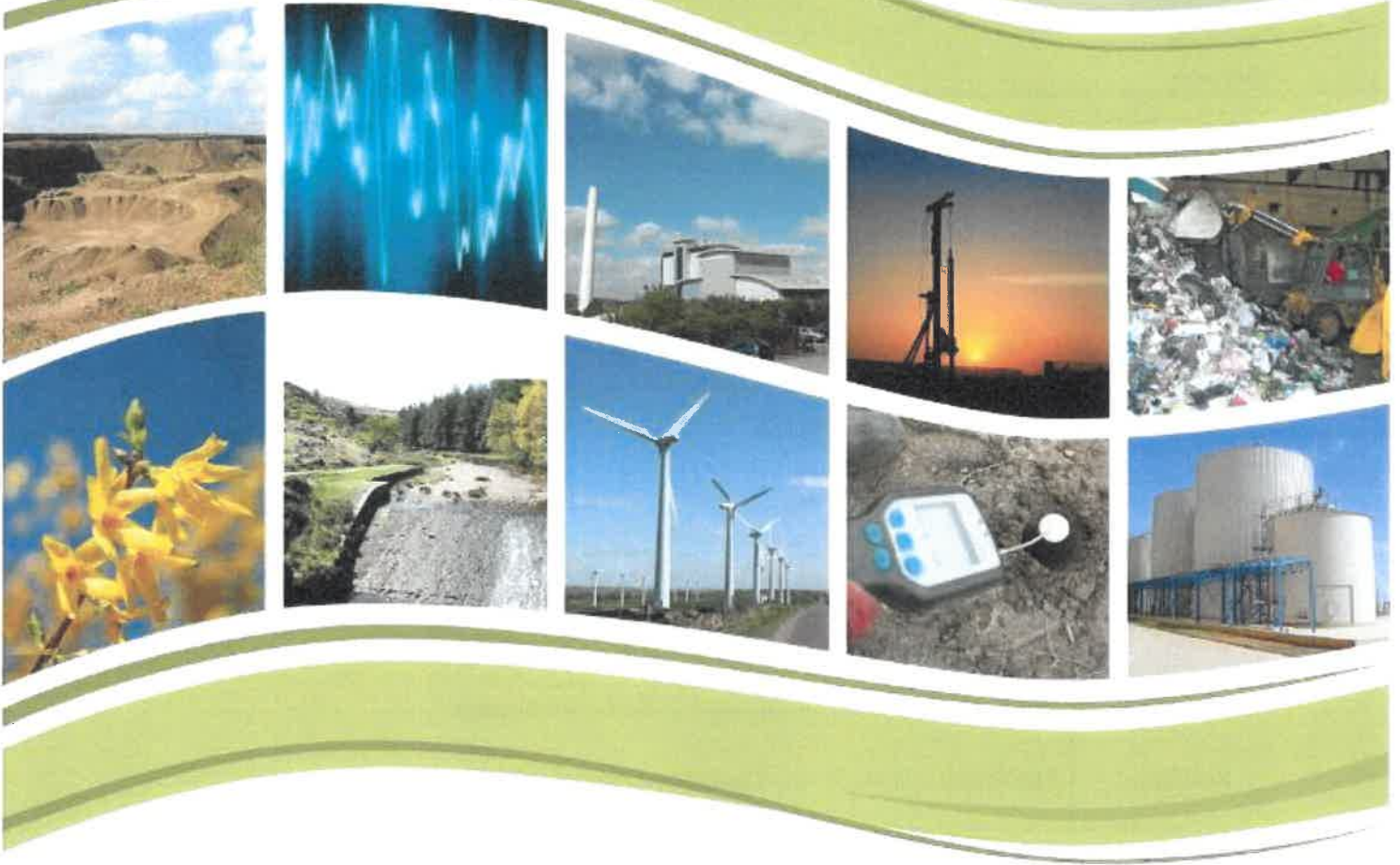




Phase I Geo-Environmental Report

Land off Henthorn Road, Clitheroe

For:

Gladman Developments Ltd.

SHF.1132.159.GE.R.001

Contact Details:

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Phase I Geo-Environmental Report for Land off Henthorn Road Clitheroe

Project:	Land off Henthorn Road, Clitheroe
For:	Gladman Developments Ltd.
Ref:	SHF.1132.159.GE.R.001
Status:	Final
Date:	July 2018
Author:	Dr Stephen Black - BSc (Hons), MSc, PhD. Associate Director
Reviewer:	Nick Brook - BSc (Hons), FGS. Geo-Environmental Engineer
Approver:	Dr Stephen Black - BSc (Hons), MSc, PhD. Associate Director

Disclaimer:

This report has been produced by Enzygo Limited within the terms of the contract with the client and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

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Registered Office Stag House Chipping Wotton-Under-Edge Gloucestershire GL12 7AD

TABLE OF CONTENTS

1.0 INTRODUCTION	1
<i>Background</i>	1
<i>Proposed Development</i>	1
<i>Objectives</i>	1
<i>Risk Classification</i>	2
2.0 SITE SETTING	3
<i>Site Description</i>	3
<i>Current Site Description</i>	3
<i>Surrounding Area</i>	3
3.0 SITE HISTORY	4
4.0 ENVIRONMENTAL SETTING	5
<i>Ground Conditions</i>	5
<i>Groundwater</i>	5
<i>Coal Mining</i>	5
<i>Non-Coal Mining and Cavities</i>	5
<i>Ground Workings</i>	6
<i>Hydrology</i>	6
<i>Radon Risk Potential</i>	6
<i>Natural Hazards Finding</i>	6
<i>Sensitive Land Uses</i>	7
<i>Environmental Sensitivity</i>	7
<i>Current Industrial Land Uses</i>	7
5.0 CONSULTATIONS	8
<i>Regulatory Database</i>	8

<i>Landfill Sites and Waste Treatment Sites</i>	<i>9</i>
6.0 PRELIMINARY CONCEPTUAL MODEL.....	10
7.0 DISCUSSION AND RECOMMENDATIONS	11
<i>Discussion.....</i>	<i>11</i>
<i>Recommendations.....</i>	<i>11</i>
Appendix 1 – Groundsure Reports	12

1.0 INTRODUCTION

Background

- 1.1 Enzygo Limited has been commissioned by Gladman Developments to prepare a Phase I Geo-Environmental Report for a site, located off Henthorn Road, Clitheroe.

Proposed Development

- 1.2 It is our understanding that the proposed development is for residential, with gardens, landscaping and associated infrastructure.

Objectives

- 1.3 The objectives of the study are to:
- Review historical plans, geology, hydrogeology and site sensitivity information to complete a Desk Study. A Groundsure report has been obtained, a copy of which is included in Appendix 1;
 - Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors;
 - Conduct a comprehensive site walkover, to visually assess ground conditions and drainage;
 - Provide a factual and interpretative report relating to the desk study; and
 - Provide preliminary recommendations in relation to environmental risk, potential remedial options and to present an initial assessment of ground engineering considerations.

Risk Classification

- 1.4 Enzygo has utilised the available information, together with our experience to assess the likely risks to development from land quality issues. Definitions of the risk terms used are provided in the table on the following page.

Risk	Description
Dismissed	The risk has been dismissed.
Negligible	No contamination risk has been identified which is likely to affect development.
Low	No significant contaminated land risks have been encountered which would affect development, and there is a low risk that remediation will be required.
Low-Moderate	There are unlikely to be significant contaminated land issue associated with the site which will adversely affect its re-development. However, minor or localised contamination may be present which may require remediation. Remediation should be possible under a discovery strategy and with a call-out service.
Moderate	Some potential contaminated land risks have been encountered or identified which may affect re-development. The risks identified are unlikely to affect the entire site or preclude development. Remediation is considered feasible as part of the development process, and no further investigation is considered necessary.
Moderate-High	Some potentially significant contaminated land risks have been identified at the property that requires remediation. It is recommended that a separate remedial methodology is prepared, supported by a site-specific risk assessment.
High	Significant potential contaminated land risks have been identified and remediation is required; supported by further intrusive ground investigation, risk assessment and remedial design.

- 1.5 Where adverse risks are identified, these are discussed within the report.

2.0 SITE SETTING

Site Description

Table 1) Site location details

Item	Description
Site Address	Land off Henthorn Road, Clitheroe
National Grid Reference	Approximate centre of the site: 372936mE, 440830mN

Current Site Description

- 2.1 The following description has been compiled from the inspection of the site undertaken by an experienced geo-environmental engineer on 11th July 2018.
- 2.2 The site comprises an open grassed field, which generally slopes gently to the south. In the east is a shallow 'gully' with a watercourse at the base, flowing to the south southeast. This area is separated from the rest of the site by a post and wire fence.
- 2.3 There are some trees and hedges, principally around the site boundaries. Two ponds are present on the northern boundary.
- 2.4 The site appears to have been used for grazing and there was no evidence of likely significant contamination or fly-tipped material.

Surrounding Area

- 2.5 Land uses surrounding the site are summarised in Table 2 below:

Table 2) Surrounding land uses

Direction	Land Use
North	Residential development and new construction
East	Residential development and open land, beyond Henthorn Road
South	Open agricultural land
West	Open agricultural land with farm and river beyond, approximately 100m to west

3.0 SITE HISTORY

- 3.1 A review of historical Ordnance Survey maps and information pertinent to the site and within a 250m radius is summarised below:

Table 3) Historical land uses on the Site and within the surrounding 250m.

Map/Imagery Date	On Site	Surrounding Area (within 250m)
1848	Open agricultural land with 'Hough Clough' (watercourse) running through the southeast corner	Open agricultural land, with Mill Lane (now named Henthorn Road) bounding site to southeast
1884	No significant change	As above, with 'Siddows Hall' to southwest and Henthorn Village to the northeast; Mill Lane now renamed Henthorn Road
1964	No significant change; ponds annotated as 'ponds'	No significant change
2014	No significant change	Residential development encroaching on site from the northeast

- 3.2 No new risks are identified from historical maps.

4.0 ENVIRONMENTAL SETTING

Ground Conditions

- 4.1 The British Geological Survey (BGS) records indicate that the site is underlain by the following geological sequence:

Table 4) Geological summary of the site.

Geological Unit	Type	Description	Aquifer Classification
Drift	Glacial Till	sandy clay locally with sand and gravel bands and lenses	Secondary (undifferentiated layers)
Bedrock	Clitheroe Limestone and Hodder Mudstone	limestone and mudstone	Secondary A

- 4.2 No Made Ground is identified on or adjacent to the site by the BGS.
- 4.3 There are no records of landslips within 250m of the site.
- 4.4 Estimates of background estimated soil chemistry for the site suggests no exceedance of residential Generic Assessment Criteria (GAC) values.
- 4.5 There are no BGS borehole records close the site.

Groundwater

- 4.6 The site does not lie within a Source Protection Zone (SPZ).
- 4.7 There are no records of licensed groundwater abstractions within 2000m of the site.

Coal Mining

- 4.8 The site does not lie in a coal mining reporting area. There is no coal mining risk.

Non-Coal Mining and Cavities

- 4.9 There are records of significant non-coal mining activities within 1000m of the site.
- 4.10 There are no records of non-coal mining cavities within 1000m of the site.
- 4.11 There are no records of natural cavities within 1000m of the site.

Ground Workings

- 4.12 A small quarry was present to the north northeast of the site (approximately 200m). This area has subsequently been redeveloped and the former quarry is not considered to present a risk to the site.

Hydrology

- 4.13 There is a watercourse on site, in the east. This is a potential receptor.
- 4.14 There are no records of a surface water abstraction licenses within 500m of the site.
- 4.15 The site is not located within a Flood Risk Zone. An assessment is included in a separate report, prepared by Enzygo.

Radon Risk Potential

- 4.16 The Groundsure Geo Insight report indicates that the site is not in a Radon Affected Area. Therefore, no radon protective measures are necessary.

