0	0	0	-	-
59 >	11.4 >	Listed Buildings >	0	0	4	-	-
60	11.5	Conservation Areas	0	0	0	-	-
60	11.6	Scheduled Ancient Monuments	0	0	0	-	-
60	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
61 >	12.1 >	Agricultural Land Classification >	Grade 3 (within 250m)				
62	12.2	Open Access Land	0	0	0	-	-
62 >	12.3 >	Tree Felling Licences >	0	0	3	-	-
62	12.4	Environmental Stewardship Schemes	0	0	0	-	-
62	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
64 >	13.1 >	Priority Habitat Inventory >	0	1	0	-	-
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
66 >	14.1 >	10k Availability >	Identified (within 500m)				
67	14.2	Artificial and made ground (10k)	0	0	0	0	-
68 >	14.3 >	Superficial geology (10k) >	1	0	1	2	-

69	14.4	Landslip (10k)	0	0	0	0	-
70 >	14.5 >	Bedrock geology (10k) >	1	0	1	2	-
71	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
72 >	15.1 >	50k Availability >	Identified (within 500m)				
73	15.2	Artificial and made ground (50k)	0	0	0	0	-
73	15.3	Artificial ground permeability (50k)	0	0	-	-	-
74 >	15.4 >	Superficial geology (50k) >	1	0	0	2	-
75 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
75	15.6	Landslip (50k)	0	0	0	0	-
75	15.7	Landslip permeability (50k)	None (within 50m)				
76 >	15.8 >	Bedrock geology (50k) >	1	0	0	2	-
77 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
77	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
78 >	16.1 >	BGS Boreholes >	0	0	3	-	-
Page	Section	Natural ground subsidence >					
80 >	17.1 >	Shrink swell clays >	Low (within 50m)				
81 >	17.2 >	Running sands >	Negligible (within 50m)				
82 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
83 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
84 >	17.5 >	Landslides >	Very low (within 50m)				
85 >	17.6 >	Ground dissolution of soluble rocks >	Very low (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
87 >	18.1 >	BritPits >	0	0	1	0	-
88 >	18.2 >	Surface ground workings >	0	6	23	-	-
89	18.3	Underground workings	0	0	0	0	0
89	18.4	Underground mining extents	0	0	0	0	-
90	18.5	Historical Mineral Planning Areas	0	0	0	0	-



90 >	18.6 >	Non-coal mining >	1	0	1	0	0
90	18.7	JPB mining areas	None (within 0m)				
91	18.8	The Coal Authority non-coal mining	0	0	0	0	-
91	18.9	Researched mining	0	0	0	0	-
91	18.10	Mining record office plans	0	0	0	0	-
91	18.11	BGS mine plans	0	0	0	0	-
92	18.12	Coal mining	None (within 0m)				
92	18.13	Brine areas	None (within 0m)				
92	18.14	Gypsum areas	None (within 0m)				
92	18.15	Tin mining	None (within 0m)				
92	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes >	On site	0-50m	50-250m	250-500m	500-2000m
93	19.1	Natural cavities	0	0	0	0	-
94 >	19.2 >	Mining cavities >	0	0	0	0	1
94	19.3	Reported recent incidents	0	0	0	0	-
94	19.4	Historical incidents	0	0	0	0	-
95	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
96 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
98 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	1	-	-	-
98	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
98	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
99	22.1	Underground railways (London)	0	0	0	-	-
99	22.2	Underground railways (Non-London)	0	0	0	-	-
99	22.3	Railway tunnels	0	0	0	-	-
99	22.4	Historical railway and tunnel features	0	0	0	-	-
99	22.5	Royal Mail tunnels	0	0	0	-	-



100	22.6	Historical railways	0	0	0	-	-
100	22.7	Railways	0	0	0	-	-
100	22.8	Crossrail 1	0	0	0	0	-
100	22.9	Crossrail 2	0	0	0	0	-
100	22.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 15/06/2022

Site Area: 0.57ha



Recent site history - 2019 aerial photograph



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Capture Date: 14/09/2019

Site Area: 0.57ha



Recent site history - 2014 aerial photograph



Capture Date: 01/06/2014

Site Area: 0.57ha



Recent site history - 2010 aerial photograph



Capture Date: 27/04/2010

Site Area: 0.57ha



Recent site history - 1999 aerial photograph



Capture Date: 27/05/1999

Site Area: 0.57ha



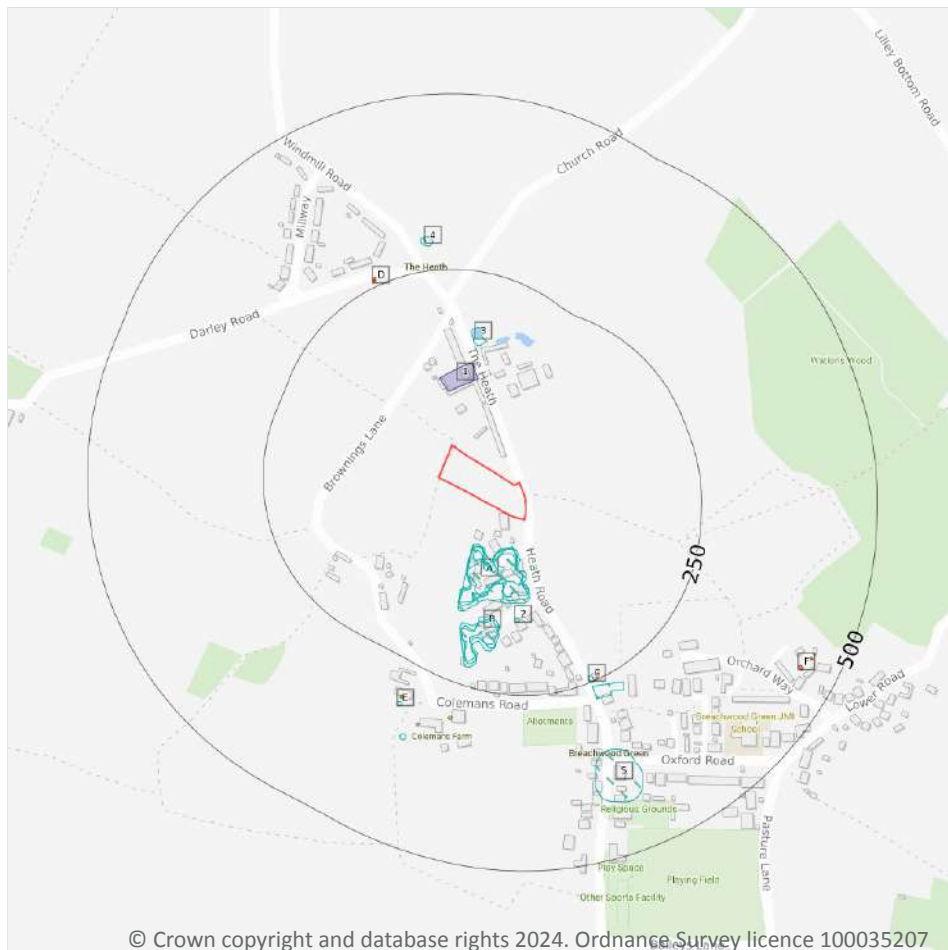
OS MasterMap site plan



Site Area: 0.57ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

18

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
A	42m SE	Old Clay Pits	1899	2111146



ID	Location	Land use	Dates present	Group ID
A	42m SE	Unspecified Pits	1925 - 1947	2133707
A	44m SE	Unspecified Pit	1884	2087538
A	45m SE	Unspecified Pits	1960	2107177
A	52m S	Unspecified Pits	1925	2121807
A	57m S	Unspecified Pit	1884	2087540
A	75m S	Unspecified Pit	1884	2087539
2	140m S	Brick Kiln	1884	2092276
B	142m S	Unspecified Pits	1925 - 1947	2096996
B	146m S	Unspecified Pits	1960	2139179
3	146m N	Unspecified Pit	1884	2087537
B	151m S	Unspecified Pits	1925	2156113
C	241m SE	Smithy	1899	2089388
C	256m SE	Smithy	1899	2089390
4	285m N	Unspecified Pit	1884	2087536
E	308m S	Wind Pump	1925	2073227
E	346m S	Tank	1925	2089966
5	349m SE	Smithy	1884	2089312

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

3

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
E	297m S	Unspecified Tank	1993	365372



ID	Location	Land use	Dates present	Group ID
E	298m S	Unspecified Tank	1972	365368
E	323m S	Unspecified Tank	1924	365362

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

5

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
C	242m SE	Electricity Substation	1972 - 1993	257594
D	257m NW	Electricity Substation	1993	257676
D	259m NW	Electricity Substation	1972	263939
F	443m SE	Electricity Substation	1993	247679
F	451m SE	Electricity Substation	1972	247666

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.



1.5 Historical garages

Records within 500m

1

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
1	76m N	Garage	1972 - 1993	79773

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

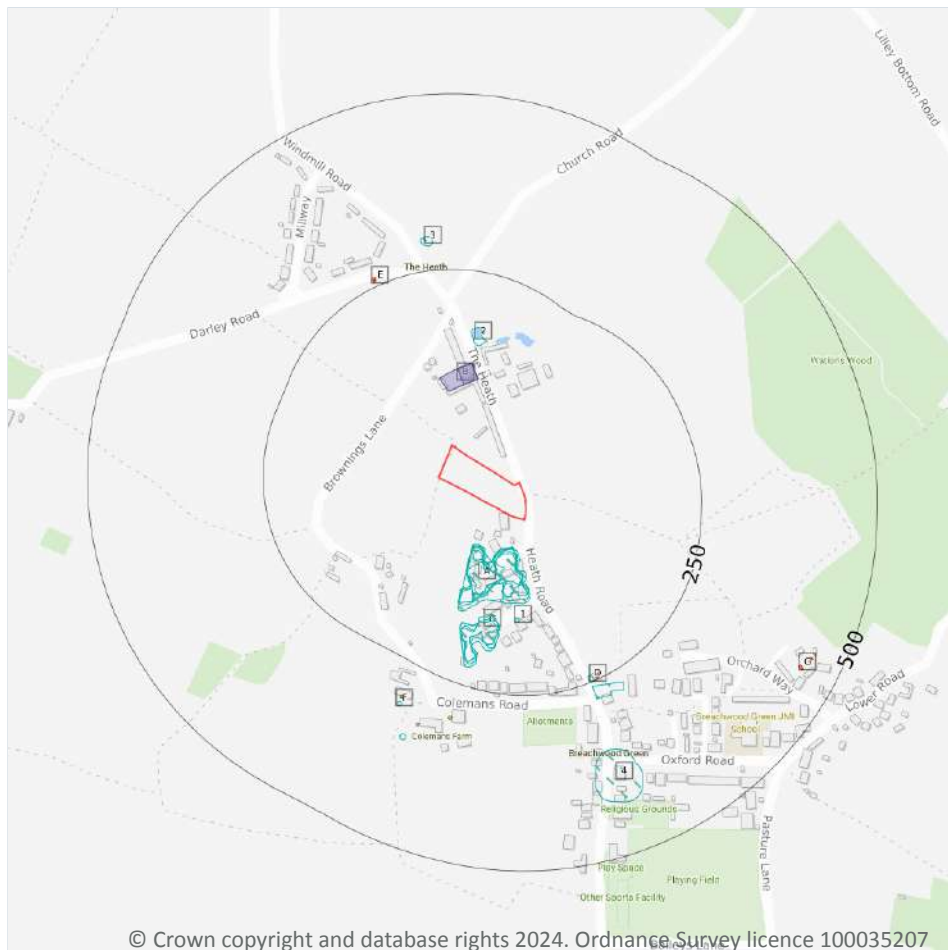
0

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

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

21

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

Features are displayed on the Past land use - un-grouped map on [page 19](#) >

ID	Location	Land Use	Date	Group ID
A	42m SE	Unspecified Pits	1947	2133707
A	42m SE	Unspecified Pits	1925	2133707
A	42m SE	Old Clay Pits	1899	2111146



ID	Location	Land Use	Date	Group ID
A	44m SE	Unspecified Pit	1884	2087538
A	45m SE	Unspecified Pits	1960	2107177
A	49m S	Old Clay Pits	1899	2111146
A	52m S	Unspecified Pits	1925	2121807
A	57m S	Unspecified Pit	1884	2087540
A	75m S	Unspecified Pit	1884	2087539
1	140m S	Brick Kiln	1884	2092276
C	142m S	Unspecified Pits	1947	2096996
C	142m S	Unspecified Pits	1925	2096996
C	146m S	Unspecified Pits	1960	2139179
2	146m N	Unspecified Pit	1884	2087537
C	151m S	Unspecified Pits	1925	2156113
D	241m SE	Smithy	1899	2089388
D	256m SE	Smithy	1899	2089390
3	285m N	Unspecified Pit	1884	2087536
F	308m S	Wind Pump	1925	2073227
F	346m S	Tank	1925	2089966
4	349m SE	Smithy	1884	2089312

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

3

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

Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

ID	Location	Land Use	Date	Group ID
F	297m S	Unspecified Tank	1993	365372
F	298m S	Unspecified Tank	1972	365368



ID	Location	Land Use	Date	Group ID
F	323m S	Unspecified Tank	1924	365362

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	6
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Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

ID	Location	Land Use	Date	Group ID
D	242m SE	Electricity Substation	1993	257594
D	244m SE	Electricity Substation	1972	257594
E	257m NW	Electricity Substation	1993	257676
E	259m NW	Electricity Substation	1972	263939
G	443m SE	Electricity Substation	1993	247679
G	451m SE	Electricity Substation	1972	247666

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0
----------------------------	----------

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

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



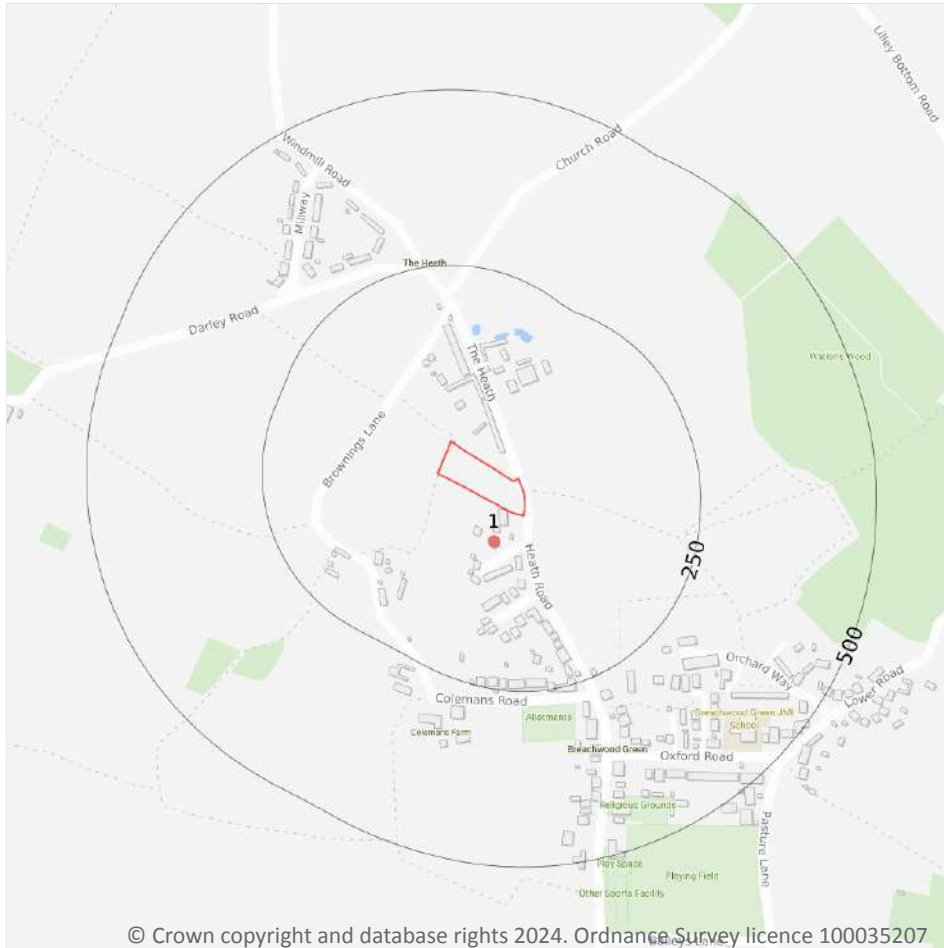
Features are displayed on the Past land use - un-grouped map on [page 19](#) >

ID	Location	Land Use	Date	Group ID
B	76m N	Garage	1972	79773
B	87m N	Garage	1993	79773

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

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

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

3.5 Historical waste sites

Records within 500m**0**

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

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

3.6 Licensed waste sites

Records within 500m**0**

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

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

3.7 Waste exemptions

Records within 500m**1**

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

Features are displayed on the Waste and landfill map on [page 23](#) >

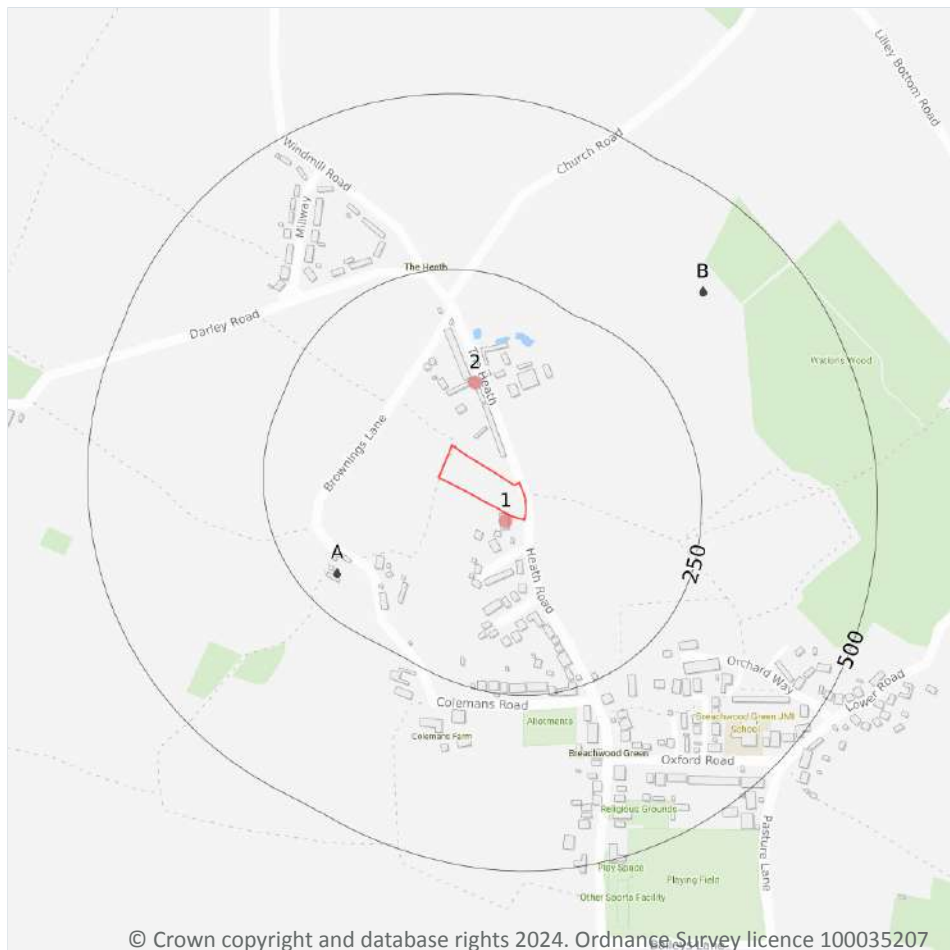
ID	Location	Site	Reference	Category	Sub-Category	Description
1	49m S	-	WEX261486	Using waste exemption	Not on a farm	Use of waste in construction



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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 26 >](#)

ID	Location	Company	Address	Activity	Category
1	10m SE	Linney	The Pheasantry, Heath Road, Breachwood Green, Hertfordshire, SG4 8PL	Vehicle Parts and Accessories	Motoring
2	95m N	Barrian Cars	21a, The Heath, Breachwood Green, Hertfordshire, SG4 8PJ	Secondhand Vehicles	Motoring

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m**0**

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m**0**

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

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

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

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

4

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

Features are displayed on the Current industrial land use map on [page 26 >](#)

ID	Location	Address	Details	
A	198m SW	NORTH BARN, BROWNINGS LANE, BREACHWOOD GREEN, HERTS, SG4 8PF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CANM.0446 Permit Version: 2 Receiving Water: INTO LAND	Status: VARIED UNDER EPR 2010 Issue date: 21/12/2012 Effective Date: 21/12/2012 Revocation Date: -
A	198m SW	NORTH BARN, BROWNINGS LANE, BREACHWOOD GREEN, HERTS, SG4 8PF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CANM.0446 Permit Version: 1 Receiving Water: INTO LAND	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 04/09/2002 Effective Date: 04/09/2002 Revocation Date: 20/12/2012
B	376m NE	Kings Walden, Kings Walden	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1264 Permit Version: 2 Receiving Water: Mimram	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 13/10/2015
B	376m NE	Kings Walden, Kings Walden	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1264 Permit Version: 1 Receiving Water: MIMRAM	Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02/11/1989 Revocation Date: 02/09/2010

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



4.14 Pollutant release to surface waters (Red List)

Records within 500m**0**

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

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

4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m**0**

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

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

4.17 List 2 Dangerous Substances

Records within 500m**0**

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m**0**

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

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



4.19 Pollution inventory substances

Records within 500m**0**

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

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

4.20 Pollution inventory waste transfers

Records within 500m**0**

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

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

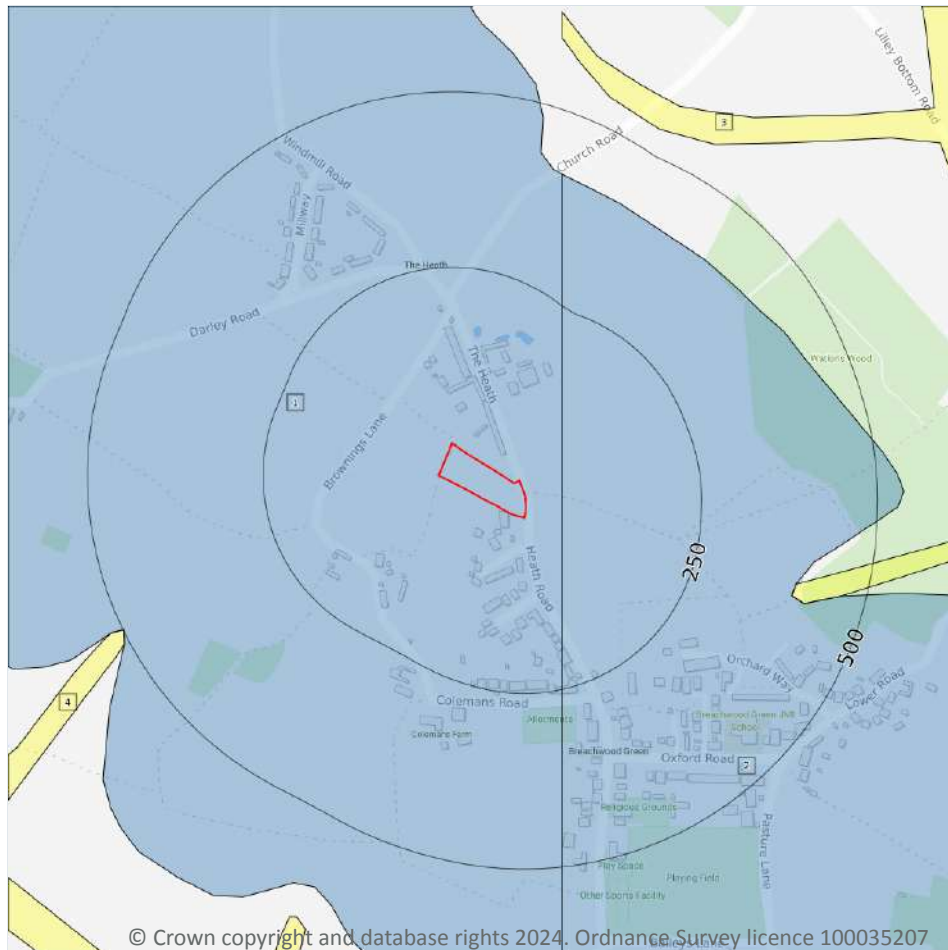
4.21 Pollution inventory radioactive waste

Records within 500m**0**

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

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

5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

4

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 32](#) >

ID	Location	Designation	Description
1	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	51m E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

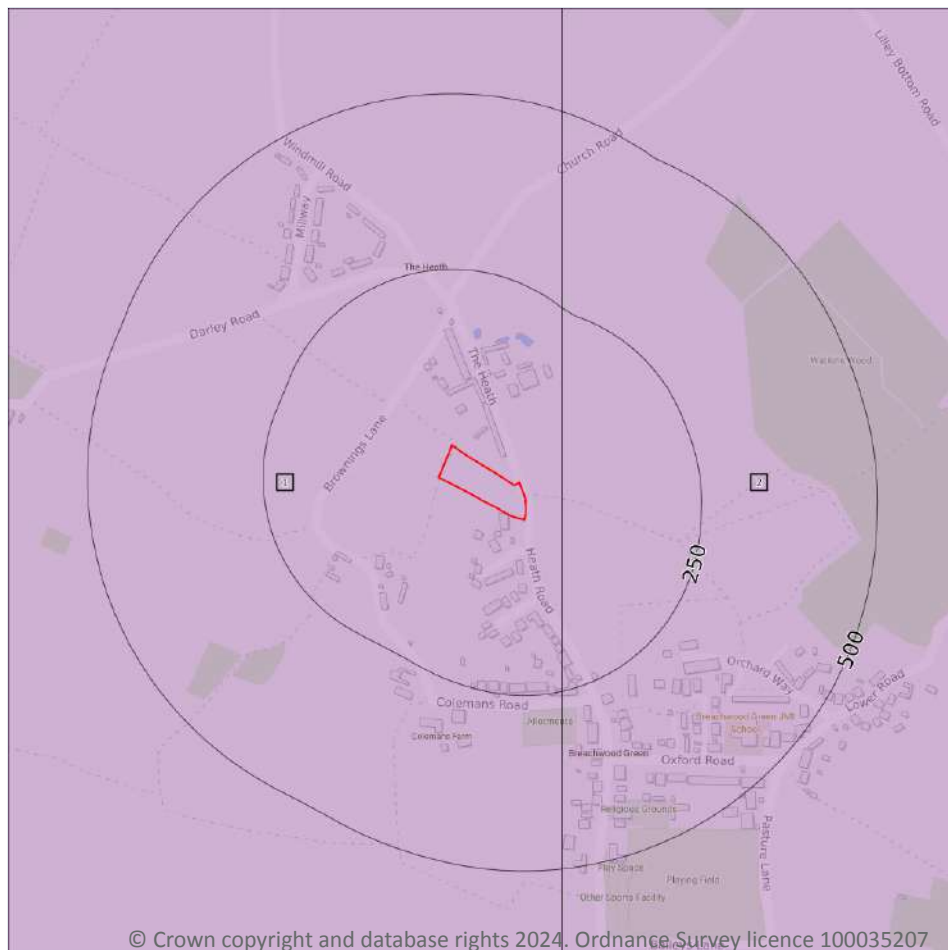


ID	Location	Designation	Description
3	397m E	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	499m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 34](#) >