Natural Hazards Finding

- 4.17 BGS information presented within the Groundsure GeoInsight report identifies the following ground conditions (see Table 5 below):

Table 5) Natural hazards on-site

Hazard	Risk Designation (Groundsure)
Collapsible Ground	Very Low
Compressible Ground	Negligible
Ground Dissolution	Very Low
Landslide	Very Low
Running Sand	Low
Swelling / Shrinking Clay	Very Low

- 4.18 No significant ground subsidence hazards are identified.

Sensitive Land Uses

- 4.19 There are no designated ecological receptors identified on or adjacent to the site.
- 4.20 There are no listed buildings identified on site.

Environmental Sensitivity

- 4.21 Overall the site is currently considered to be of low to moderate environmental sensitivity due to the following:

- Fields (agricultural land use);
- The site is underlain by a Secondary A Aquifer;
- Site is not located within a Source Protection Zone;
- No groundwater abstraction licenses within 1000m of the site; and
- Surface watercourse on site.

- 4.22 The proposed end use of the site is residential and as such future sensitivity will be high for end users.

Current Industrial Land Uses

- 4.23 No new significant risks are identified.
- 4.24 There are no fuel stations within 500m of the site.
- 4.25 There are no records of National Grid High Voltage Underground Electricity Transmission Cables within 500m of the site.
- 4.26 There are no records of National Grid high pressure gas transmission pipelines within 500m of the site.

5.0 CONSULTATIONS

Regulatory Database

- 5.1 The following information has been obtained from a commercially available environmental database.

Table 6) Environmental permits, incidents and registers

Environmental Permits, Incidents and Registers	0 -250m	250-500m	Details
Site determined as contaminated land	0	0	Not applicable
Authorised industrial processes	0	0	Not applicable
Registered radioactive substances	0	0	Not applicable
Records of Part A (2) and Part B Activities	0	0	Not applicable
Enforcements, prohibitions or prosecutions	0	0	Not Applicable
Pollution Incidents	7	5	Nearest incidents are Category 2 (Significant) impacts to water, associated with sewage, to southeast. These are not considered to present a significant risk.
List 1 Dangerous Substance Inventory Sites	0	0	Not Applicable
List 2 Dangerous Substance Inventory Sites	0	0	Not Applicable
Consents issued under the Planning (Hazardous Substances) Act 1990	0	0	Not Applicable
Control of Major Accident Hazard (COMAH)/ Notification of Installations Handling Hazardous Substances (NIHHS) sites	0	0	Not Applicable
Records of Licensed Discharge Consents	6	8	Principally sewage and storm water overflows

- 5.2 No new risks are identified from the regulatory database.

Landfill Sites and Waste Treatment Sites

- 5.3 There are active and historic landfill records within 500m of the site; the active one operated by Suez Recycling 354m to south. These are not considered to present a significant risk to the site, given the distance, elevation and intervening ground conditions.
- 5.4 There are records of waste treatment, transfer or disposal sites within 500m of the site; again, in the area of operation by Suez. These are not considered to present a significant risk to the site, given the distance, elevation and intervening ground conditions.

6.0 PRELIMINARY CONCEPTUAL MODEL

Source	Location	Exposure Pathway	Potential Receptor	Probability of Exposure	Details
Human Health					
Asbestos, hydrocarbons and metals	On-site	Ingestion, dermal and inhalation	Construction Workers	Dismissed	Standard construction PPE will address risk under CDM
			Site users	Dismissed	No likely source
Asbestos, hydrocarbons and metals	Unforeseen contamination	Ingestion, dermal and inhalation	Construction Workers	Dismissed	Standard construction PPE will address risk under CDM
			Site users	Negligible	No significant source identified
Hydrocarbon and metals	Migration from off-site source	Ingestion, dermal and inhalation	Construction Workers	Dismissed	No significant sources identified
			Site users		
Ground Gas	Historic Landfills	Inhalation & Explosive	Construction Workers	Dismissed	No significant nearby source identified
			Site users		
	Made Ground		Construction Workers	Dismissed	No likely significant on-site source identified
			Site users		
Groundwater					
Hydrocarbon and metals	Potential spillage on site	Vertical Migration	Groundwater	Dismissed	Significant widespread impact to soil unlikely
Surface Water					
Hydrocarbon and metals	Potential spillage on site	Horizontal Migration	River Network	Dismissed	Significant widespread impact to soil unlikely
Environmental Receptors					
On-site contaminants		Ingestion dermal and inhalation	Ecology	Dismissed	No receptor
		Direct	Archaeology	Dismissed	No receptor
		Direct	Geology	Dismissed	No receptor
		Phytotoxic	Woodland	Dismissed	No receptor
		Phytotoxic	Crops	Dismissed	No receptor
		Ingestion dermal and inhalation	Livestock	Dismissed	No receptor
Building Services					
On site contaminants		Direct	Historic Buildings	Dismissed	No receptor
		Direct	Proposed Buildings	Dismissed	No source identified
		Permeate into pipework	Water Pipes	Dismissed	Water Authority Requirements to be followed

7.0 DISCUSSION AND RECOMMENDATIONS

Discussion

- 7.1 There is not considered to be a significant risk of contamination, given the history of the site.
- 7.2 If unforeseen contamination is encountered it is likely to be very limited in extent and readily addressed during development.
- 7.3 It is considered conventional foundations should be suitable for residential properties, founding within the natural undisturbed soils.
- 7.4 At this stage the soils should be assumed to be of medium shrinkability, in accordance with NHBC guidance.
- 7.5 Made Ground is not anticipated within the body of the site.
- 7.6 Soakaways are unlikely to be suitable. Testing is being carried out and will be reported separately.

Recommendations

- 7.7 A ground investigation should be undertaken to provide design information for future development works and assess land quality issues.
- 7.8 It is recommended that the ground investigation includes:
 - Trial pits and window sampler holes across the site to confirm ground conditions;
 - Installations and return monitoring visits to measure groundwater and ground gas are not anticipated to be required;
 - *In situ* and laboratory geotechnical and chemical testing of soils; and
 - Preparation of a suitable ground investigation report confirming soil properties and requirements for design of foundations and infrastructure.
- 7.9 As no significant contamination risks have been identified it is considered that any future investigation can be undertaken post-planning under a suitable worded Planning Condition.

Appendix 1 – Groundsure Reports



EmapSite

Masdar House, 1 Reading Road,
Eversley, RG27 ORP

Report Reference: EMS-481313_645769

Your Reference: EMS_481313_645769

Report Date 31 May 2018

Report Delivery Method: Email - pdf

Geo Insight

Address: Henthorn Road, Clitheroe , BB7 3BY,

Dear Sir/ Madam,

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

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

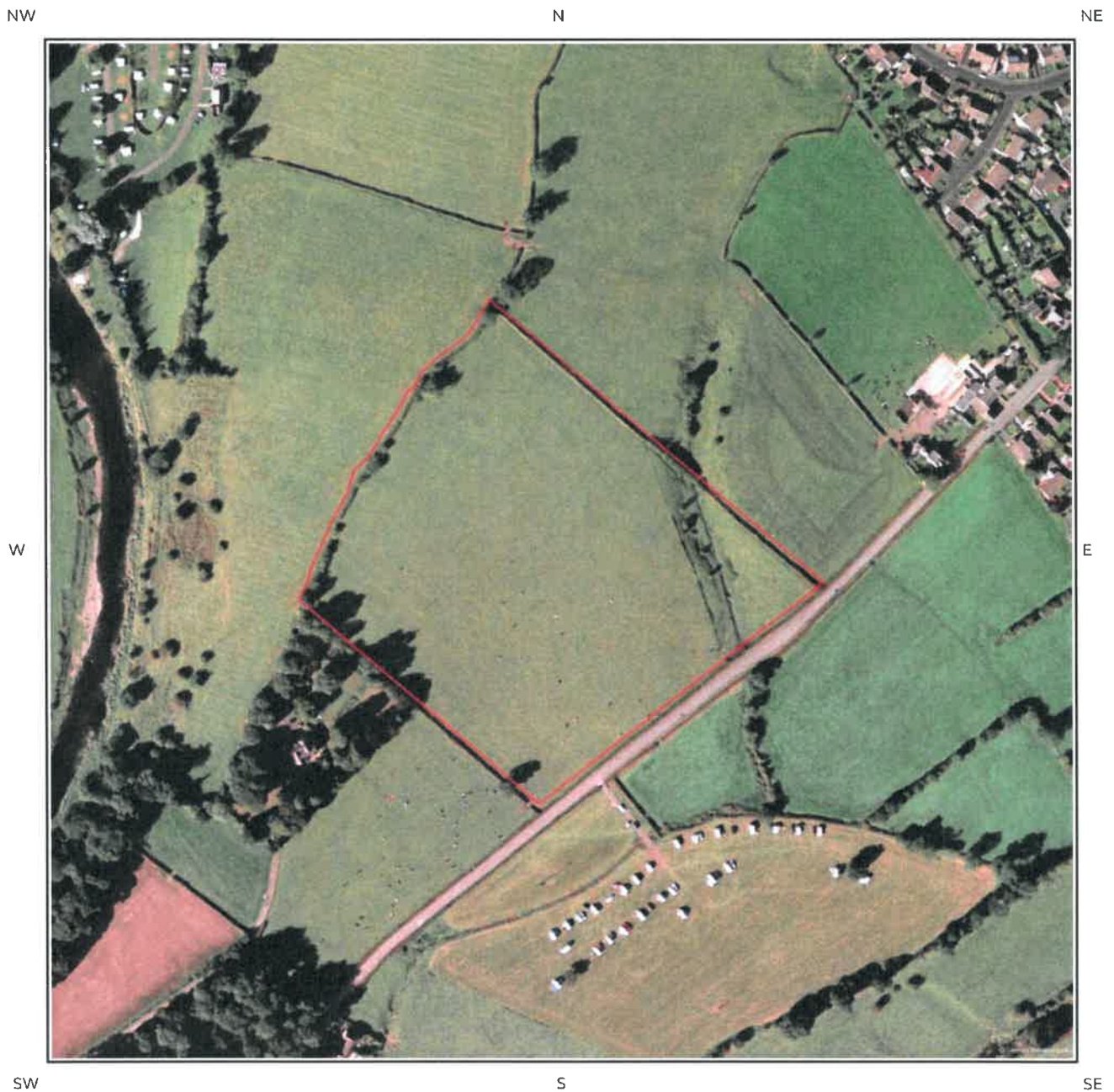
Enc.
Groundsure Geo Insight

Address: Henthorn Road, Clitheroe , BB7 3BY,

Date: 31 May 2018

Reference: EMS-481313_645769

Client: EmapSite



Aerial Photograph Capture date: 08-Apr-2017

Grid Reference: 372936,440830

Site Size: 5.01ha

Contents Page

Contents Page.....	3
Overview of Findings.....	5
1:10,000 Scale Availability.....	8
Availability of 1:10,000 Scale Geology Mapping.....	9
1 Geology (1:10,000 scale).....	10
1.1 Artificial Ground map (1:10,000 scale).....	10
1. Geology 1:10,000 scale.....	11
1.1 Artificial Ground.....	11
1.2 Superficial Deposits and Landslips map (1:10,000 scale).....	12
1.2 Superficial Deposits and Landslips.....	13
1.2.1 Superficial Deposits/ Drift Geology.....	13
1.2.2 Landslip.....	13
1.3 Bedrock and linear features map (1:10,000 scale).....	14
1.3 Bedrock and linear features.....	15
1.3.1 Bedrock/ Solid Geology.....	15
1.3.2 Linear features.....	15
2 Geology 1:50,000 Scale.....	16
2.1 Artificial Ground map.....	16
2. Geology 1:50,000 scale.....	17
2.1 Artificial Ground.....	17
2.1.1 Artificial/ Made Ground	17
2.1.2 Permeability of Artificial Ground.....	17
2.2 Superficial Deposits and Landslips map (1:50,000 scale).....	18
2.2 Superficial Deposits and Landslips.....	19
2.2.1 Superficial Deposits/ Drift Geology.....	19
2.2.2 Permeability of Superficial Ground	19
2.2.3 Landslip.....	19
2.2.4 Landslip Permeability.....	19
2.3 Bedrock and linear features map (1:50,000 scale).....	20
2.3 Bedrock, Solid Geology & linear features.....	21
2.3.1 Bedrock/Solid Geology.....	21
2.3.2 Permeability of Bedrock Ground.....	21
2.3.3 Linear features.....	21
3 Radon Data.....	22
3.1 Radon Affected Areas.....	22
3.2 Radon Protection.....	22
4 Ground Workings map.....	23
4 Ground Workings.....	24
4.1 Historical Surface Ground Working Features derived from Historical Mapping.....	24
4.2 Historical Underground Working Features derived from Historical Mapping.....	24
4.3 Current Ground Workings.....	24
5 Mining, Extraction & Natural Cavities.....	26
5.1 Historical Mining.....	26
5.2 Coal Mining.....	26
5.3 Johnson Poole and Bloomer.....	26
5.4 Non-Coal Mining.....	26
5.5 Non-Coal Mining Cavities.....	27
5.6 Natural Cavities.....	27
5.7 Brine Extraction.....	27
5.8 Gypsum Extraction.....	27
5.9 Tin Mining.....	28
5.10 Clay Mining.....	28
6 Natural Ground Subsidence.....	29
6.1 Shrink-Swell Clay map.....	29
6.2 Landslides map.....	30
6.3 Ground Dissolution of Soluble Rocks map.....	31
6.4 Compressible Deposits map.....	32
6.5 Collapsible Deposits map.....	33
6.6 Running Sand map.....	34

6 Natural Ground Subsidence.....	35
6.1 Shrink-Swell Clays.....	35
6.2 Landslides.....	35
6.3 Ground Dissolution of Soluble Rocks.....	35
6.4 Compressible Deposits.....	36
6.5 Collapsible Deposits.....	36
6.6 Running Sands.....	36
7 Borehole Records.....	38
8 Estimated Background Soil Chemistry.....	39
9 Railways and Tunnels map.....	40
9 Railways and Tunnels.....	41
9.1 Tunnels	41
9.2 Historical Railway and Tunnel Features	41
9.3 Historical Railways.....	42
9.4 Active Railways.....	42
9.5 Railway Projects.....	42

Overview of Findings

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

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

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

Section 1: Geology 1:10,000 Scale

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

Section 2: Geology 1:50,000 Scale

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

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

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

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

Yes

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

Yes

Section 3: Radon

3. Radon

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

The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

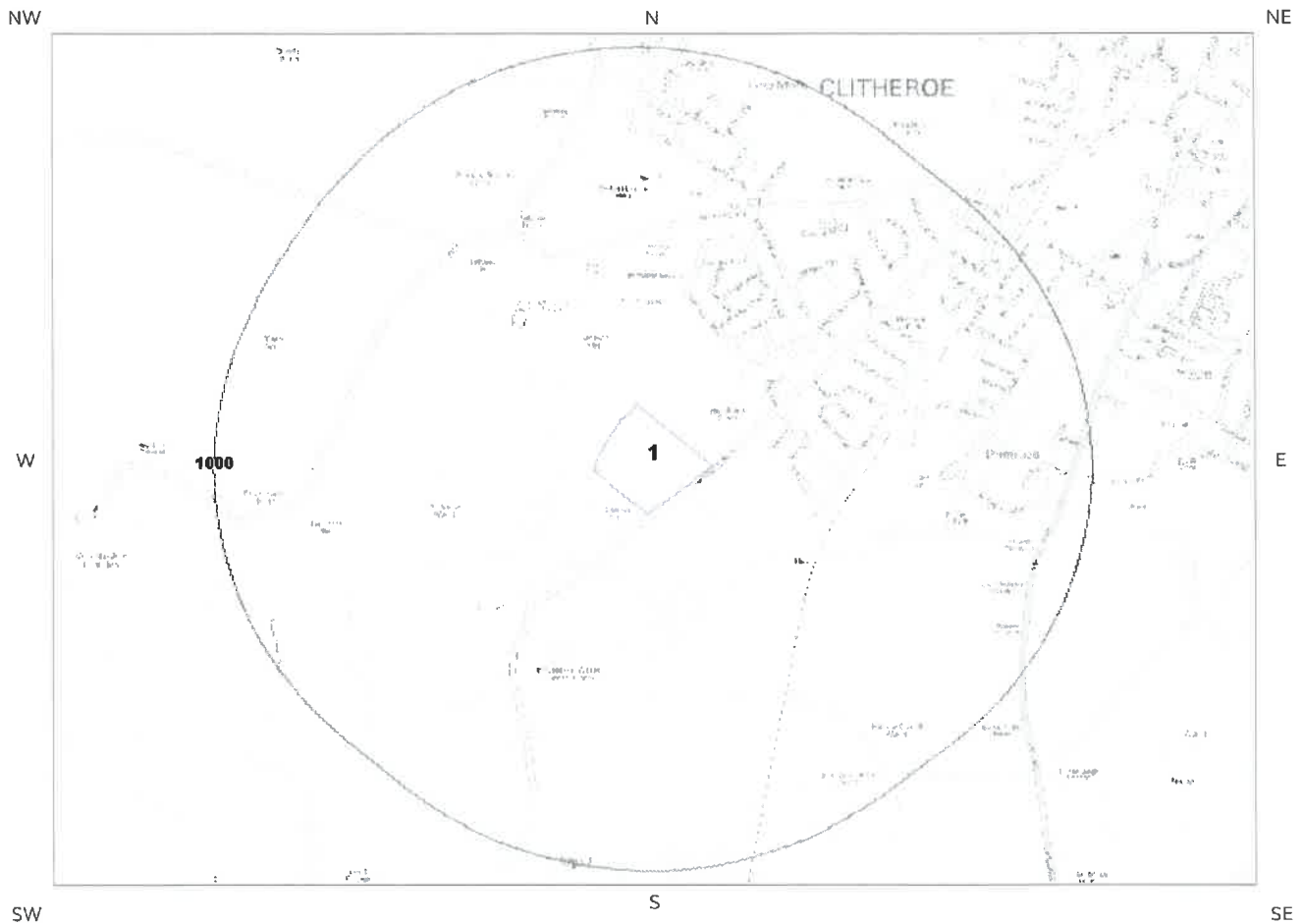
	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	7	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities

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

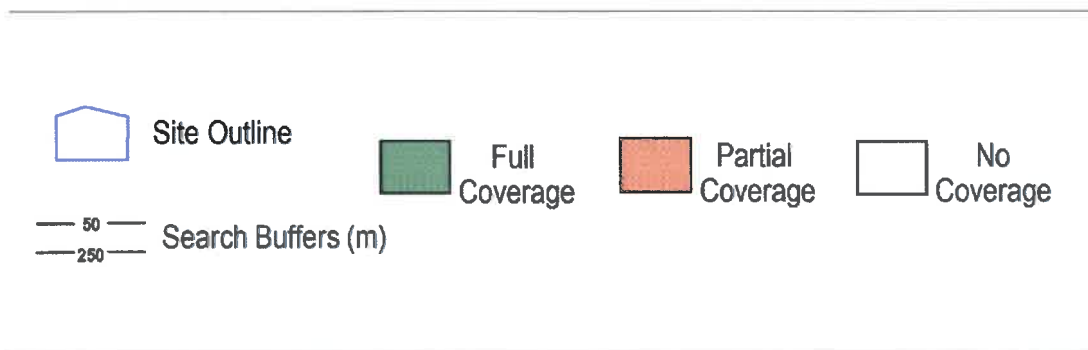
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence					
6.1 Shrink-Swell Clay	On-site				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Very Low				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Very Low				
Section 7: Borehole Records					
7 BGS Recorded Boreholes	On-site	0-50m	51-250		
	0	0	0		
Section 8: Estimated Background Soil Chemistry					
8 Records of Background Soil Chemistry	On-site	0-50m	51-250		
	3	2	0		
Section 9: Railways and Tunnels					
9.1 Tunnels	On-site	0-50m	51-250	250-500	
	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

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

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage

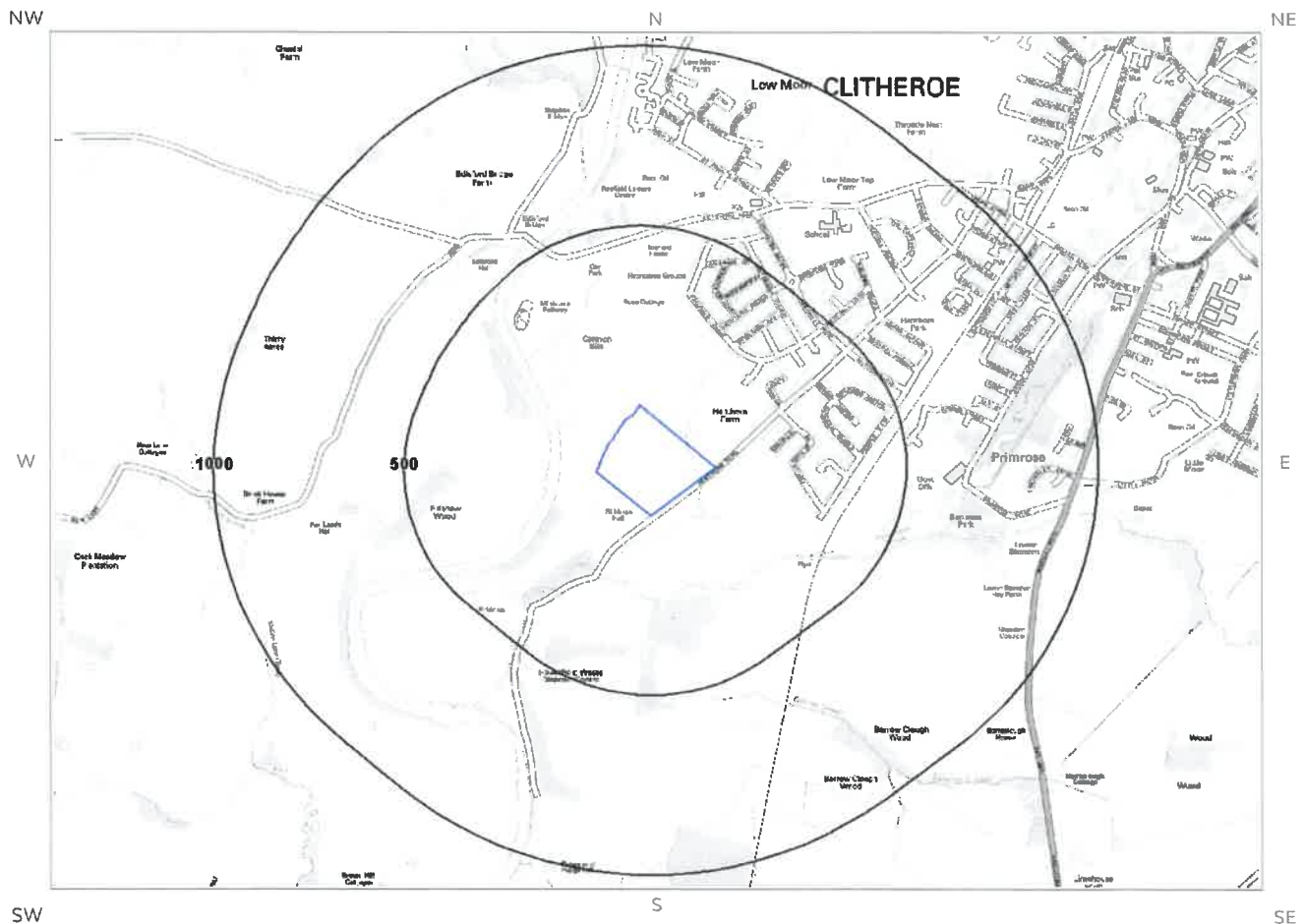
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

The definitions of coverage are as follows:

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

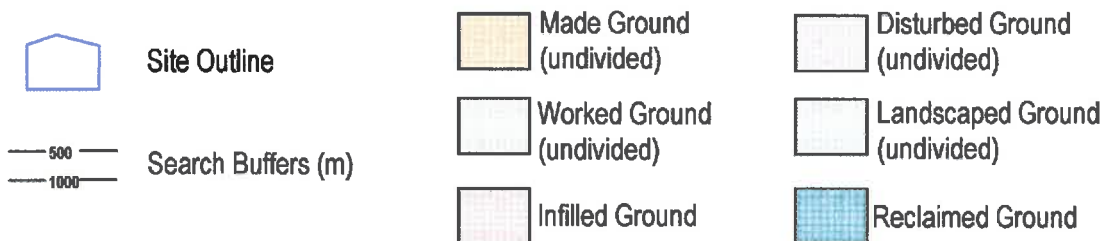
1 Geology (1:10,000 scale).