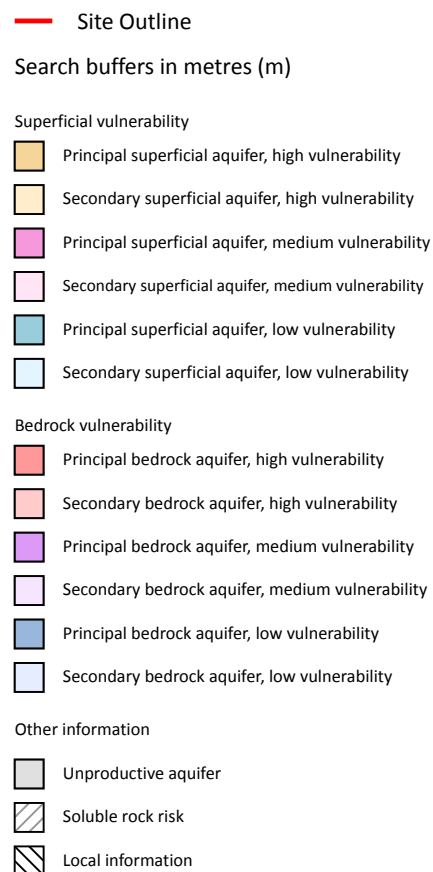
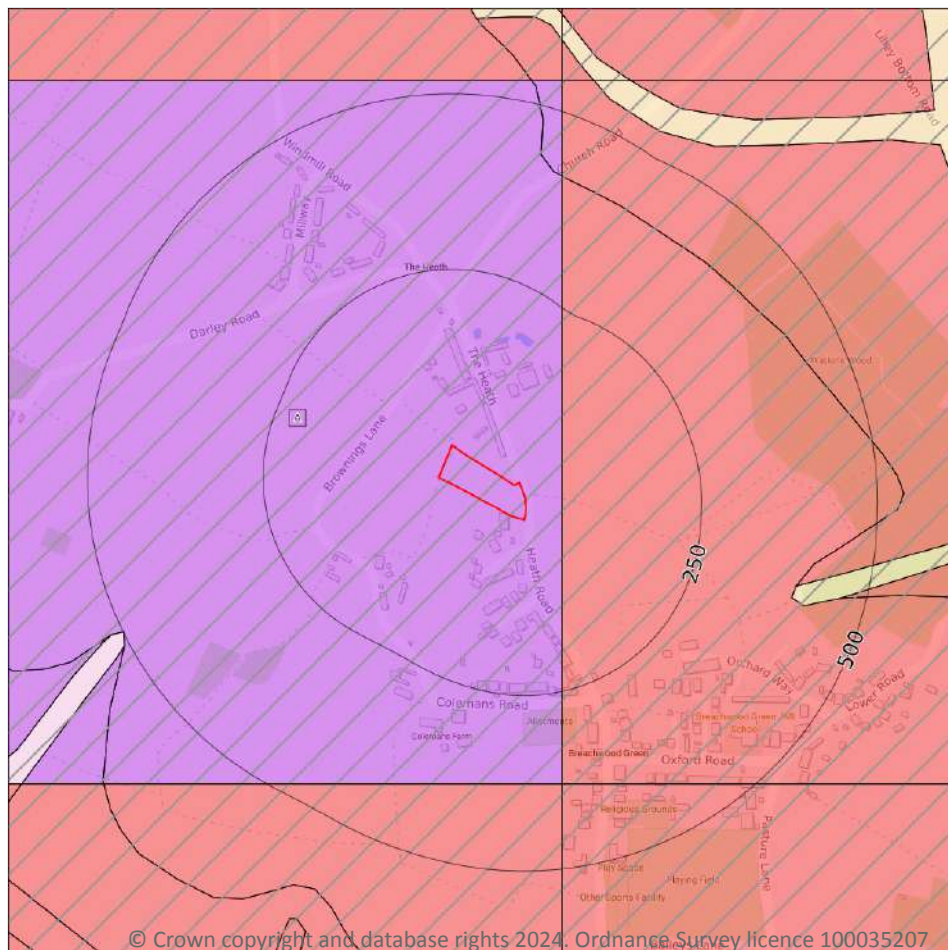
ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	51m E	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers



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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

1

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

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

Features are displayed on the Groundwater vulnerability map on [page 36](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	On site	Summary Classification: Principal bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40- 70% Dilution value: <300mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Principal Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	1
------------------------	----------

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	Very significant soluble rocks are likely to be present with a moderate possibility of localised natural subsidence or dissolution-related degradation of bedrock, especially in adverse conditions such as concentrated surface or subsurface water flow.	8.0%

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

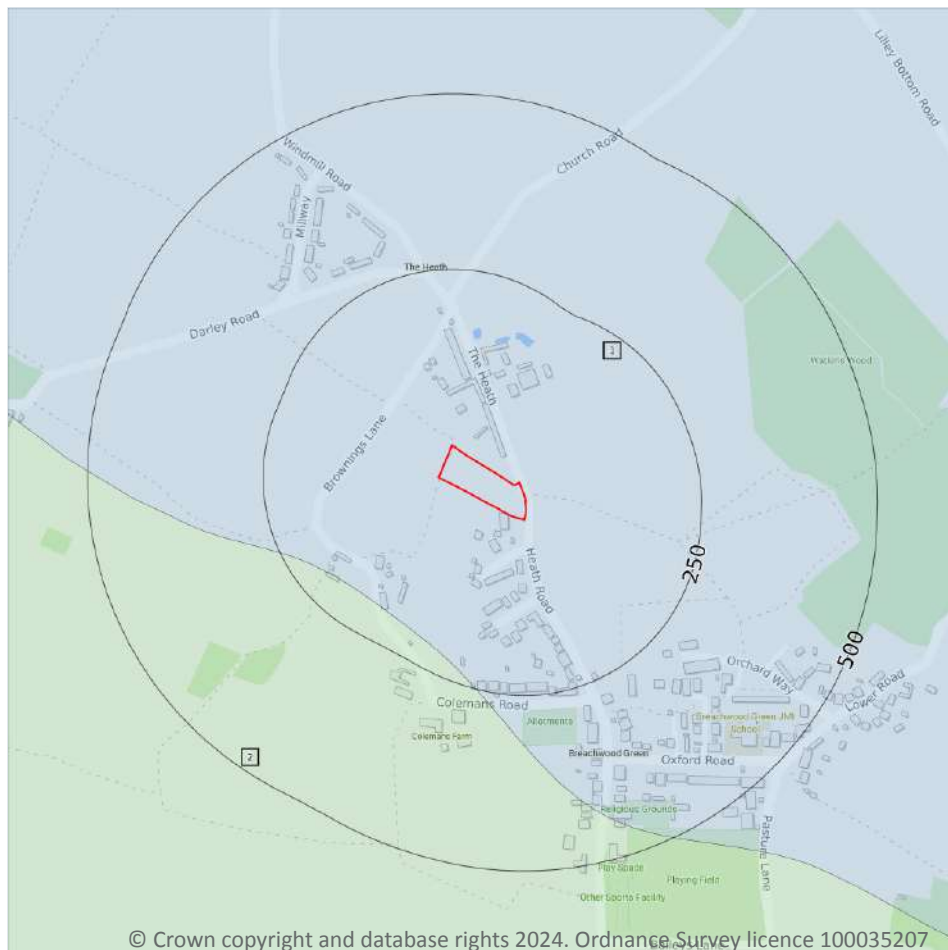
5.5 Groundwater vulnerability- local information

Records on site	0
------------------------	----------

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

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

Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

6

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 38](#) >

ID	Location	Details	
-	986m NE	Status: Active Licence No: 29/38/02/0070 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: KINGS WALDEN PUMPING STATION Data Type: Point Name: Affinity Water Limited Easting: 515400 Northing: 223300	Annual Volume (m ³): 829645 Max Daily Volume (m ³): 2841.25 Original Application No: NPS/WR/011805 Original Start Date: 21/05/1982 Expiry Date: - Issue No: 102 Version Start Date: 14/11/2012 Version End Date: -
-	1390m SE	Status: Historical Licence No: 29/38/02/0011 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: GROVE FARM, BENDISH, HERTS - BOREHOLE Data Type: Point Name: SHAW Easting: 516100 Northing: 221600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 20/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/03/1966 Version End Date: -
-	1532m NE	Status: Historical Licence No: 29/38/02/0054 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: KINGS WALDEN BURY, NEAR HITCHIN - BOREHOLE Data Type: Point Name: MILBOURNE-SWINNERTON-PILKINGTON Easting: 516200 Northing: 223300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 24/07/1968 Expiry Date: - Issue No: 100 Version Start Date: 24/07/1968 Version End Date: -
-	1537m NE	Status: Active Licence No: 29/38/02/0054 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: KINGS WALDEN BURY, NEAR HITCHEN (BOREHOLE) Data Type: Point Name: PILKINGTON Easting: 516130 Northing: 223400	Annual Volume (m ³): 25344.05 Max Daily Volume (m ³): 81.83 Original Application No: - Original Start Date: 24/07/1968 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1953m NE	Status: Historical Licence No: 29/38/02/0054 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: KINGS WALDEN, NEAR HITCHIN - BOREHOLE A Data Type: Point Name: MILBOURNE-SWINNERTON-PILKINGTON Easting: 516100 Northing: 224000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 24/07/1968 Expiry Date: - Issue No: 100 Version Start Date: 24/07/1968 Version End Date: -



ID	Location	Details	
-	1953m NE	Status: Historical Licence No: 29/38/02/0054 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: KINGS WALDEN, NEAR HITCHIN - BOREHOLE B Data Type: Point Name: MILBOURNE-SWINNERTON-PILKINGTON Easting: 516100 Northing: 224000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 24/07/1968 Expiry Date: - Issue No: 100 Version Start Date: 24/07/1968 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	0
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Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

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

5.8 Potable abstractions

Records within 2000m	1
-----------------------------	----------

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 38 >](#)

ID	Location	Details	
-	986m NE	Status: Active Licence No: 29/38/02/0070 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: KINGS WALDEN PUMPING STATION Data Type: Point Name: Affinity Water Limited Easting: 515400 Northing: 223300	Annual Volume (m ³): 829645 Max Daily Volume (m ³): 2841.25 Original Application No: NPS/WR/011805 Original Start Date: 21/05/1982 Expiry Date: - Issue No: 102 Version Start Date: 14/11/2012 Version End Date: -

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



5.9 Source Protection Zones

Records within 500m**2**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination. Features are displayed on the Abstractions and Source Protection Zones map on [page 38 >](#)

ID	Location	Type	Description
1	On site	2	Outer catchment
2	198m SW	3	Total catchment

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m**0**

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

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



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

3

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

Features are displayed on the Hydrology map on [page 42 >](#)

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1
------------------------	----------

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on [page 42 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Mimram (Whitwell to Codicote Bottom)	GB106038033460	Lee Upper	Lee Upper

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

6.4 WFD Surface water bodies

Records identified	1
---------------------------	----------

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on [page 42 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1535m E	River	Mimram (Whitwell to Codicote Bottom)	GB106038033460 ↗	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on [page 42](#) >

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Upper Lee Chalk	GB40601G602900 ↗	Poor	Poor	Poor	2019

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



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m**0**

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

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

7.2 Historical Flood Events

Records within 250m**0**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

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

7.3 Flood Defences

Records within 250m**0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

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

7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

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

7.7 Flood Zone 3

Records within 50m

0

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

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



8 Surface water flooding

8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

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

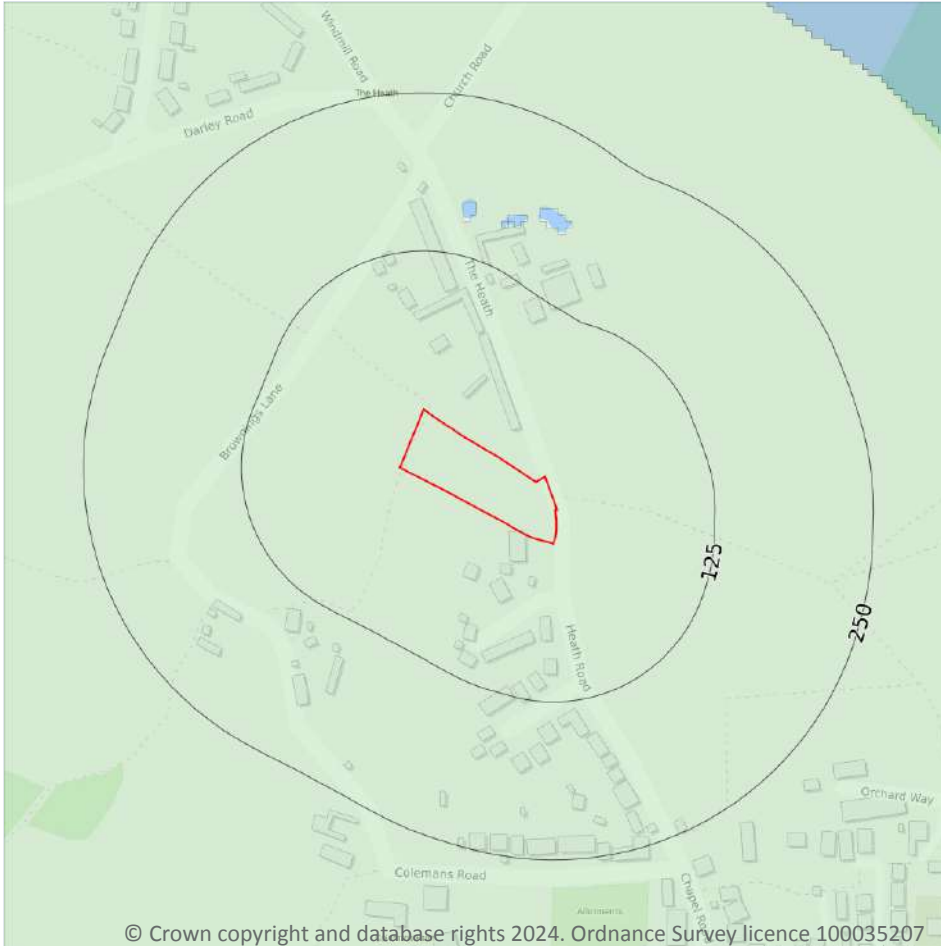
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site. The table below shows the maximum flood depths for a range of return periods for the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