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



Artificial Ground Legend

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1. Geology 1:10,000 scale

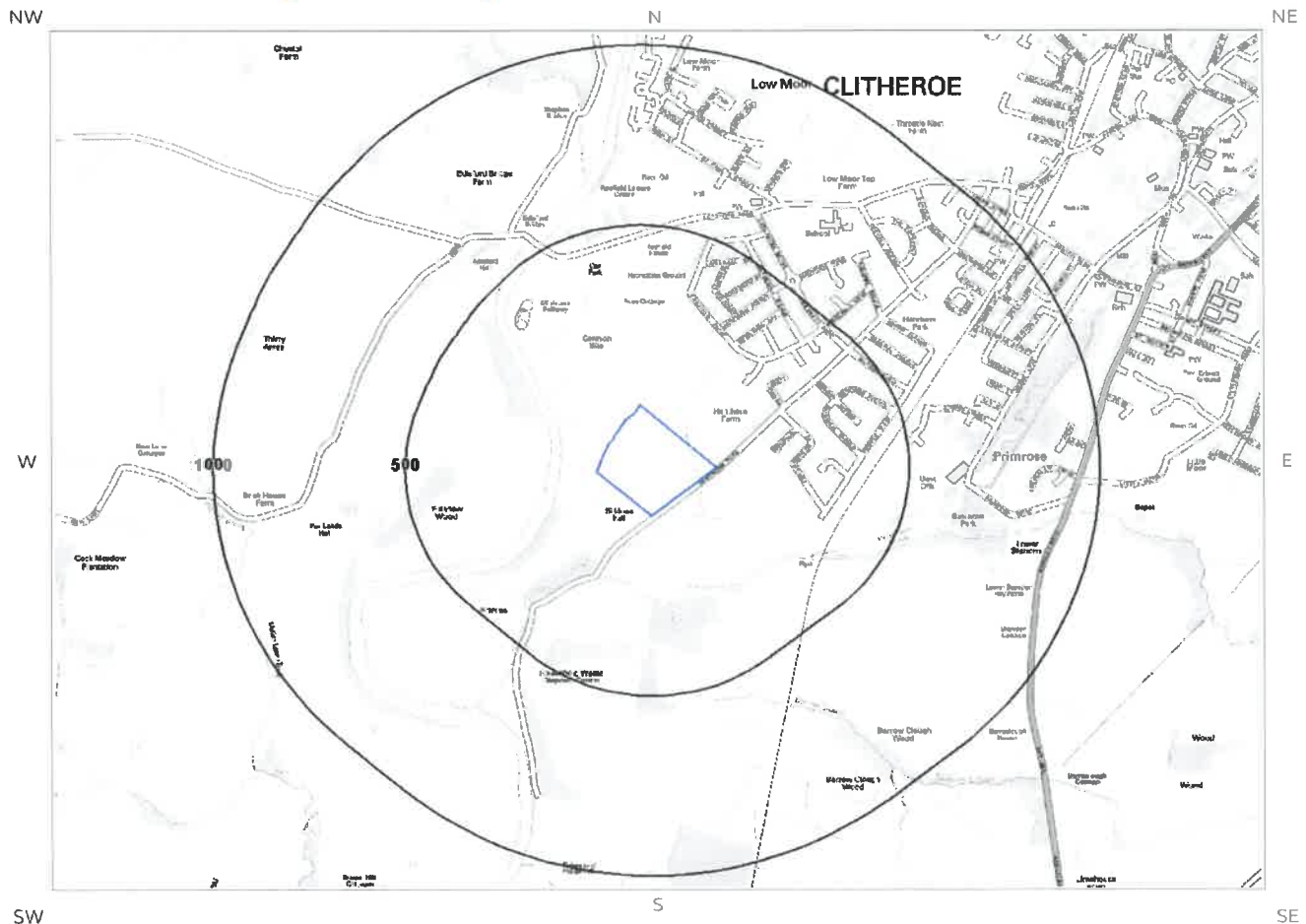
1.1 Artificial Ground

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

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

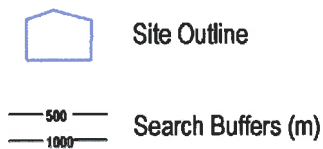
Database searched and no data found.

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



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

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

1.2.1 Superficial Deposits/ Drift Geology

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

Database searched and no data found.

1.2.2 Landslip

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

Database searched and no data found.

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

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

1.3 Bedrock and linear features

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

1.3.1 Bedrock/ Solid Geology

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

Database searched and no data found at this scale.

1.3.2 Linear features

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

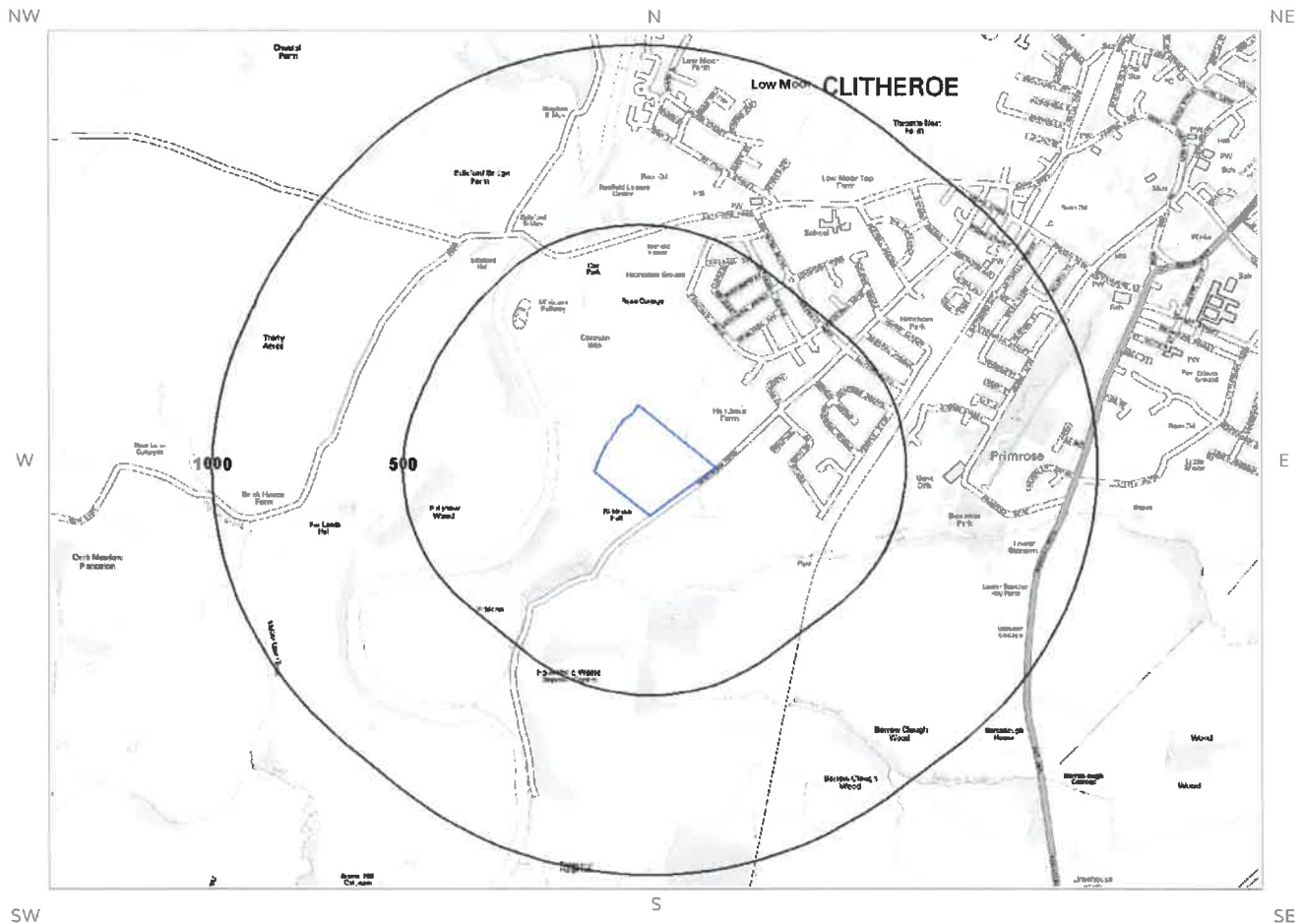
Database searched and no data found at this scale.

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

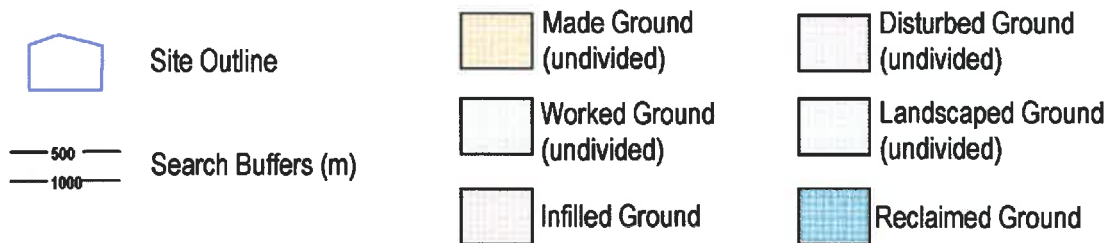
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 068