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

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

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

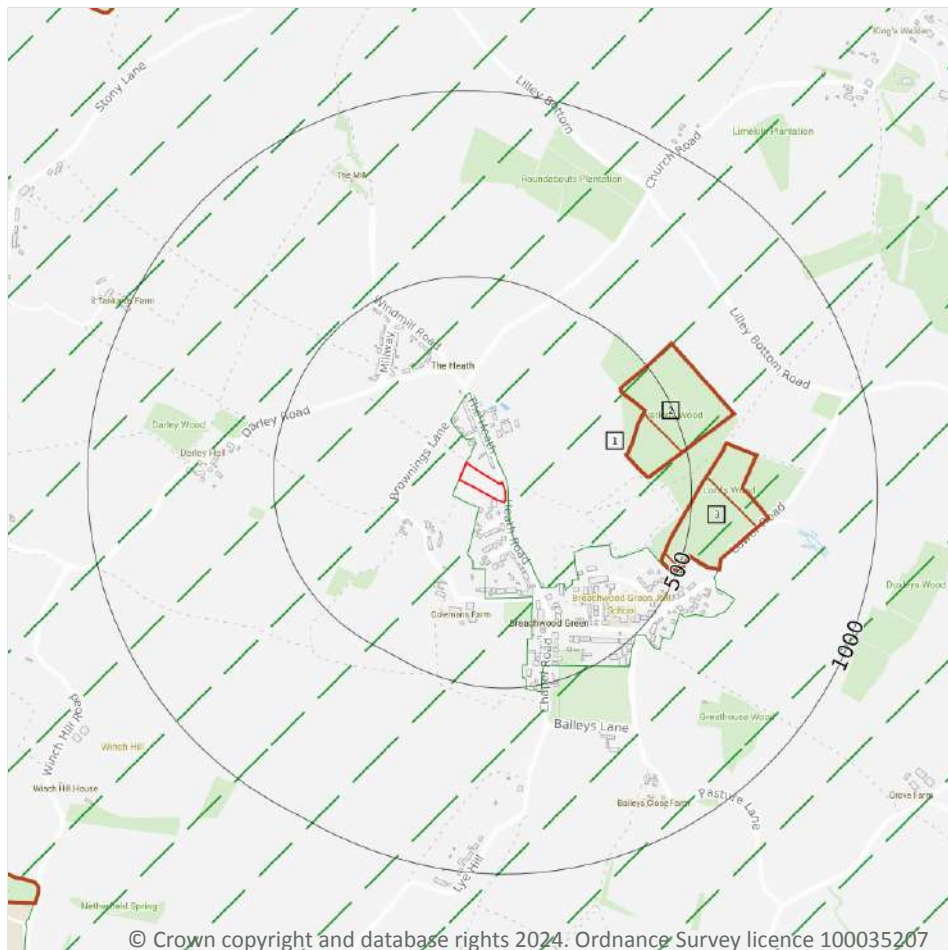
Low

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

Features are displayed on the Groundwater flooding map on [page 49](#) >

This data is sourced from Ambient Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Designated Ancient Woodland
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

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

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

10.7 Designated Ancient Woodland

Records within 2000m**7**

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

Features are displayed on the Environmental designations map on [page 50 >](#)

ID	Location	Name	Woodland Type
2	340m E	Unknown	Ancient Replanted Woodland
3	449m SE	Watkins/lords Woods	Ancient Replanted Woodland
-	1532m S	Sewetts Wood	Ancient Replanted Woodland
5	1547m NW	Stubbocks Wood	Ancient Replanted Woodland
6	1572m SW	Winchill Wood	Ancient & Semi-Natural Woodland
-	1723m S	Sewetts Wood	Ancient & Semi-Natural Woodland
-	1829m NW	Stubbocks Wood	Ancient Replanted Woodland

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

10.8 Biosphere Reserves

Records within 2000m**0**

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

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



10.9 Forest Parks

Records within 2000m**0**

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m**0**

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

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

10.11 Green Belt

Records within 2000m**1**

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

Features are displayed on the Environmental designations map on [page 50 >](#)

ID	Location	Name	Local Authority name
1	On site	London	North Hertfordshire

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

10.12 Proposed Ramsar sites

Records within 2000m**0**

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m**0**

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m**4**

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

Location	Name	Type	NVZ ID	Status
On site	LEE NVZ	Surface Water	443	Existing

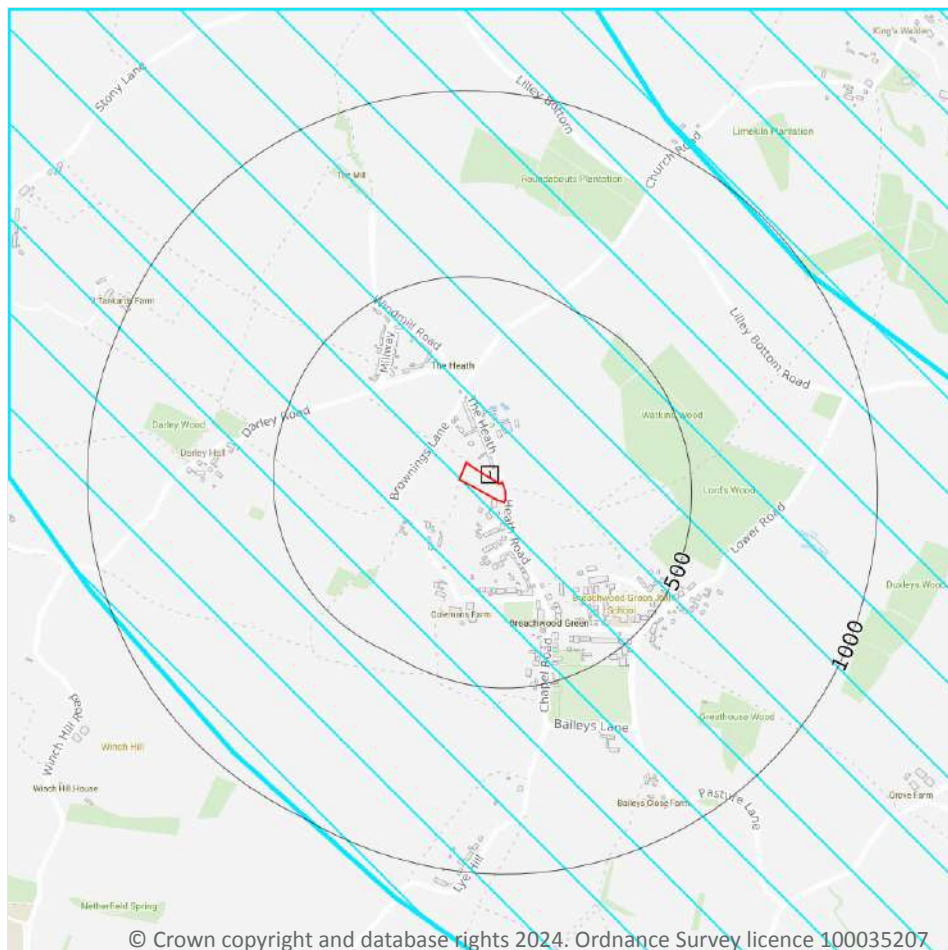


Location	Name	Type	NVZ ID	Status
On site	Luton Chalk	Groundwater	146	Existing
732m W	LEE NVZ	Surface Water	443	Existing
732m W	Luton Chalk	Groundwater	146	Existing

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



SSSI Impact Zones and Units



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

10.17 SSSI Impact Risk Zones

Records on site

1

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

Features are displayed on the SSSI Impact Zones and Units map on [page 56 >](#)

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Livestock & poultry units with floorspace > 500m ² , slurry lagoons & digestate stores > 750m ² , manure stores > 3500t.

This data is sourced from Natural England.



10.18 SSSI Units

Records within 2000m

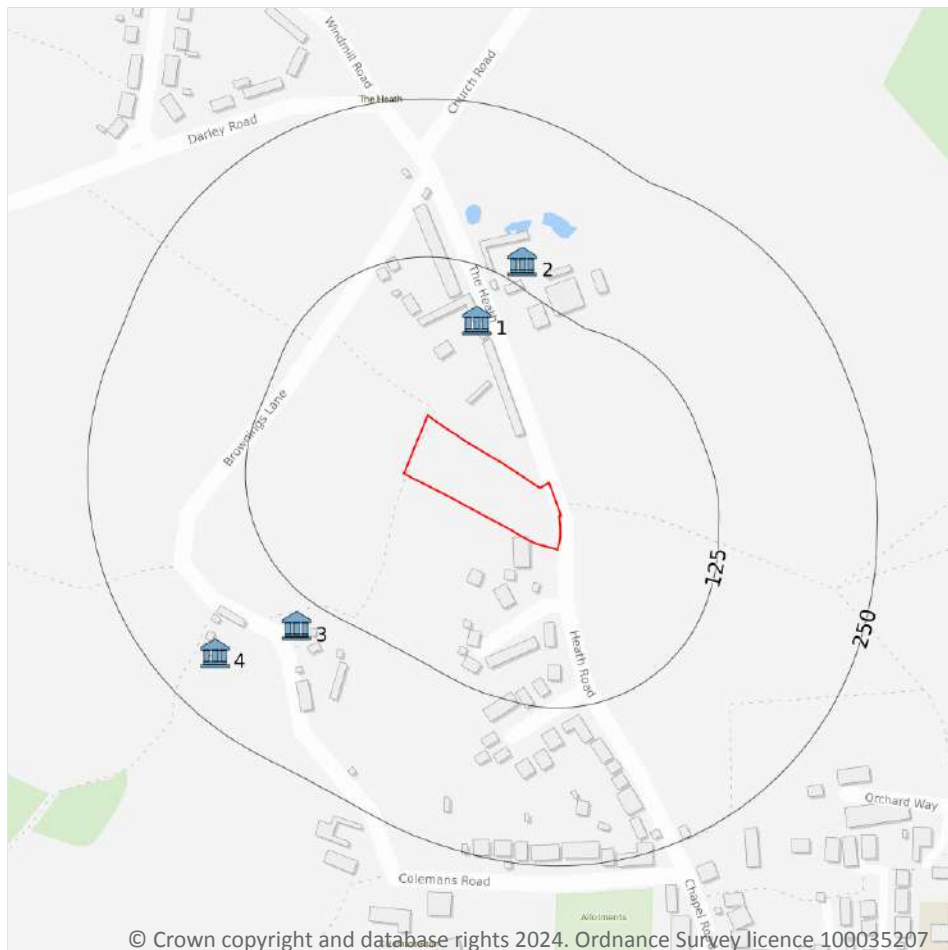
0

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

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



11 Visual and cultural designations



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

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

4

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

Features are displayed on the Visual and cultural designations map on [page 58 >](#)

ID	Location	Name	Grade	Reference Number	Listed date
1	85m N	Moss Cottage	II	1102477	08/02/1988
2	143m N	Heath Farmhouse	II	1366120	27/05/1968
3	147m SW	Brownings Cottage	II	1176133	08/02/1988
4	206m SW	South Barn At Brownings Farm	II	1308003	08/02/1988

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



11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

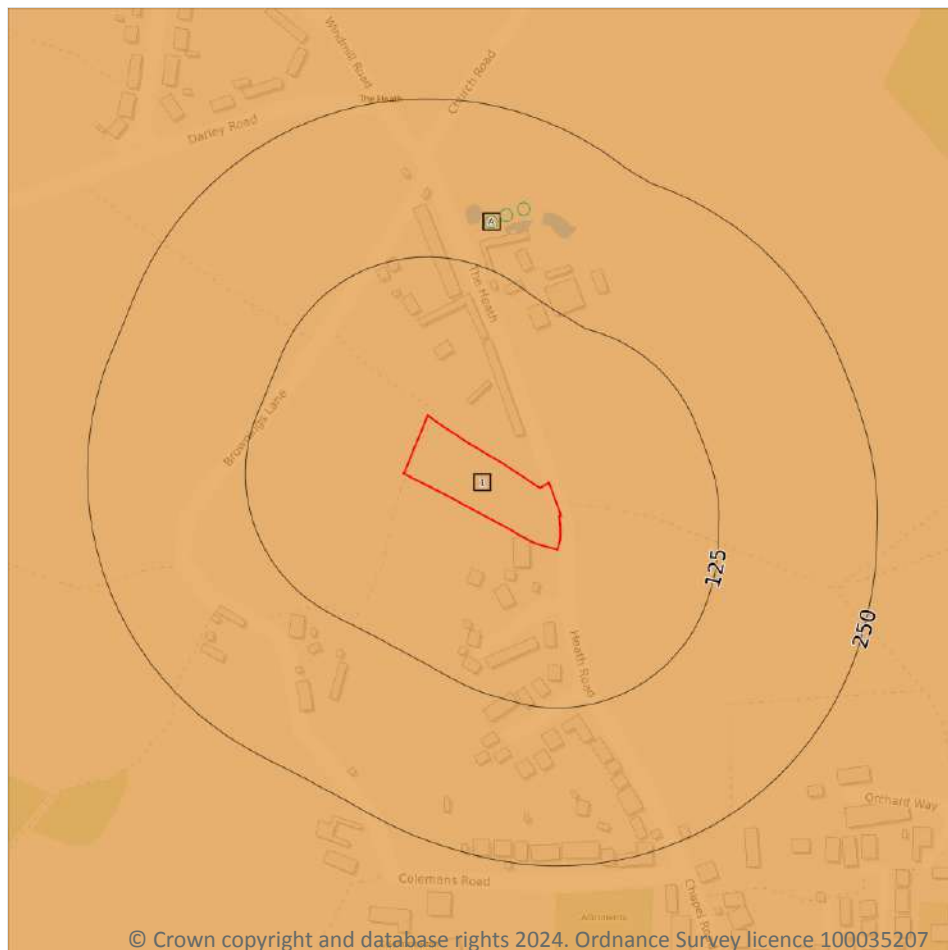
0

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

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



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on [page 61](#) >

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

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

3

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

Features are displayed on the Agricultural designations map on [page 61](#) >

ID	Location	Description	Reference	Application date
A	156m N	Selective Fell/Thin (Conditional)	017/81/06-07	19/09/2006
A	165m N	Selective Fell/Thin (Conditional)	017/81/06-07	19/09/2006
A	175m N	Selective Fell/Thin (Conditional)	017/81/06-07	19/09/2006

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

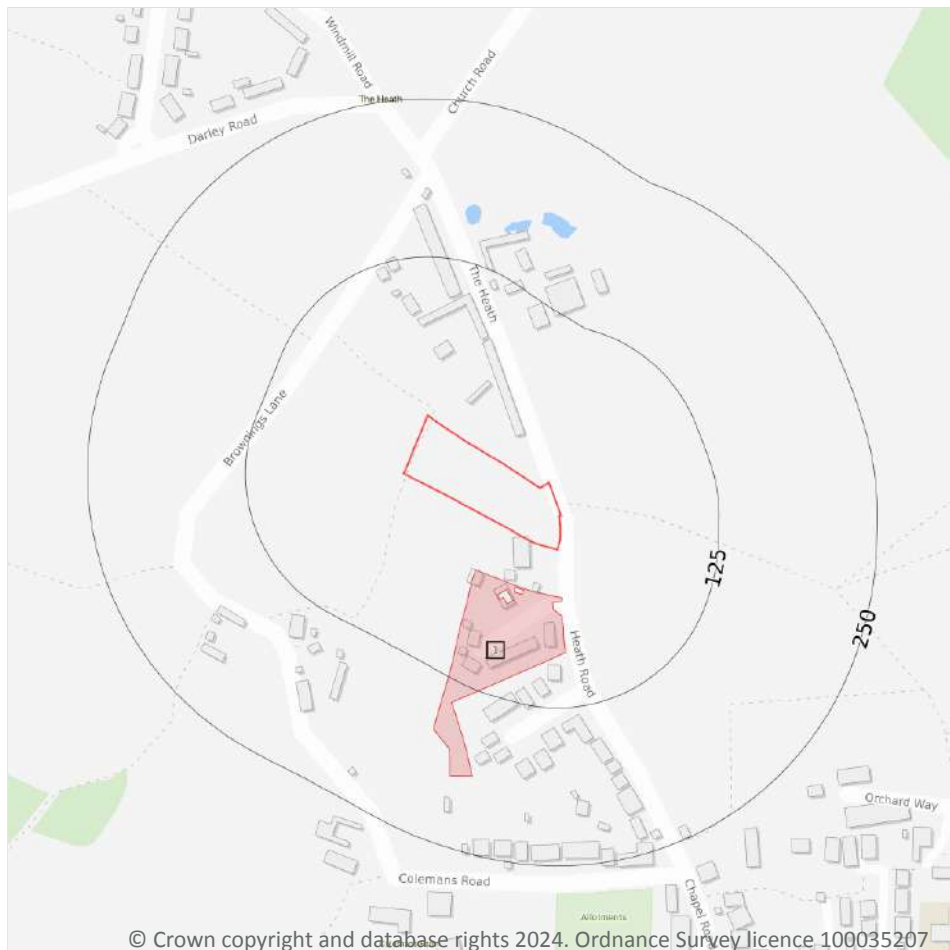
Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.



This data is sourced from Natural England.



13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

1

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on [page 64](#) >

ID	Location	Main Habitat	Other habitats
1	36m SE	No main habitat but additional habitats present	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.



13.2 Habitat Networks

Records within 250m

0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

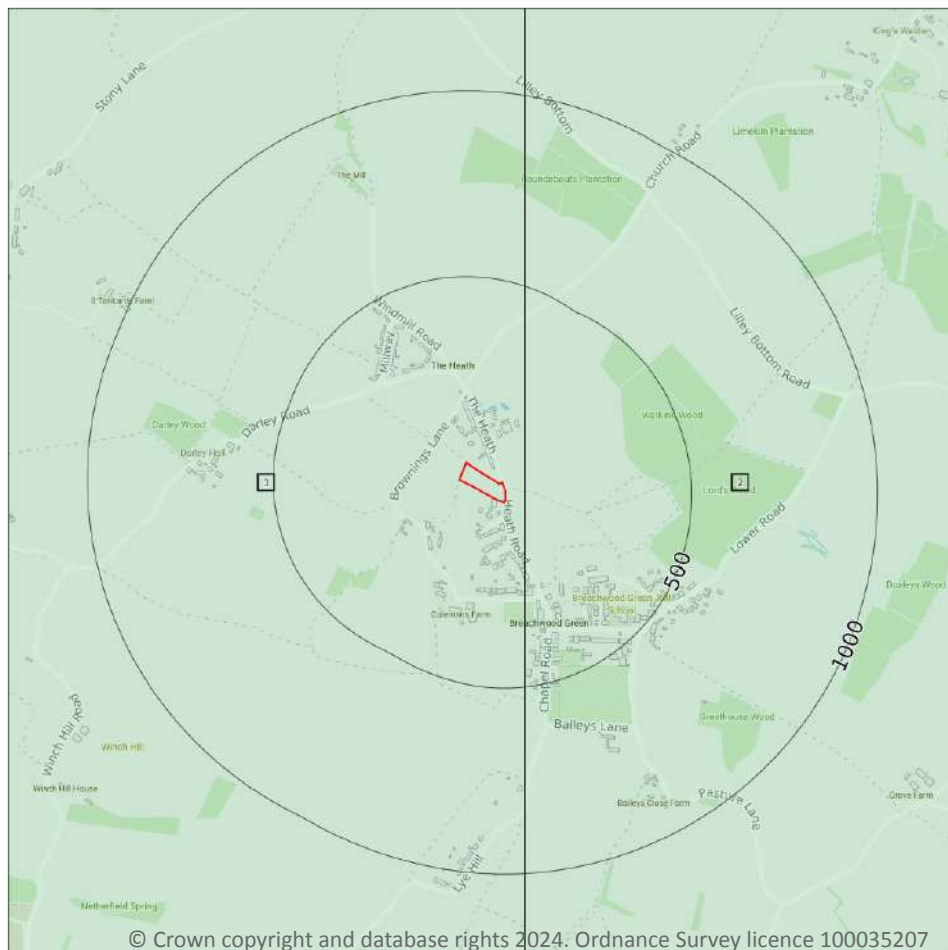
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Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

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

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 66](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	TL12SW
2	51m E	Full	Full	Full	No coverage	TL12SE

This data is sourced from the British Geological Survey.



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

14.2 Artificial and made ground (10k)

Records within 500m

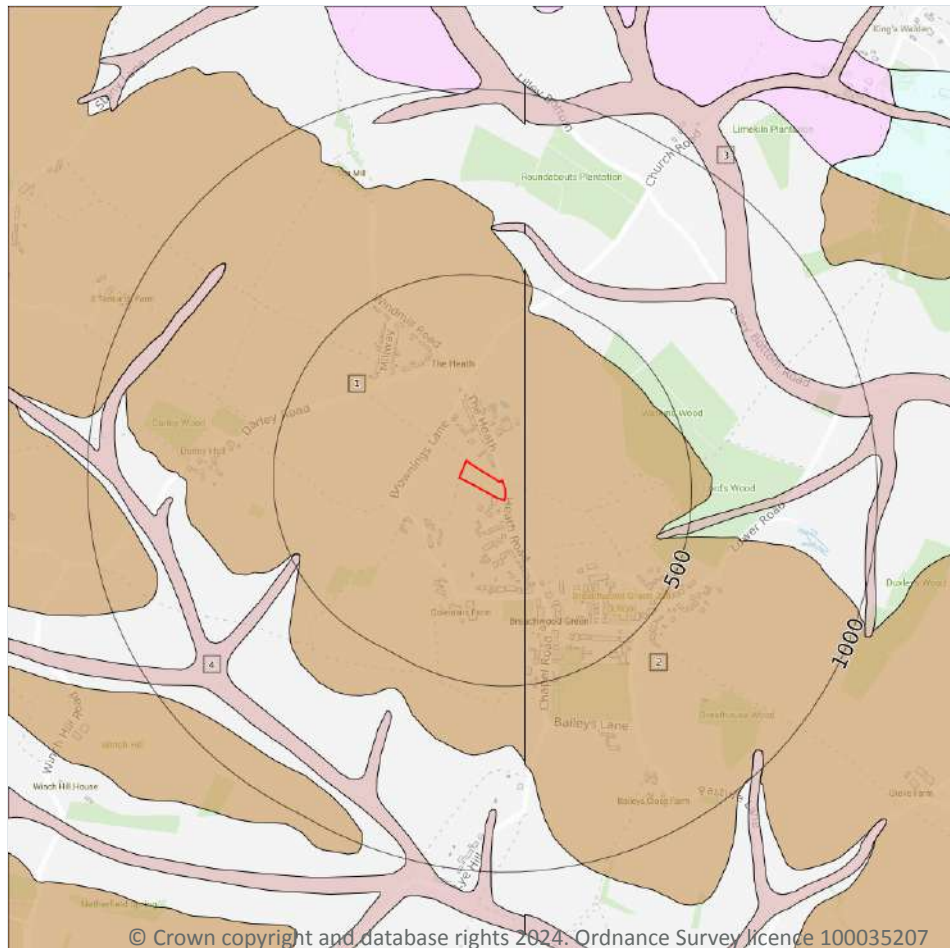
0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

4

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 68](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	CWF-DMTN	Clay-with-flints Formation - Diamicton	Diamicton
2	51m E	CWF-XCZSV	Clay-with-flints Formation - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
3	421m E	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel



ID	Location	LEX Code	Description	Rock description
4	476m W	HEAD-DMTN	Head - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

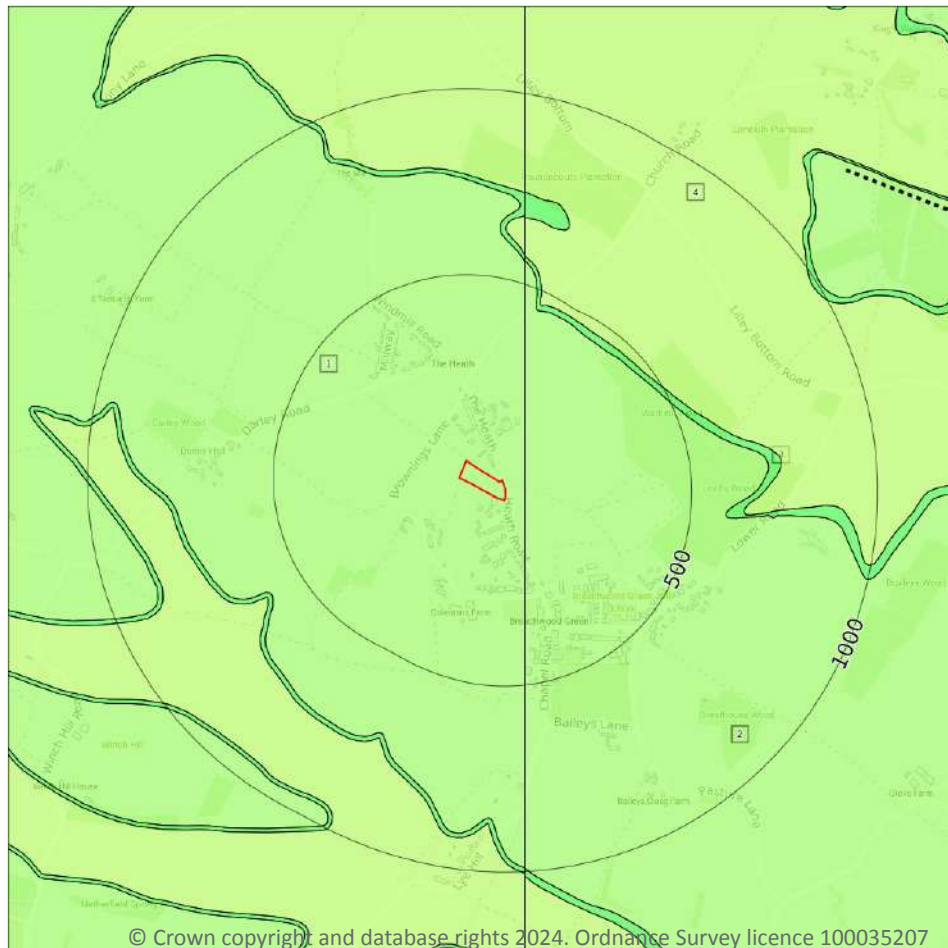
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m

4

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 70 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	LECH-CHLK	Lewes Nodular Chalk Formation - Chalk	Coniacian Age - Turonian Age
2	51m E	LESE-CHLK	Lewes Nodular Chalk Formation And Seaford Chalk Formation (undifferentiated) - Chalk	Santonian Age - Turonian Age
3	446m NE	CKR-CHLK	Chalk Rock Member - Chalk	Turonian Age



ID	Location	LEX Code	Description	Rock age
4	463m N	HNCK-CHLK	Holywell Nodular Chalk Formation And New Pit Chalk Formation (undifferentiated) - Chalk	Turonian Age - Cenomanian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