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

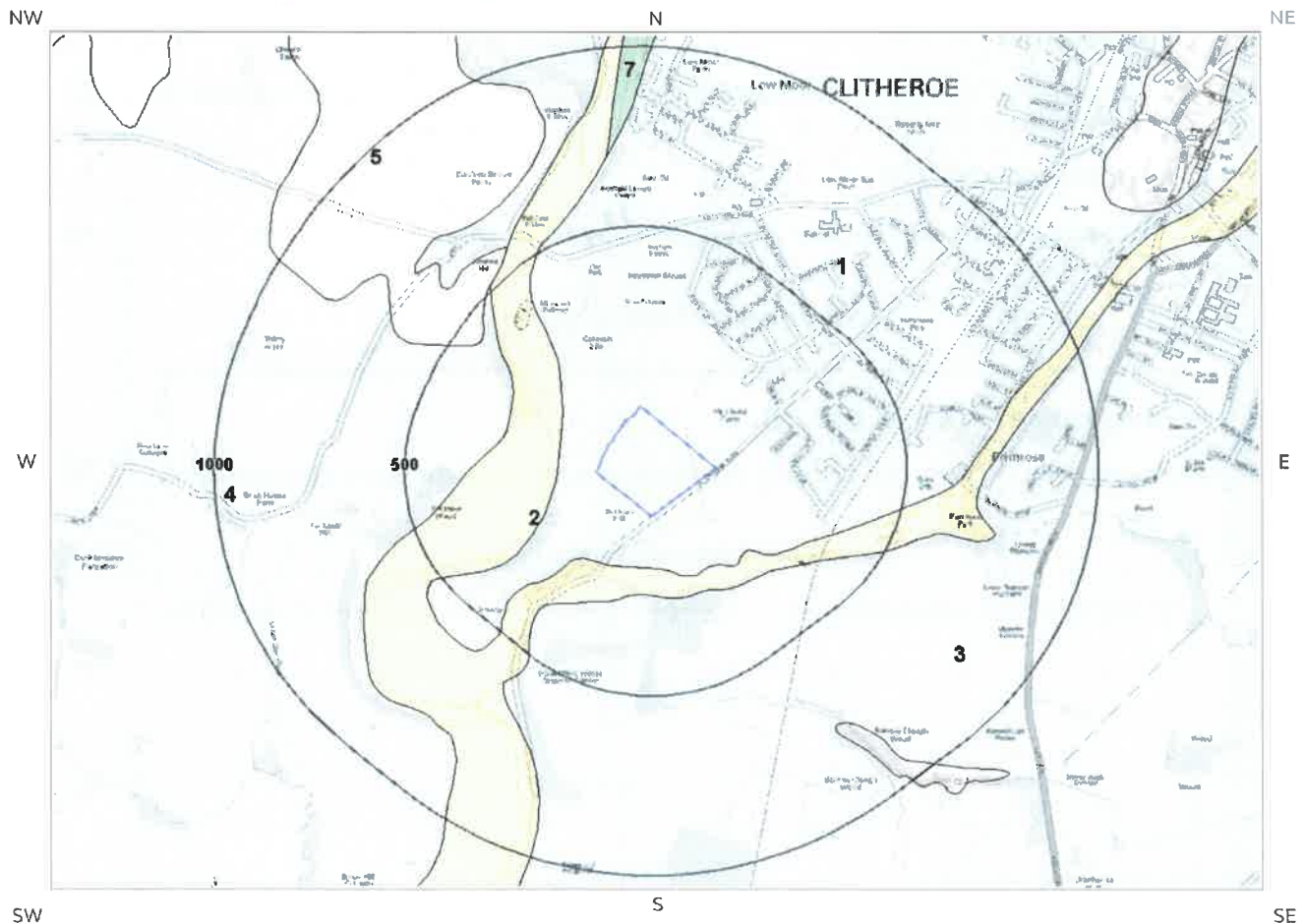
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

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

Database searched and no data found.

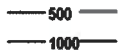
2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	102.0	W	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	218.0	S	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
4	257.0	W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
5	434.0	NW	GLLDD-XCZ	GLACIOLACUSTRINE DEPOSITS, DEVENSIAN	CLAY AND SILT

2.2.2 Permeability of Superficial Ground

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

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	High	Low

2.2.3 Landslip

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

Database searched and no data found.

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

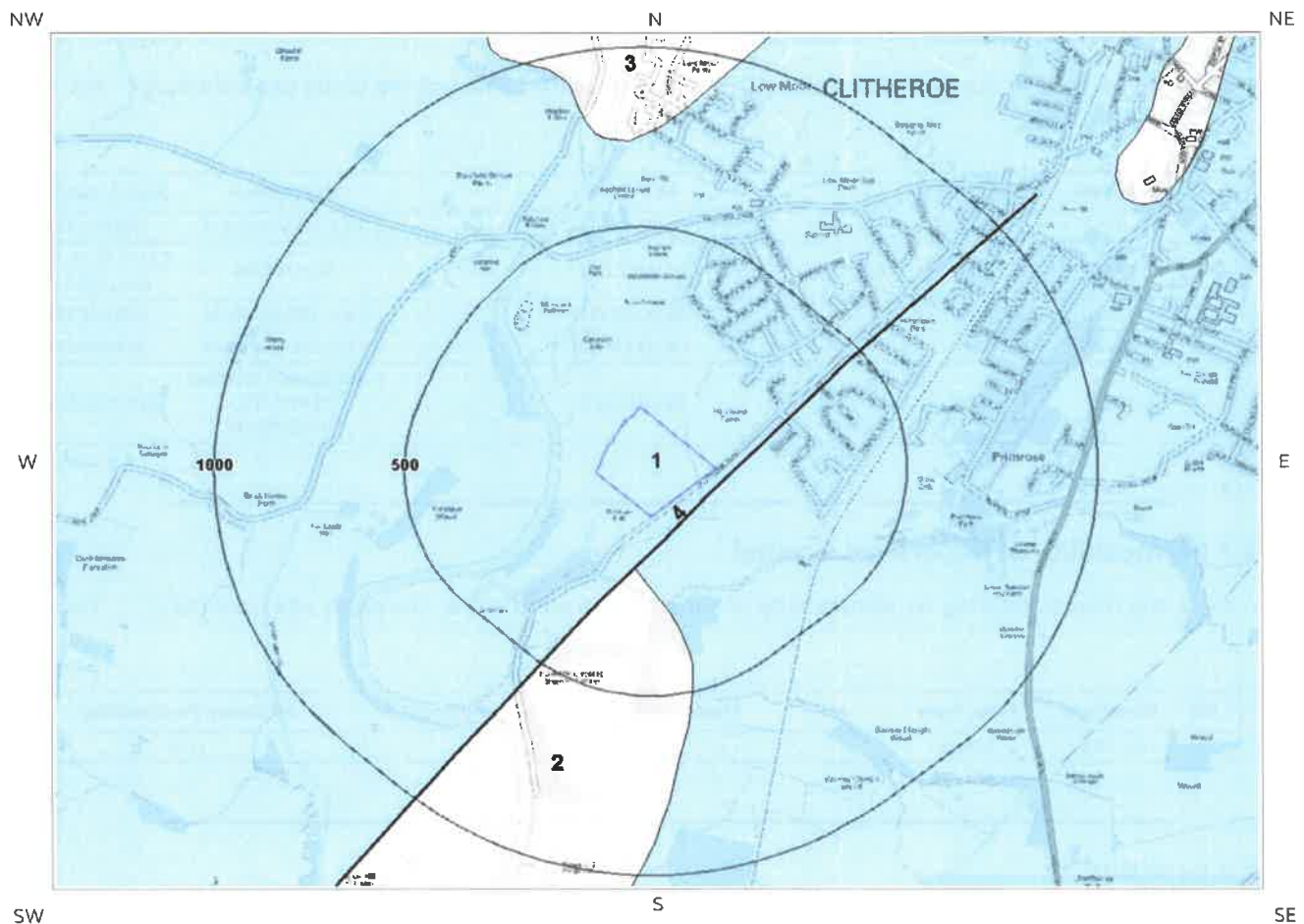
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

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

Database searched and no data found.

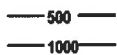
2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 068

2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	CLHOM-MDST	CLITHEROE LIMESTONE FORMATION AND HODDER MUDSTONE FORMATION (UNDIFFERENTIATED) - MUDSTONE	WISEAN
2	149.0	S	PRMT-STMD	PERMIAN ROCKS AND TRIASSIC ROCKS (UNDIFFERENTIATED) - SANDSTONE AND MUDSTONE	-

2.3.2 Permeability of Bedrock Ground

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

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

2.3.3 Linear features

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

ID	Distance	Direction	Category Description	Feature Description
4	38.0	SE	FAULT	Fault, inferred

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

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

3 Radon Data

3.1 Radon Affected Areas

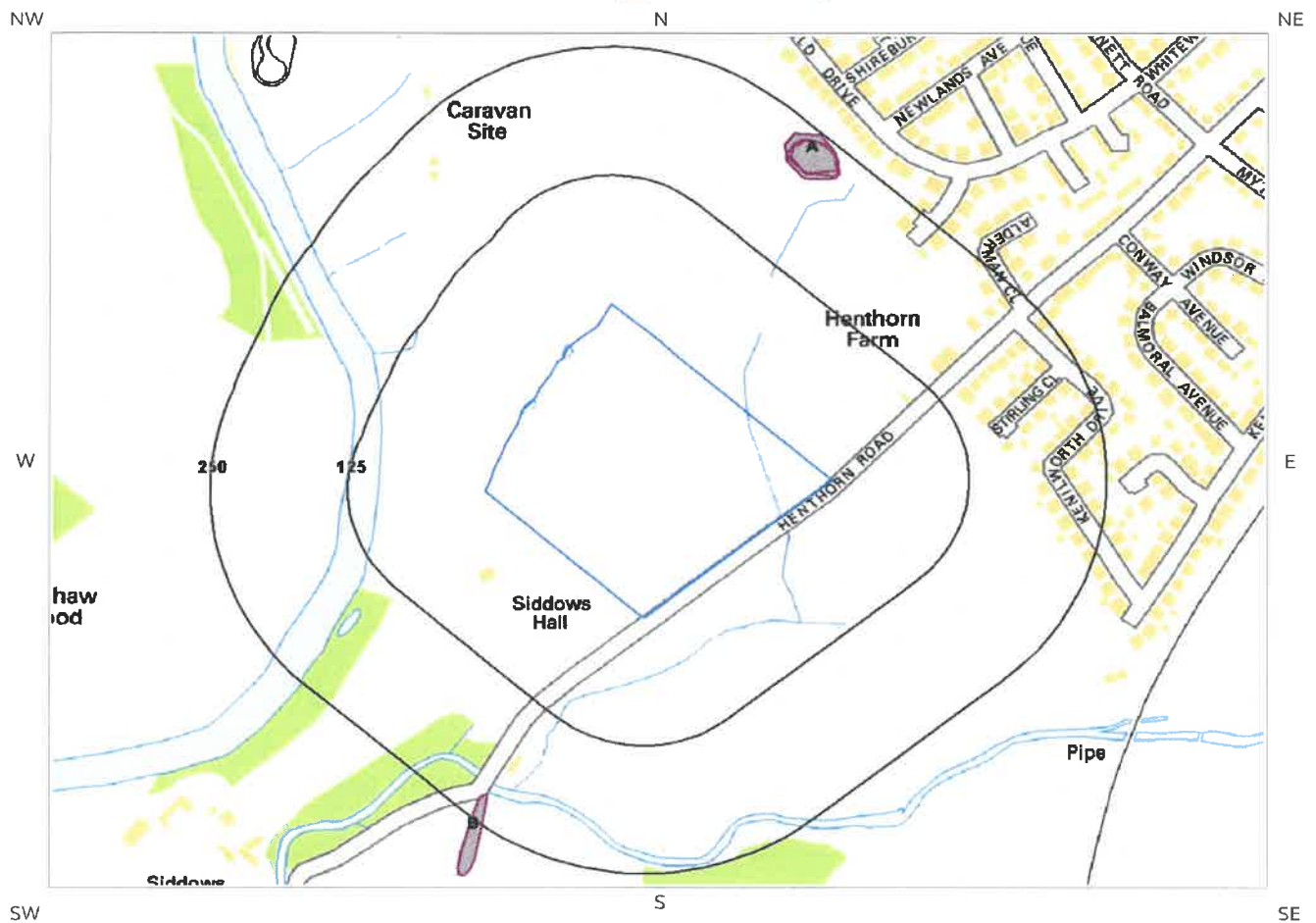
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

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

3.2 Radon Protection

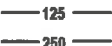
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	206.0	NE	373088 441129	Unspecified Pit	1930
2A	206.0	NE	373088 441129	Unspecified Pit	1910
3A	206.0	NE	373088 441129	Unspecified Pit	1938
4A	210.0	NE	373091 441130	Unspecified Pit	1950
5A	211.0	NE	373088 441135	Unspecified Old Quarry	1911
6B	224.0	SW	372780 440470	Unspecified Heap	1930
7B	224.0	SW	372780 440470	Unspecified Heap	1938

4.2 Historical Underground Working Features derived from Historical Mapping

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

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

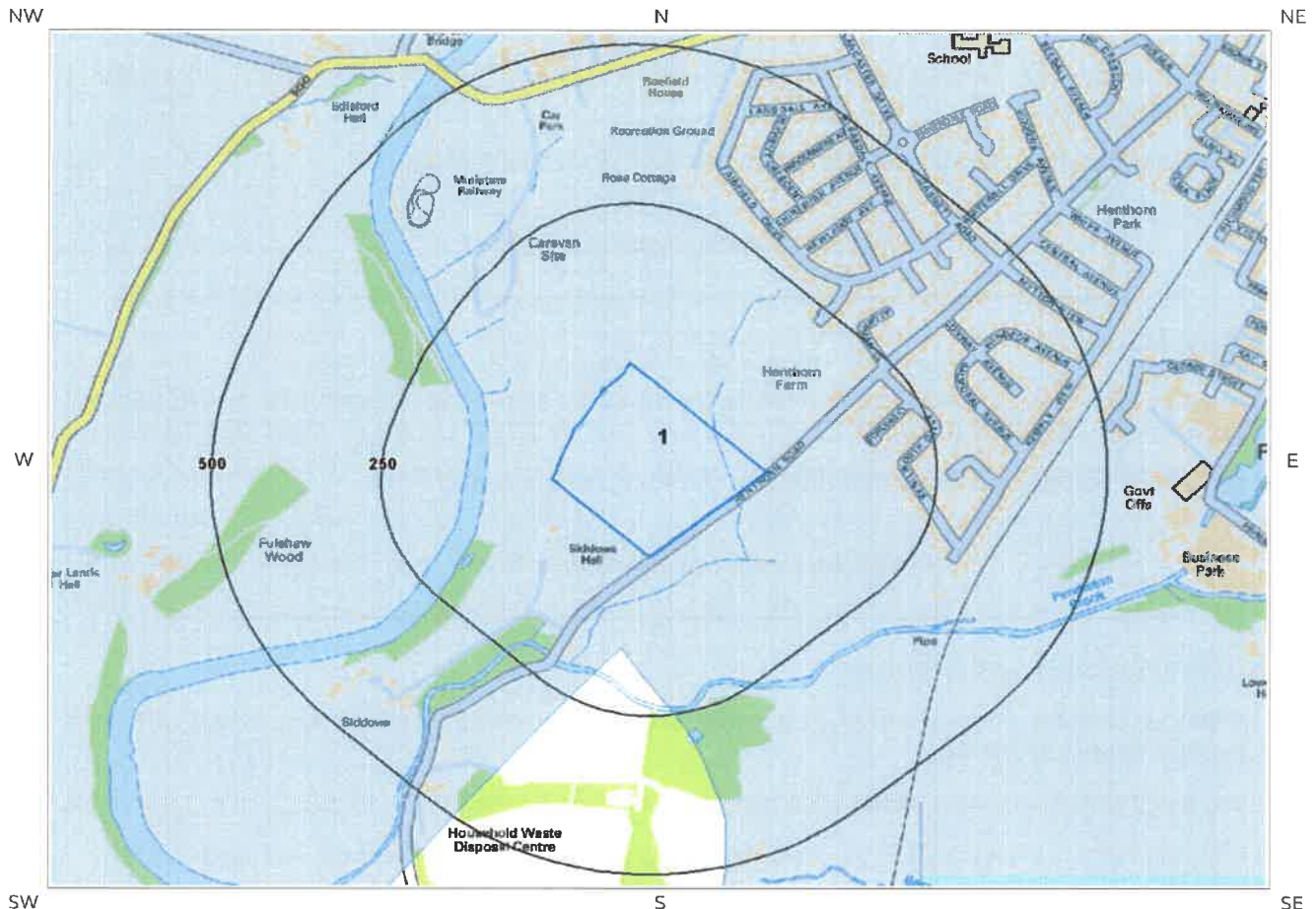
4.3 Current Ground Workings

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

Are there any BGS Current Ground Workings within 1000m of the study site boundary? No

Database searched and no data found.

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

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

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

Database searched and no data found.

5.2 Coal Mining

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

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

Database searched and no data found.

5.3 Johnson Poole and Bloomer

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

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

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

5.4 Non-Coal Mining

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

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

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

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Vein Mineral	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
Not shown	686.0	S	Not available	Vein Mineral	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

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

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

Database searched and no data found.

5.6 Natural Cavities

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

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

Database searched and no data found.

5.7 Brine Extraction

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

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

Database searched and no data found.

5.8 Gypsum Extraction

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

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

Database searched and no data found.

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

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

Database searched and no data found.

5.10 Clay Mining

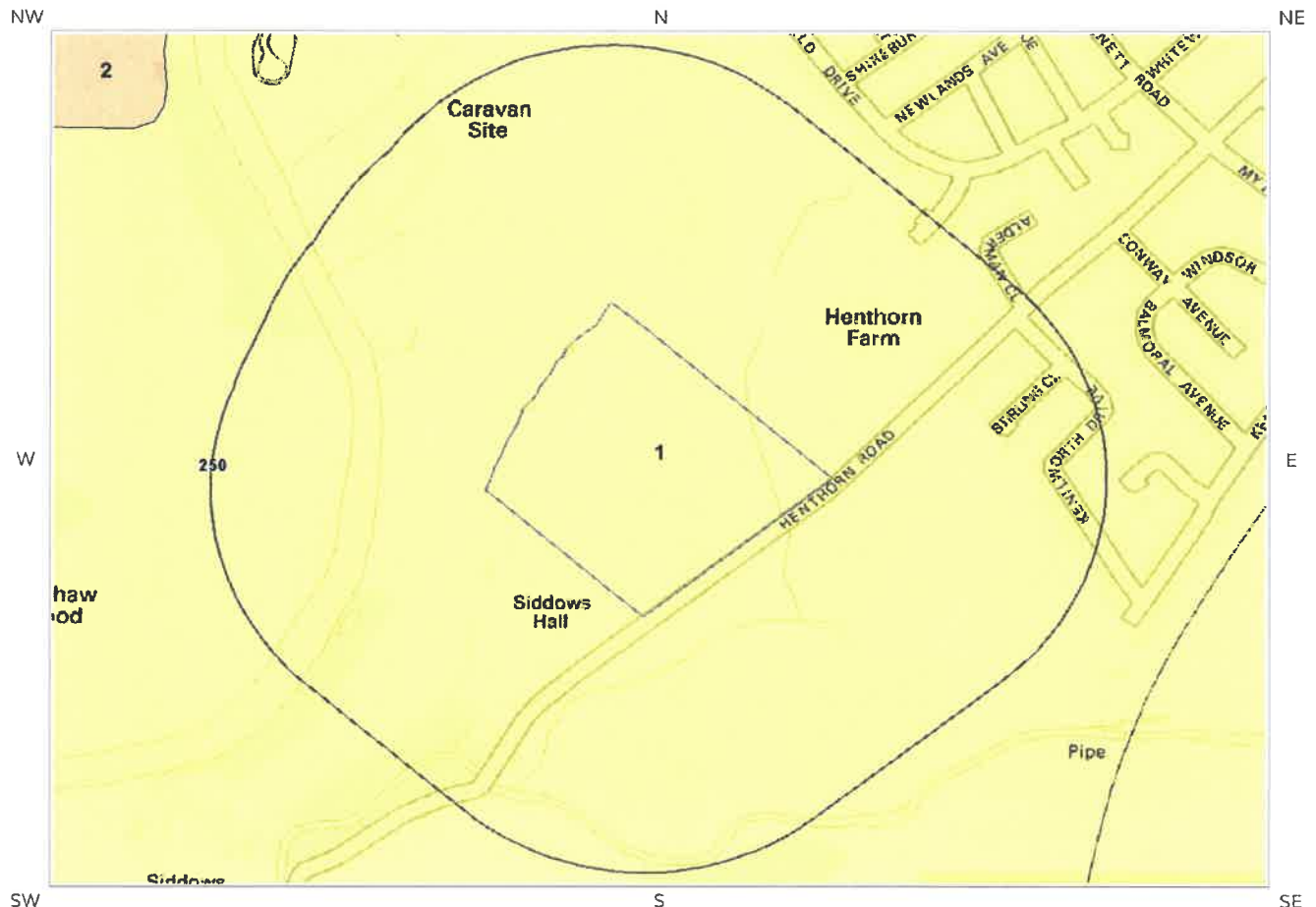
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

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

Database searched and no data found.

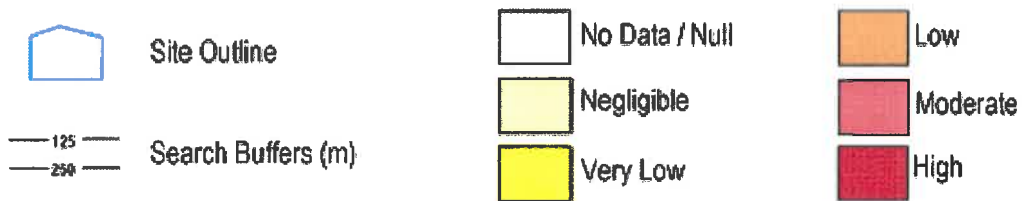
6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

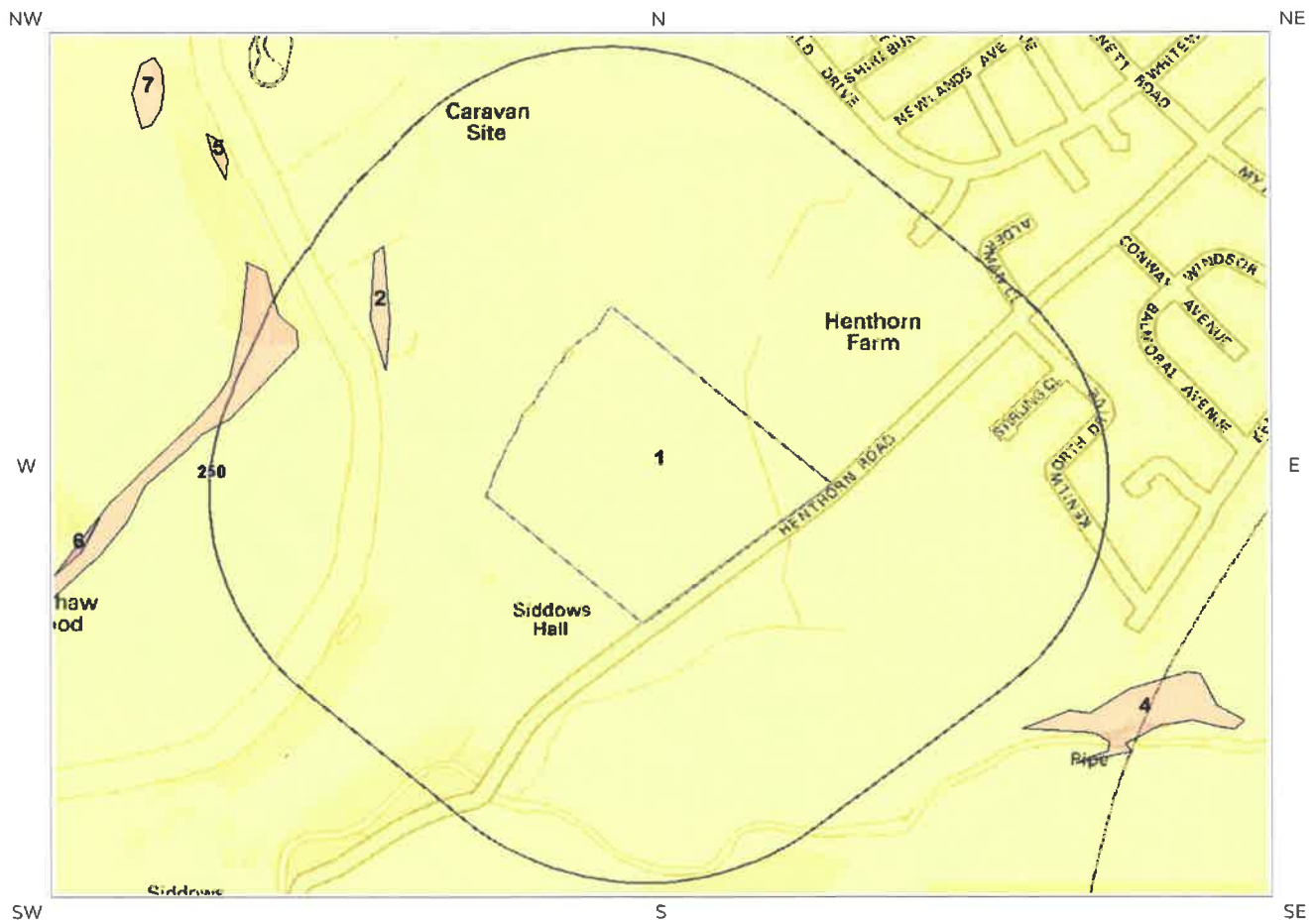


Shrink Swell Clay Legend

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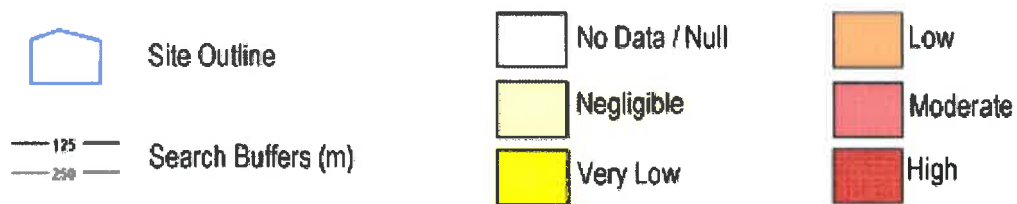