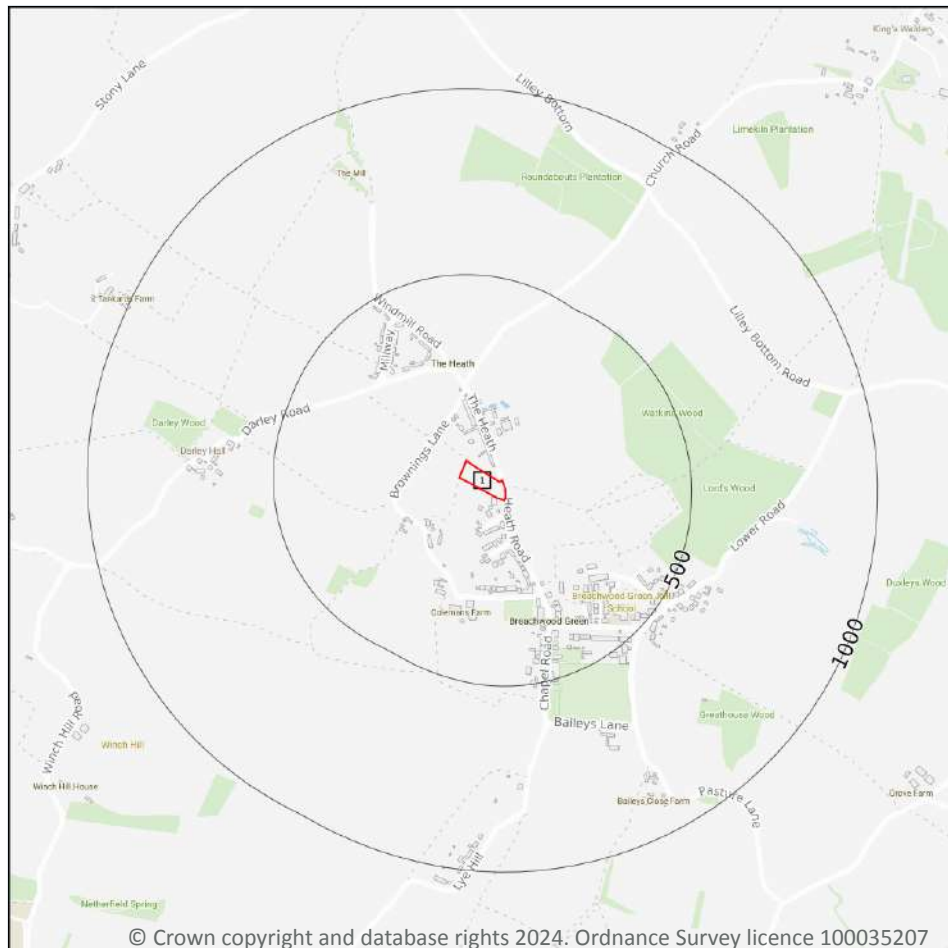
0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
Search buffers in metres (m)

☐ Geological map tile

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 72](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW221_hitchin_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

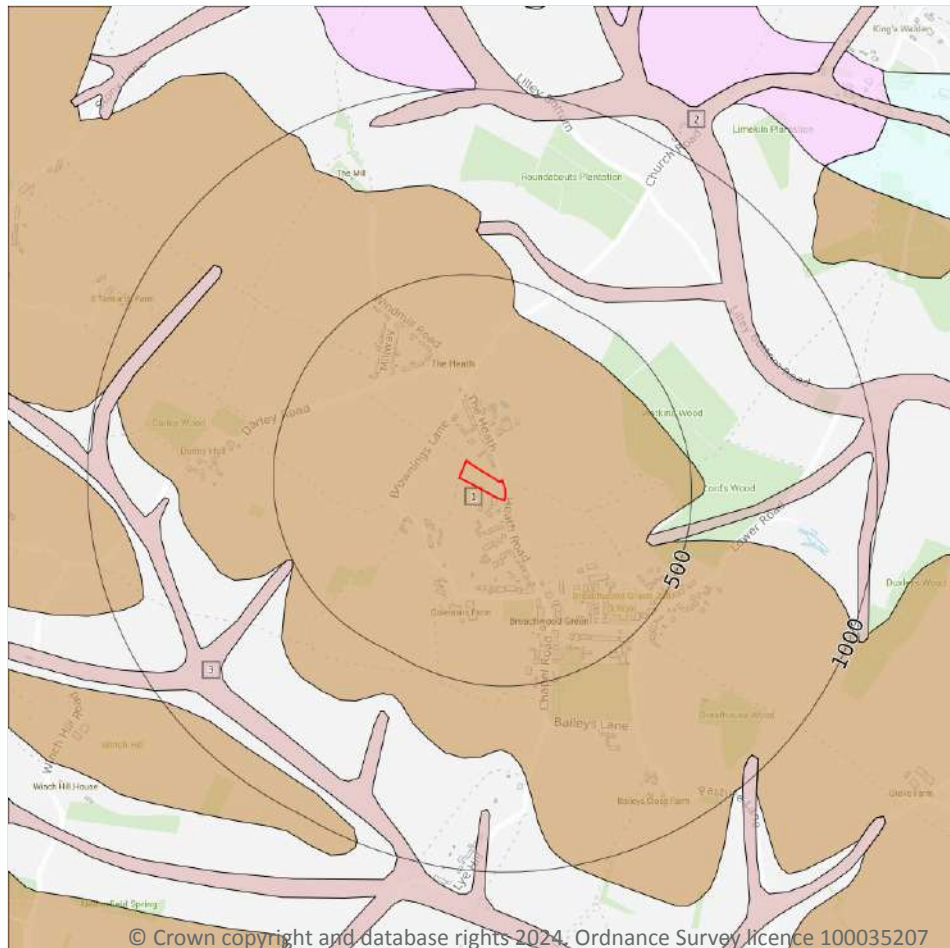
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

3

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 74 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	CWF-XCZSV	CLAY-WITH-FLINTS FORMATION	CLAY, SILT, SAND AND GRAVEL
2	397m E	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
3	499m W	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL



This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

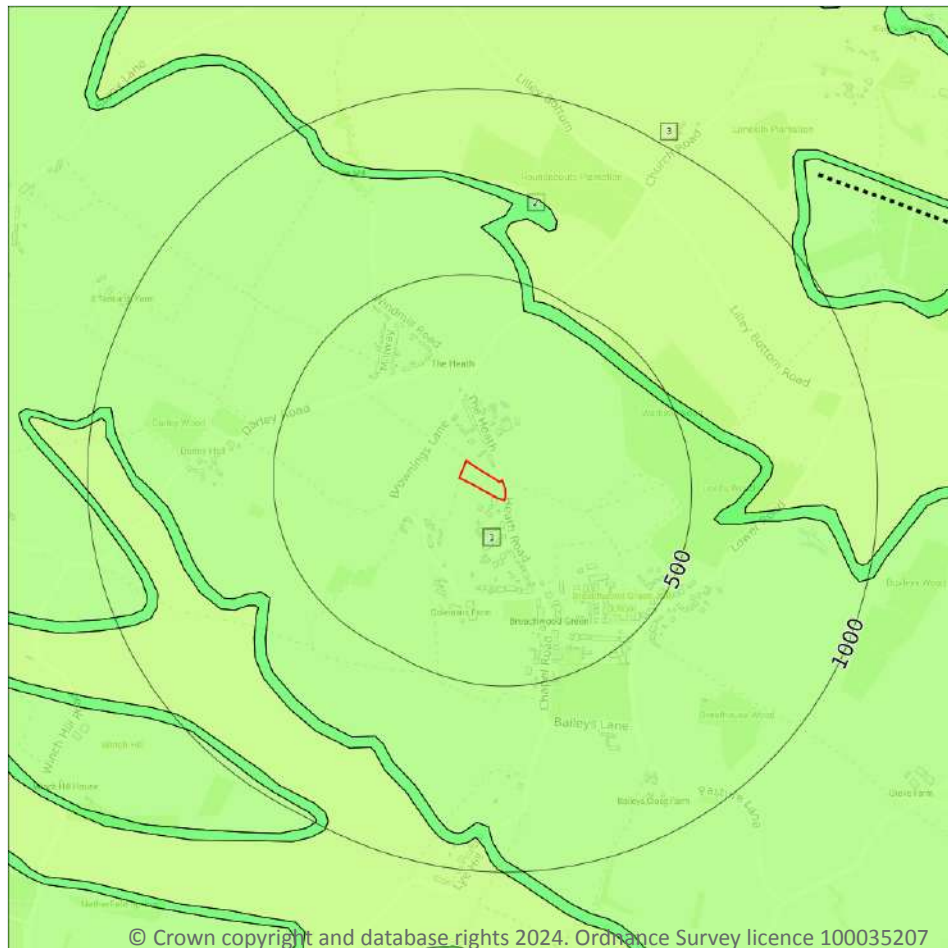
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m

3

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 76 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	LESE-CHLK	LEWES NODULAR CHALK FORMATION AND SEAFORD CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN
2	431m NE	CKR-CHLK	CHALK ROCK MEMBER - CHALK	TURONIAN
3	462m NE	HNCK-CHLK	HOLYWELL NODULAR CHALK FORMATION AND NEW PIT CHALK FORMATION (UNDIFFERENTIATED) - CHALK	CENOMANIAN



This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Very High	Very High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

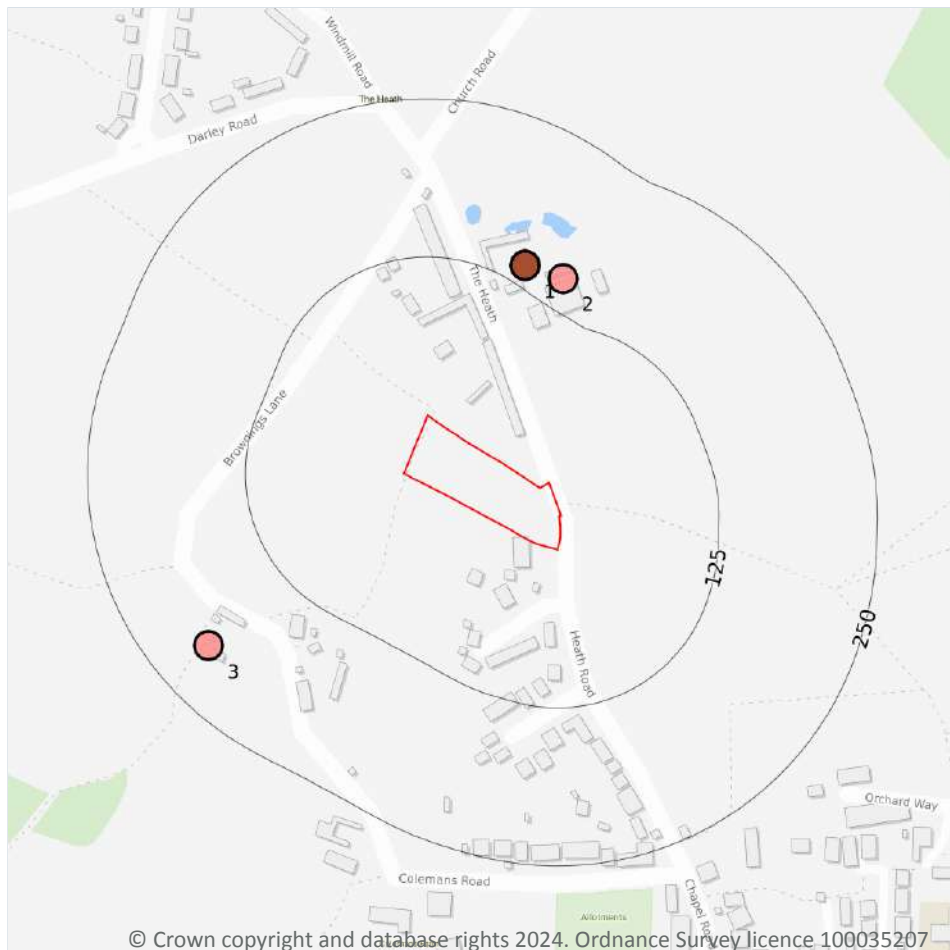
0

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

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m

3

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

Features are displayed on the Boreholes map on [page 78 >](#)

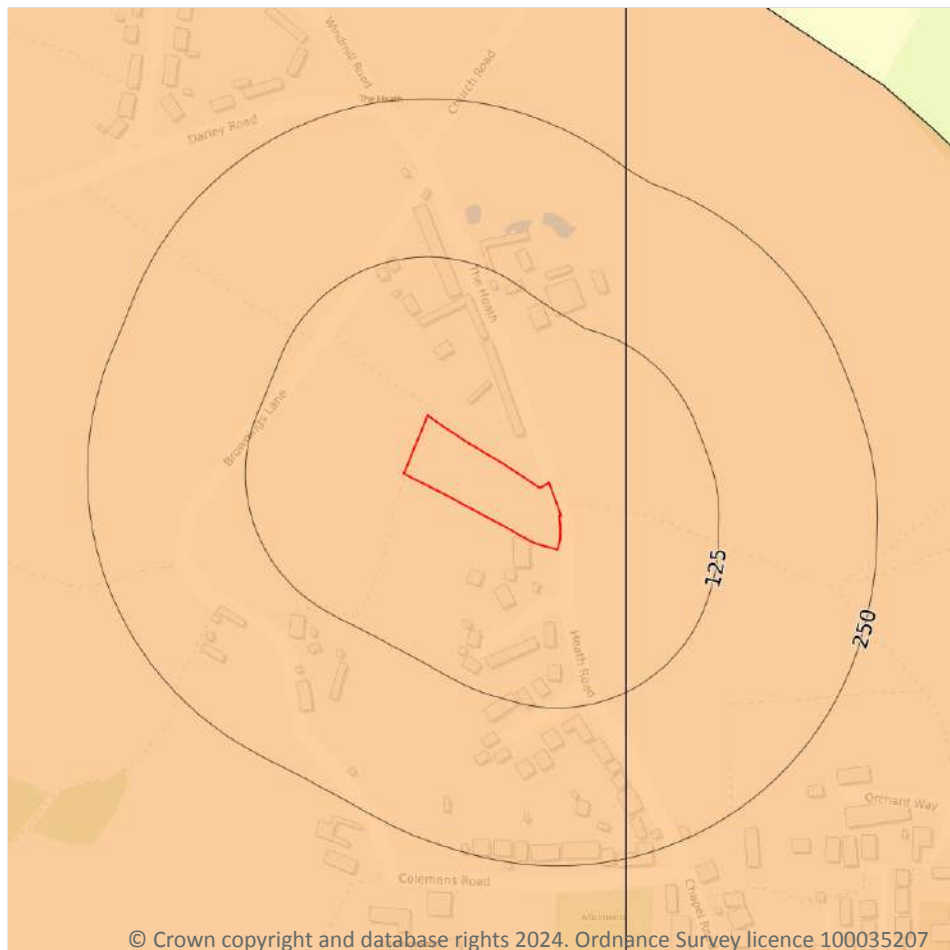
ID	Location	Grid reference	Name	Length	Confidential	Web link
1	141m N	514920 222600	HEATH FARM BREACHWOOD GREEN	-1.0	N	528668 ↗
2	150m N	514950 222590	HEALTH FARM, BREACHWOOD GREEN	93.88	N	528533 ↗
3	206m SW	514670 222300	BROWNING`S FARM, BREACHWOOD GREEN	60.96	N	528539 ↗



This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

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17.1 Shrink swell clays

Records within 50m

1

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

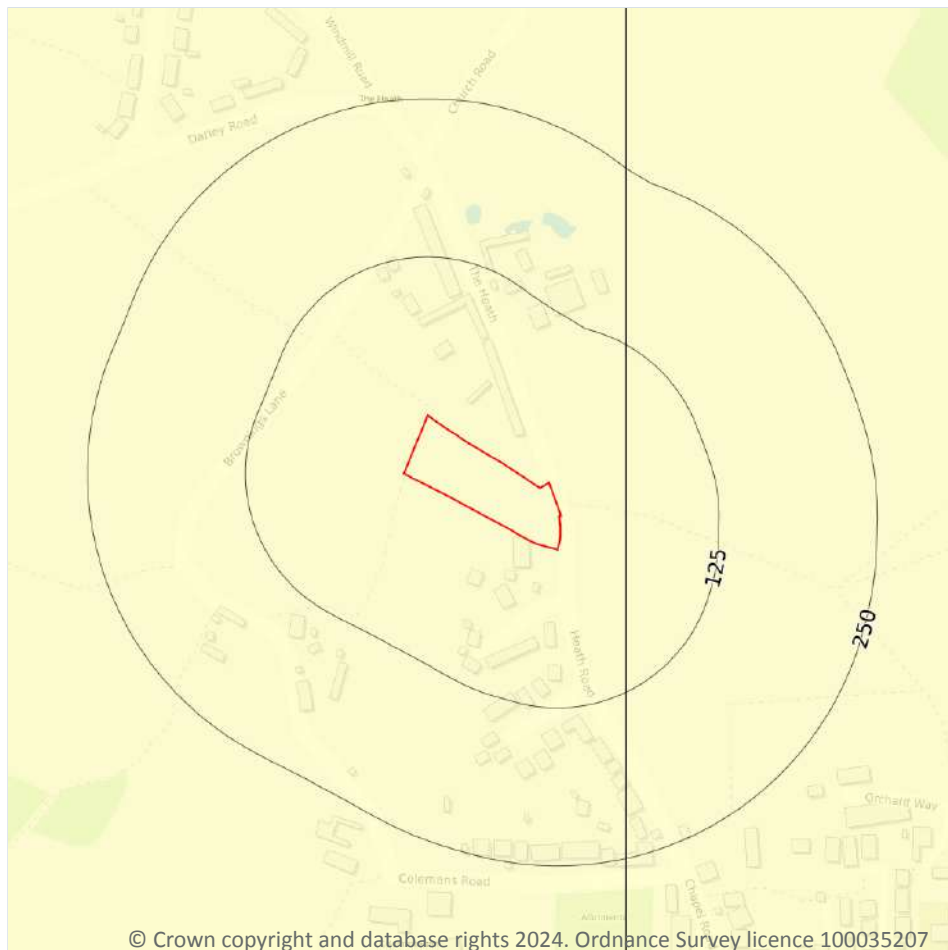
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 80](#) >

Location	Hazard rating	Details
On site	Low	Ground conditions predominantly medium plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.2 Running sands

Records within 50m

1

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

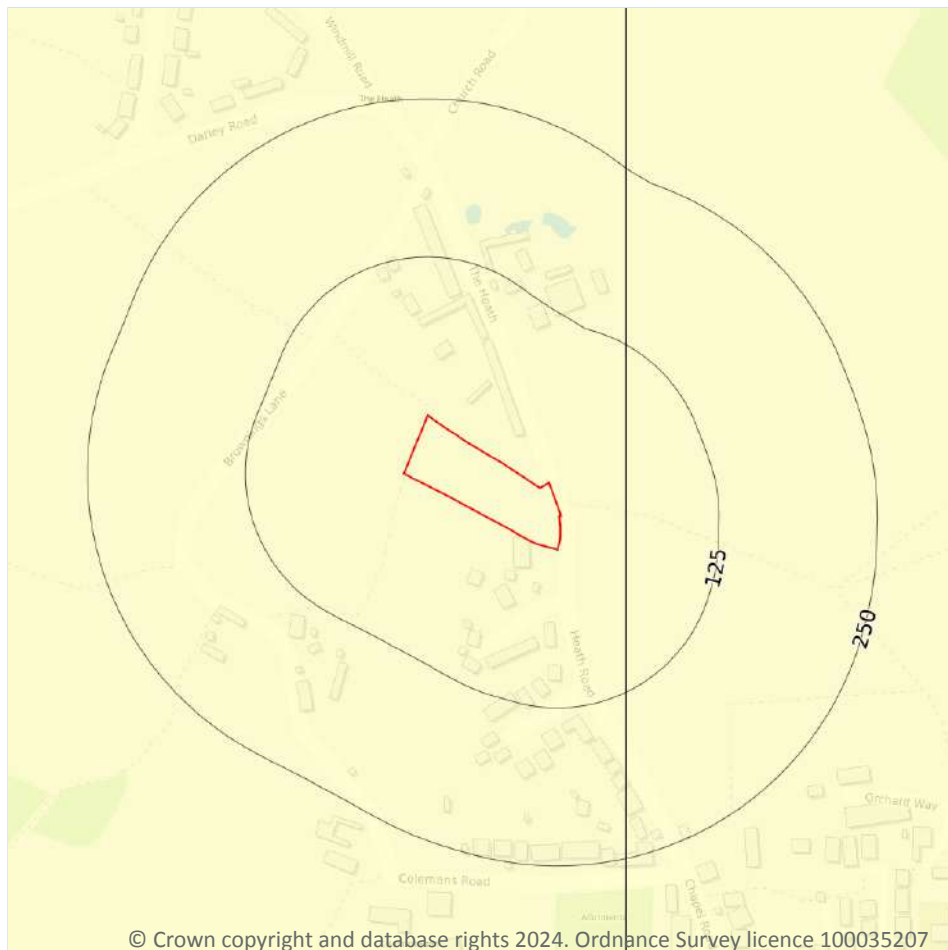
Features are displayed on the Natural ground subsidence - Running sands map on [page 81](#) >

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.3 Compressible deposits

Records within 50m

1

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

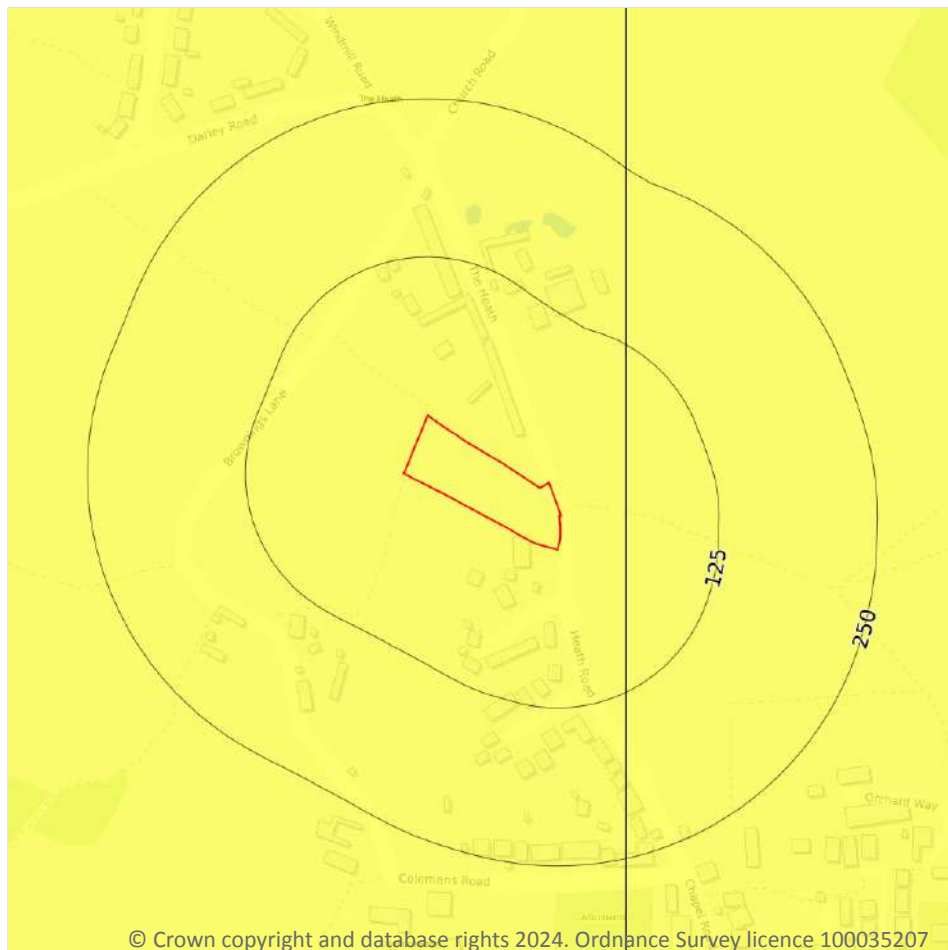
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 82 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.4 Collapsible deposits

Records within 50m

1

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

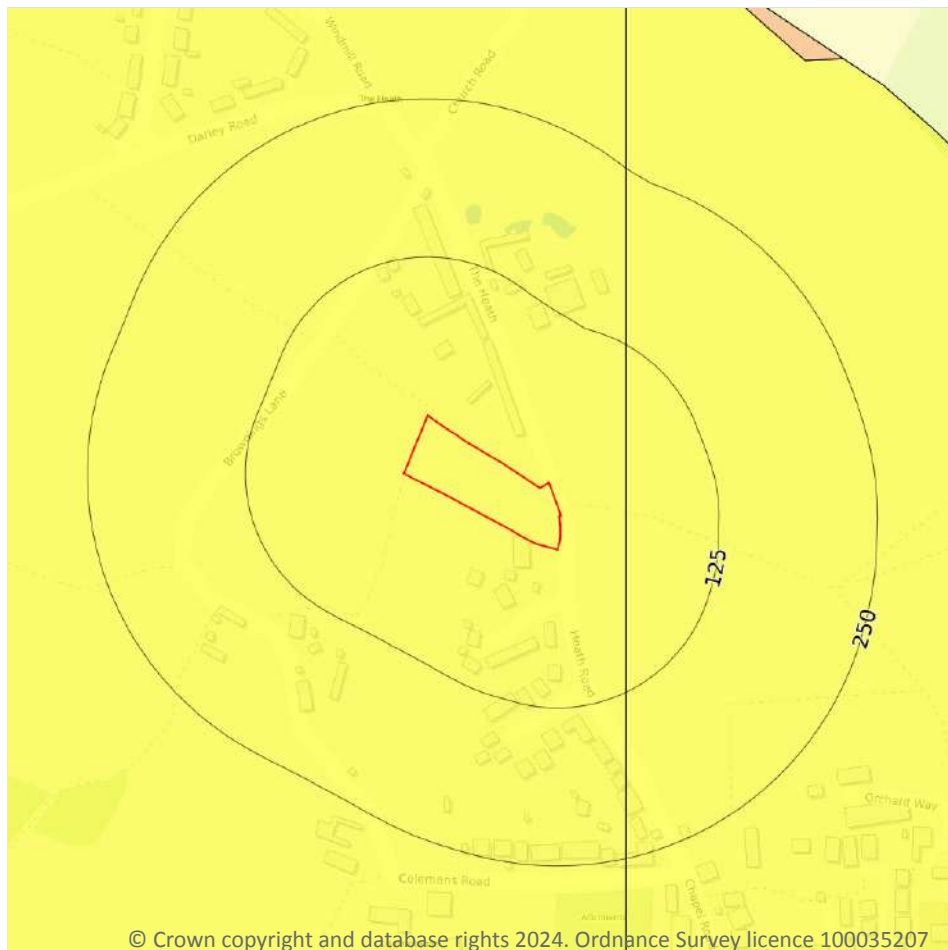
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 83 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

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17.5 Landslides

Records within 50m

1

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

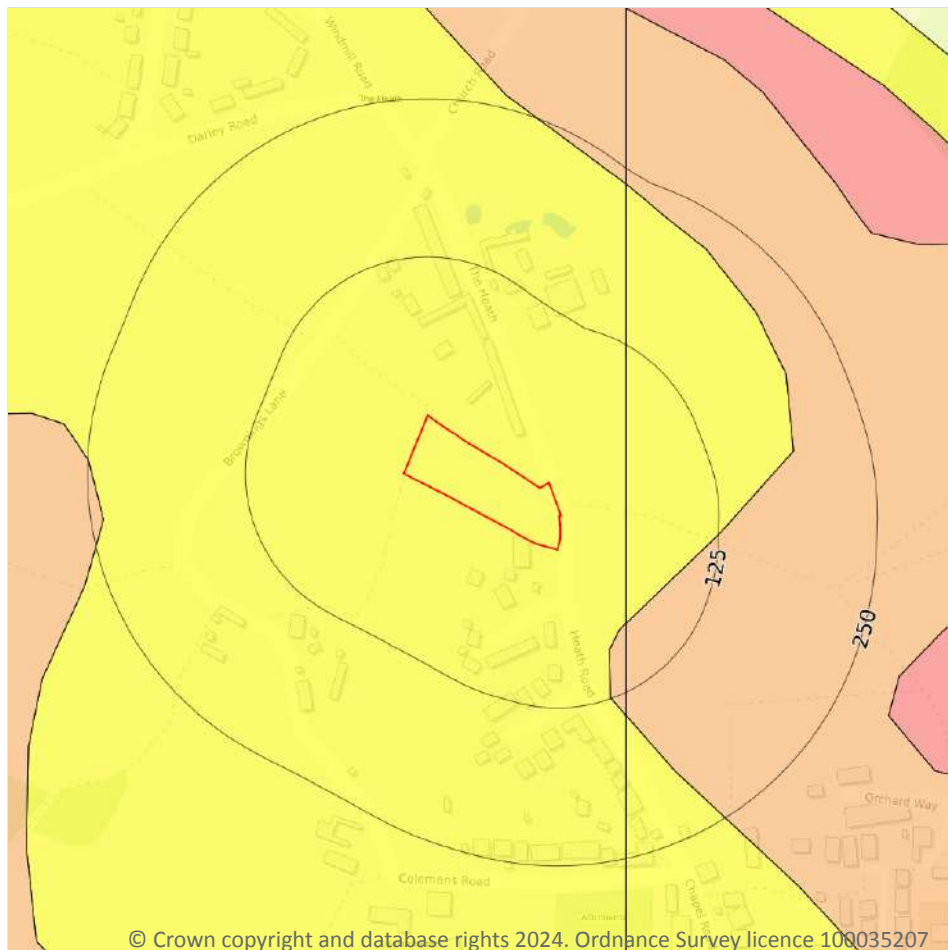
Features are displayed on the Natural ground subsidence - Landslides map on [page 84](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 85](#)