6.2 Landslides map

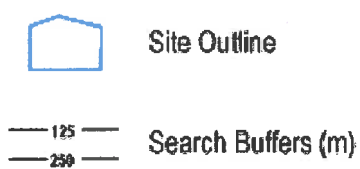
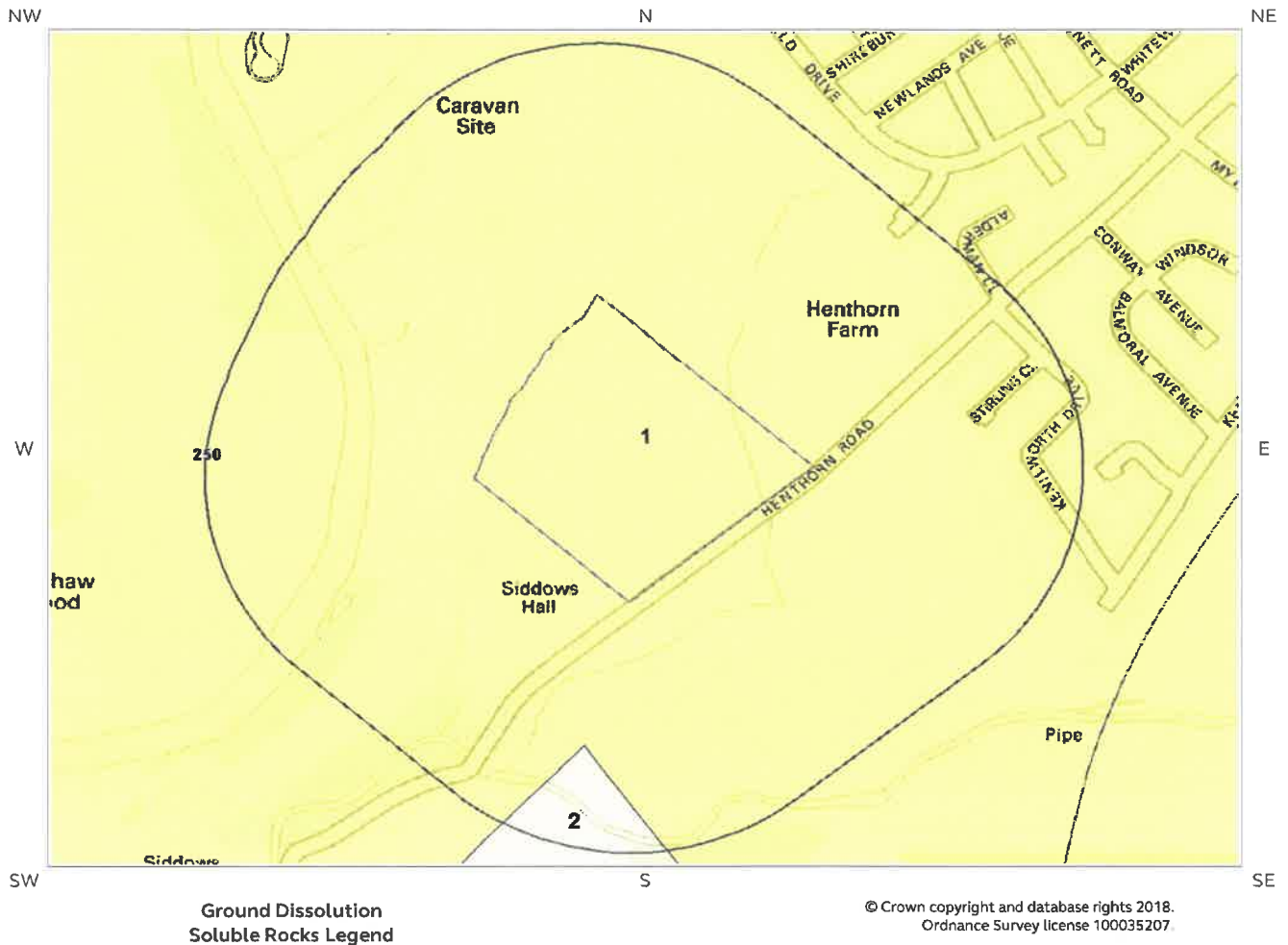


Landslides Legend

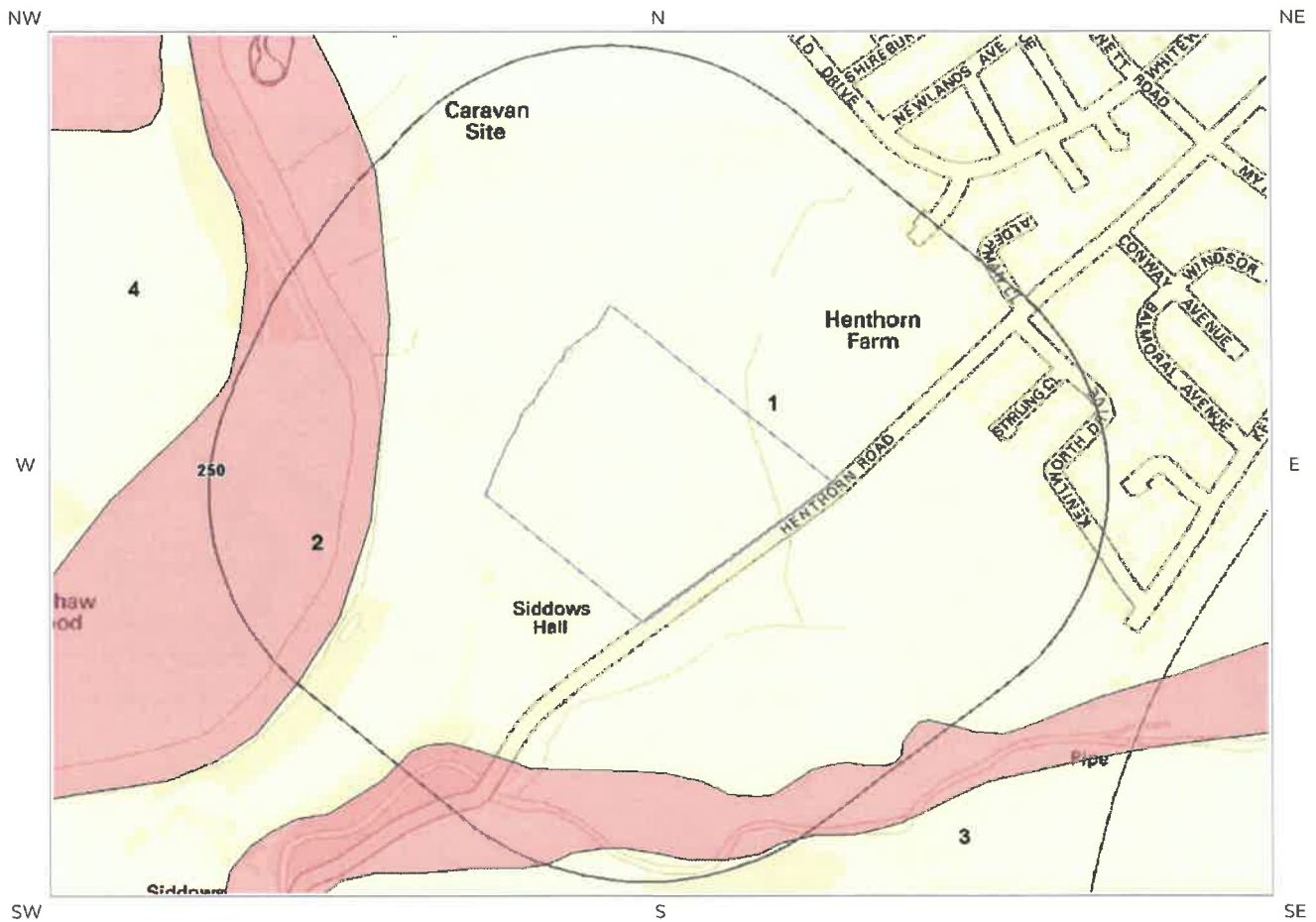
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6.3 Ground Dissolution of Soluble Rocks map