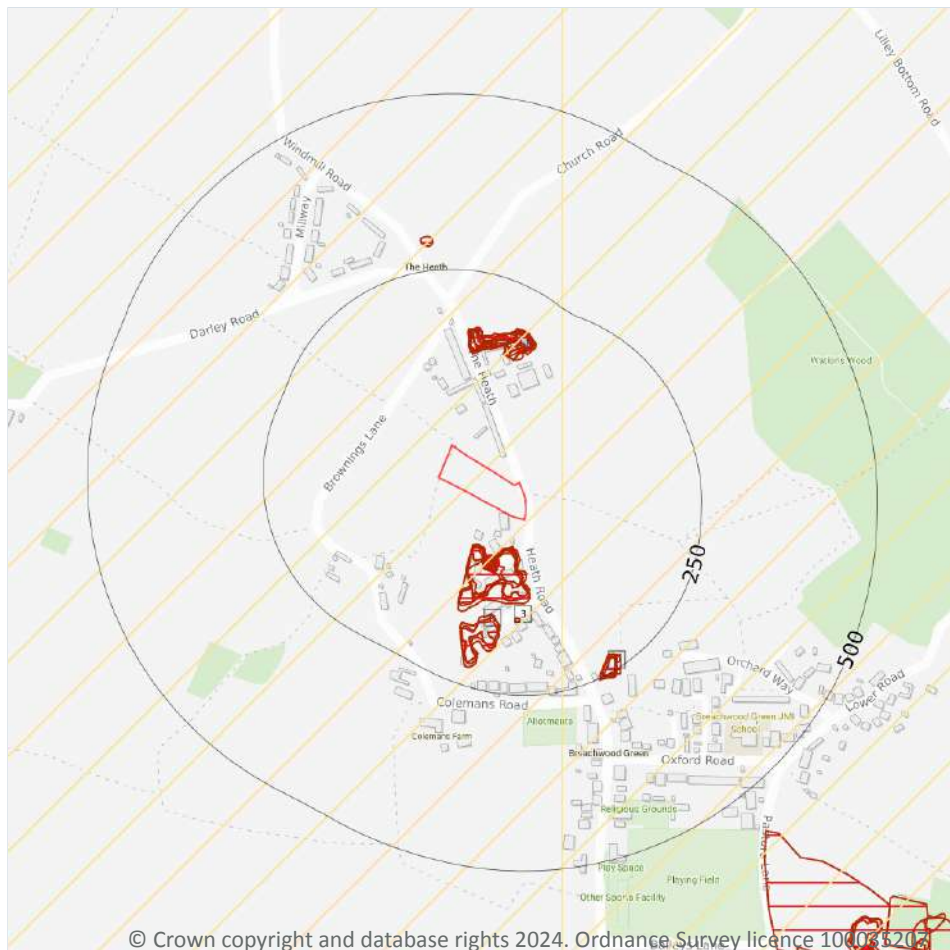
Location	Hazard rating	Details
On site	Very low	Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.



This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- ▭ Surface ground workings
- ▭ Underground workings
- ▭ Underground mining extents
- ▭ Historical mineral planning areas
- ▭ TCA non-coal mining
- Non Coal Mining
 - ▭ Sporadic underground mining of restricted extent possible
 - ▭ Localised small scale underground mining possible
 - ▭ Small scale mining possible
 - ▭ Underground mining known or likely within or in close proximity
 - ▭ Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

1

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

Features are displayed on the Mining and ground workings map on [page 87](#) >

ID	Location	Details	Description
A	72m S	Name: The Heath Clay Pits Address: The Heath, Breachwood Green, HITCHIN, Hertfordshire Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	29
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Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on [page 87](#) >

ID	Location	Land Use	Year of mapping	Mapping scale
A	42m SE	Unspecified Pits	1947	1:10560
A	42m SE	Unspecified Pits	1925	1:10560
A	42m SE	Old Clay Pits	1899	1:10560
A	44m SE	Unspecified Pit	1884	1:10560
A	45m SE	Unspecified Pits	1960	1:10560
A	49m S	Old Clay Pits	1899	1:10560
A	52m S	Unspecified Pits	1925	1:10560
A	57m S	Unspecified Pit	1884	1:10560
A	75m S	Unspecified Pit	1884	1:10560
B	133m N	Ponds	1899	1:10560
B	134m N	Ponds	1960	1:10560
B	135m N	Ponds	1899	1:10560
B	138m N	Ponds	1947	1:10560
B	138m N	Ponds	1925	1:10560
B	138m N	Ponds	1991	1:10000
B	138m N	Ponds	1985	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
B	138m N	Ponds	1975	1:10000
3	140m S	Brick Kiln	1884	1:10560
C	142m S	Unspecified Pits	1947	1:10560
C	142m S	Unspecified Pits	1925	1:10560
C	146m S	Unspecified Pits	1960	1:10560
B	146m N	Unspecified Pit	1884	1:10560
B	149m N	Ponds	1884	1:10560
C	151m S	Unspecified Pits	1925	1:10560
D	227m SE	Pond	1947	1:10560
D	227m SE	Pond	1899	1:10560
D	229m SE	Pond	1899	1:10560
D	229m SE	Pond	1951	1:10560
D	231m SE	Pond	1884	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

0

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

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.



18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

2

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

Features are displayed on the Mining and ground workings map on [page 87 >](#)

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
2	51m E	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.



18.8 The Coal Authority non-coal mining

Records within 500m**0**

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m**0**

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m**0**

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m**0**

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.



18.12 Coal mining

Records on site	0
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Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0
-----------------	---

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

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

18.14 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

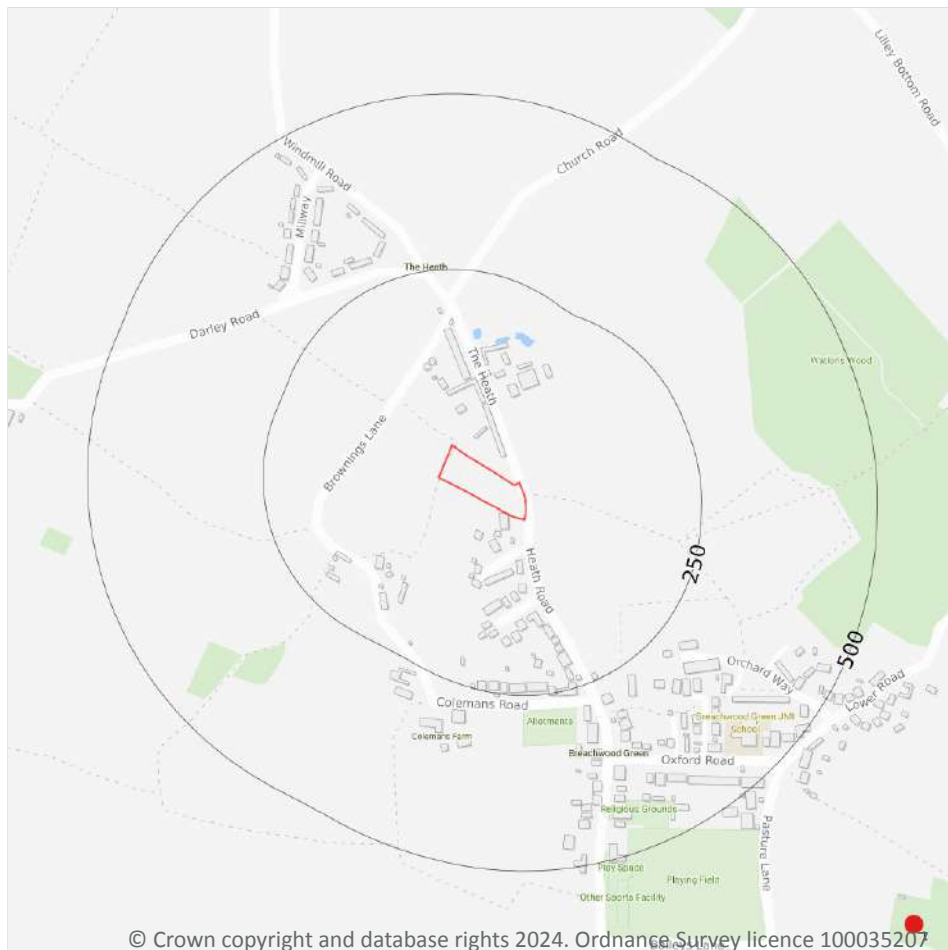
Records on site	0
-----------------	---

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

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



19 Ground cavities and sinkholes



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- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- Mining cavities
- Reported recent incidents
- Historical incidents
- BGS karst database (Point)
- BGS karst database (Line)
- BGS karst database (Area)

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

1

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

Features are displayed on the Ground cavities and sinkholes map on [page 93](#) >

ID	Location	Mine Address	Mineral	Data source	Publisher
1	799m SE	Breachwood Green, Hertfordshire	Chalk	-	-

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.

This data is sourced from Groundsure.



19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

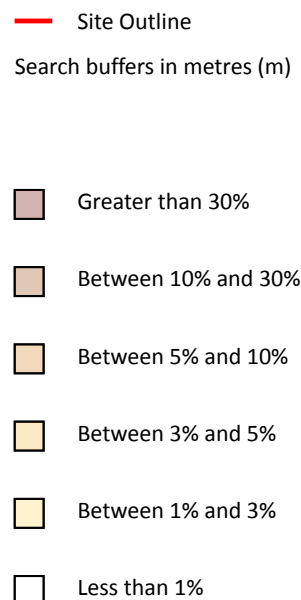
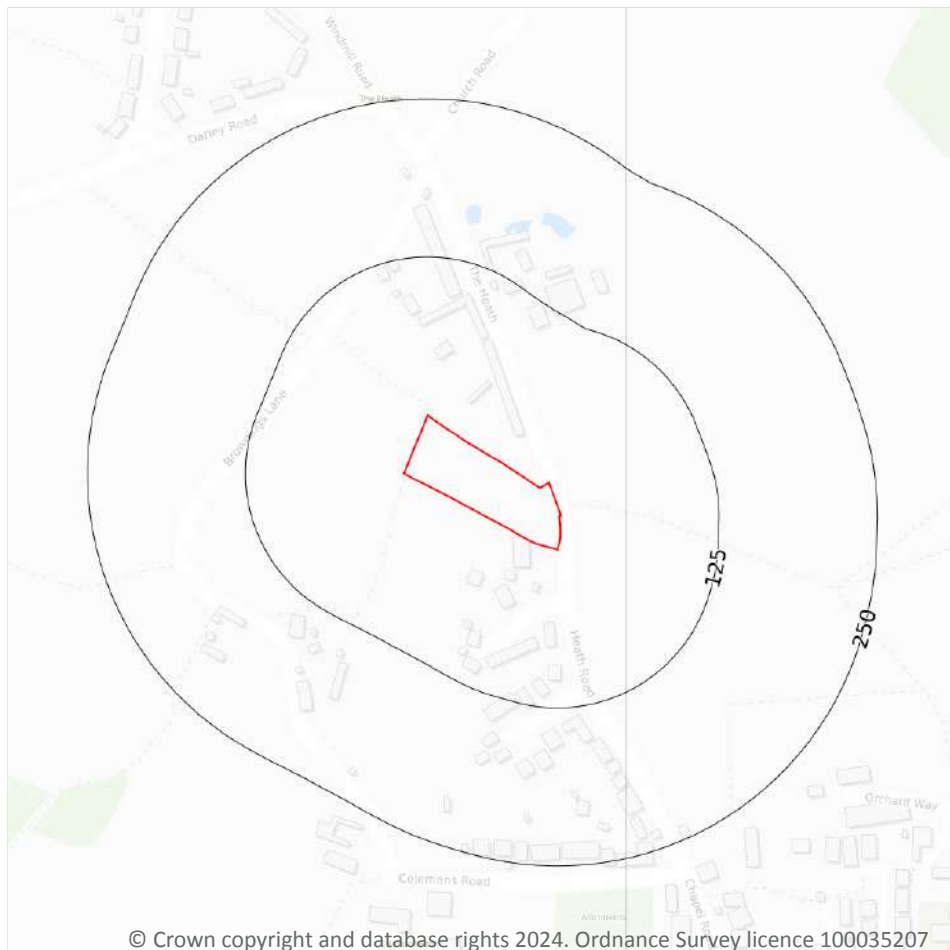
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



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20.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 96](#) >

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



This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

2

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
18m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m**0**

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m**0**

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m**0**

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

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m**0**

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



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0
---------------------	---

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0
---------------------	---

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m	0
---------------------	---

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

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m	0
---------------------	---

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

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m	0
---------------------	---

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

This data is sourced from HS2 Ltd.



Data providers

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

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