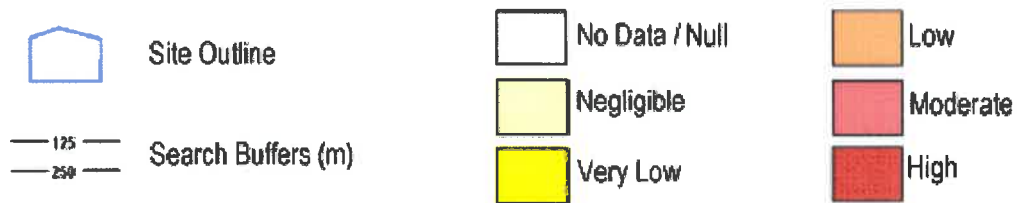


6.4 Compressible Deposits map

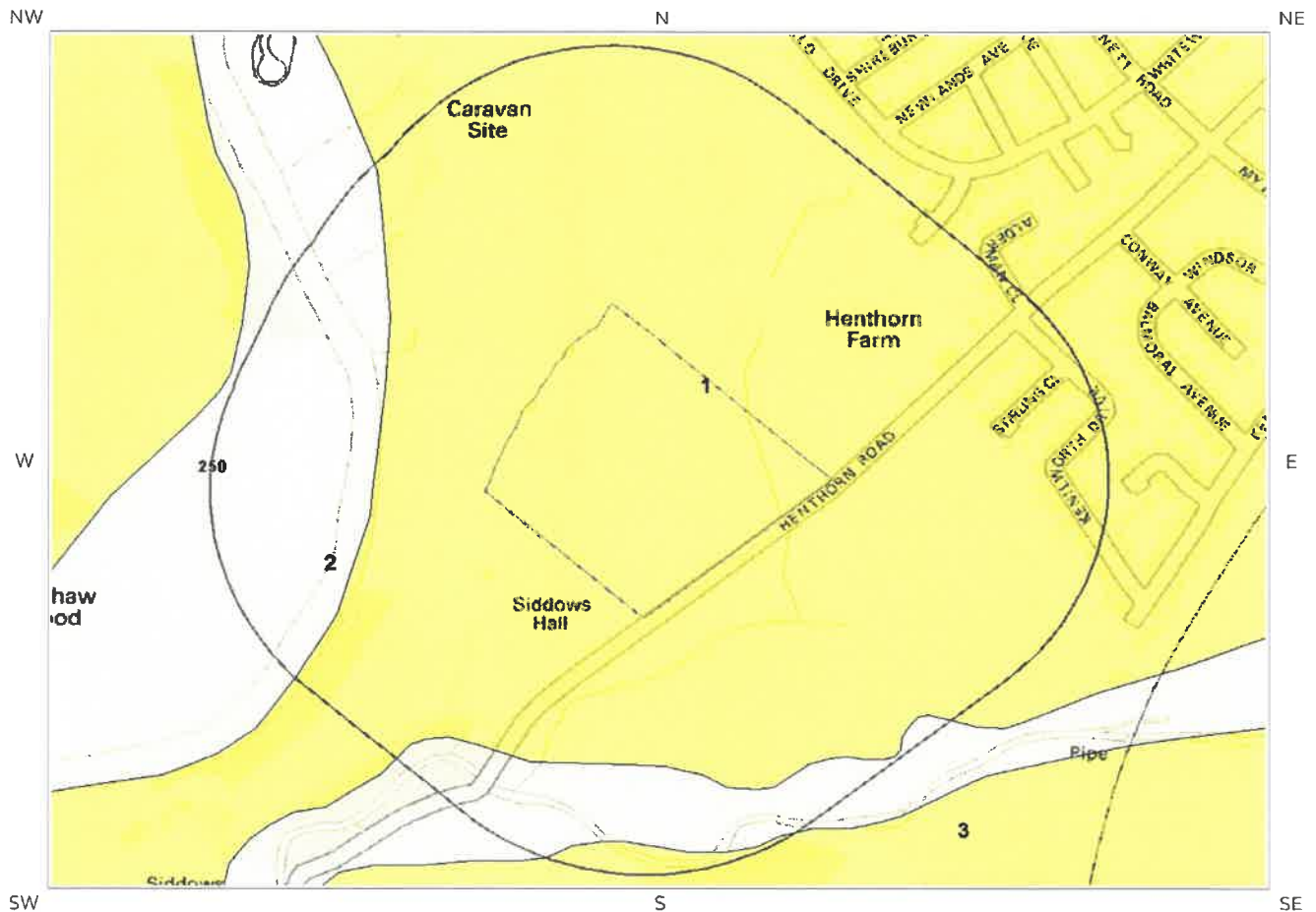


Compressible Deposits Legend

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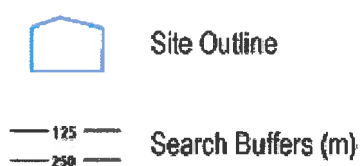


6.5 Collapsible Deposits map

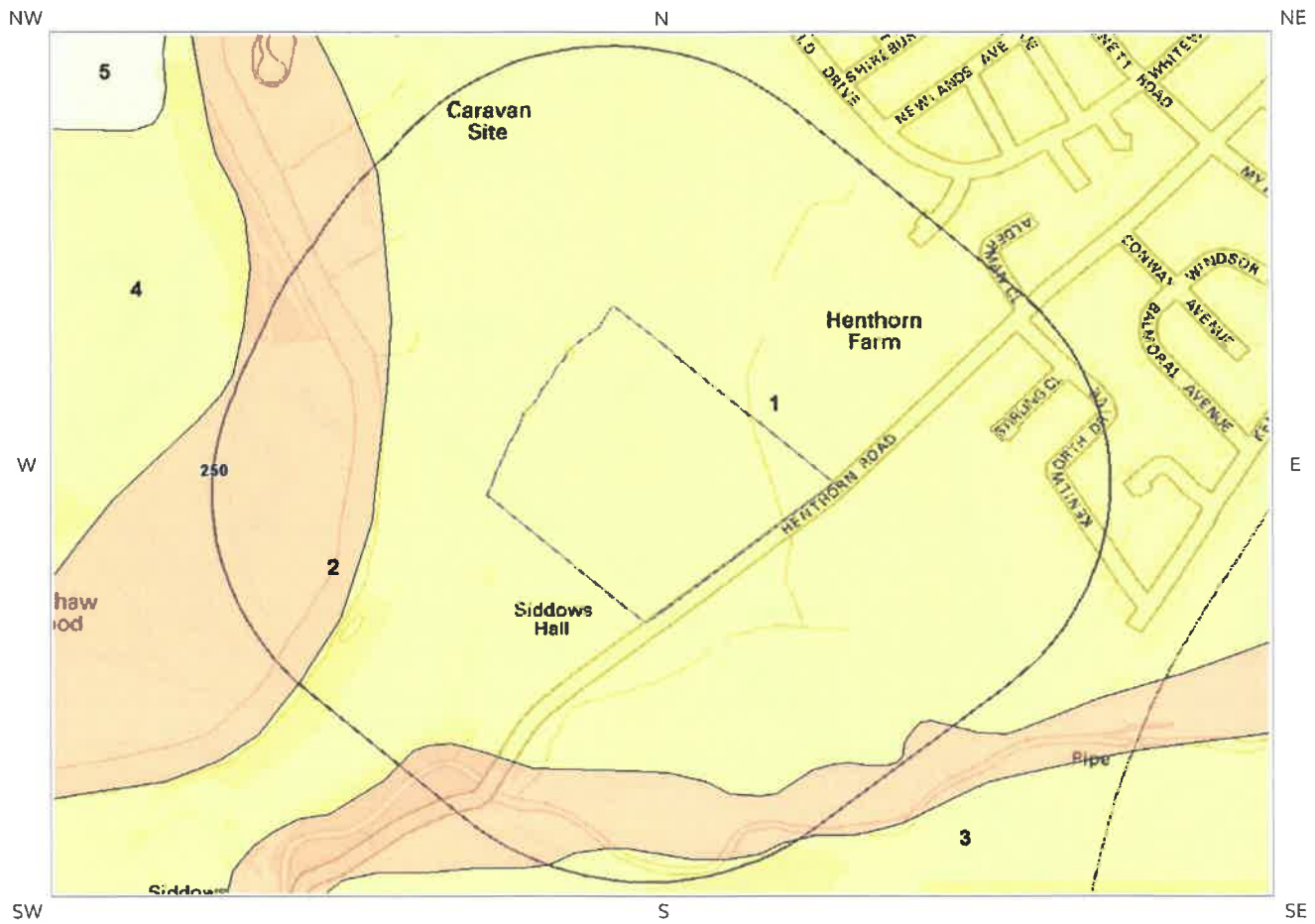


Collapsible Deposits Legend

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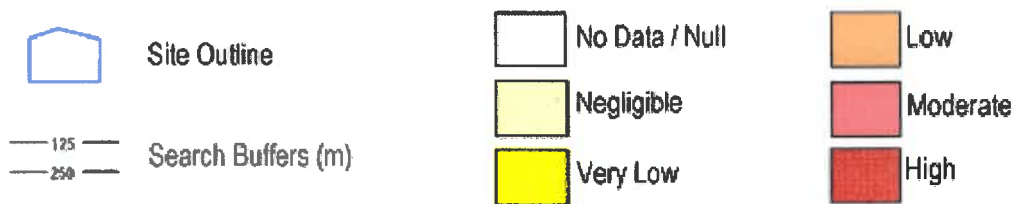


6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

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

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

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

6.1 Shrink-Swell Clays

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

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

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.

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

6.4 Compressible Deposits

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

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

6.5 Collapsible Deposits

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

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

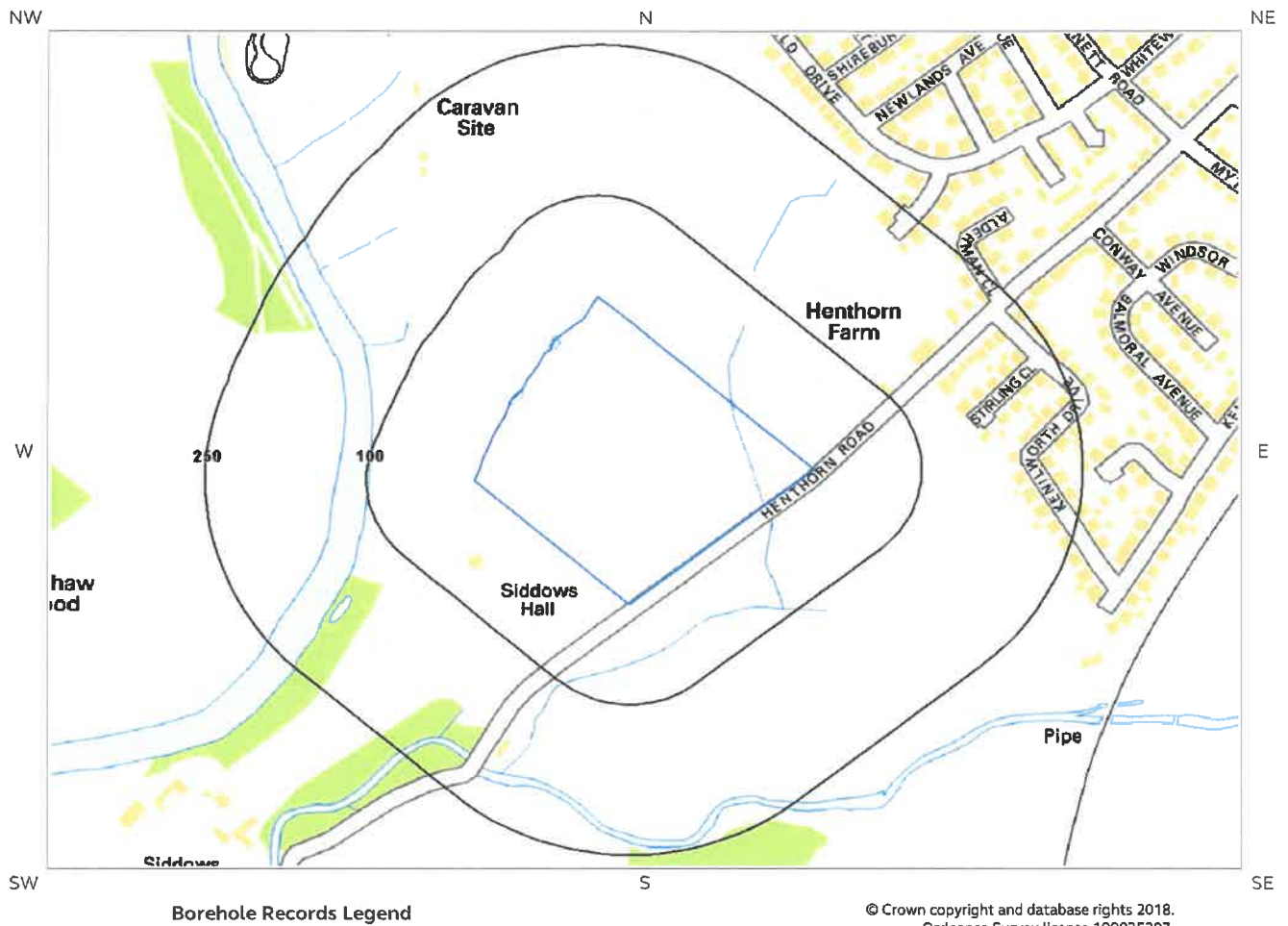
6.6 Running Sands

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

15

7 Borehole Records map



7 Borehole Records

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

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

Database searched and no data found.

8 Estimated Background Soil Chemistry

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

5

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

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
11.0	N	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
11.0	N	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

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

9 Railways and Tunnels

9.1 Tunnels

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

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

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

Database searched and no data found.

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

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

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

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

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

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

Database searched and no data found.

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

9.3 Historical Railways

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

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

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

Database searched and no data found.

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

9.5 Railway Projects

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

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

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

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

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

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

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www.coal.gov.uk

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NATURAL ENVIRONMENT RESEARCH COUNCIL



The Coal Authority



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Standard Terms and Conditions

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



EmapSite

Masdar House, 1 Reading Road,
Eversley, RG27 0RP

Groundsure EMS-481313_645770
Reference:

Your Reference: EMS_481313_645770

Report Date 31 May 2018

Report Delivery Email - pdf
Method:

Enviro Insight

Address: Henthorn Road, Clitheroe , BB7 3BY,

Dear Sir/ Madam,

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

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

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Enc.
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Address: Henthorn Road, Clitheroe , BB7 3BY,

Date: 31 May 2018

Reference: EMS-481313_645770

Client: EmapSite

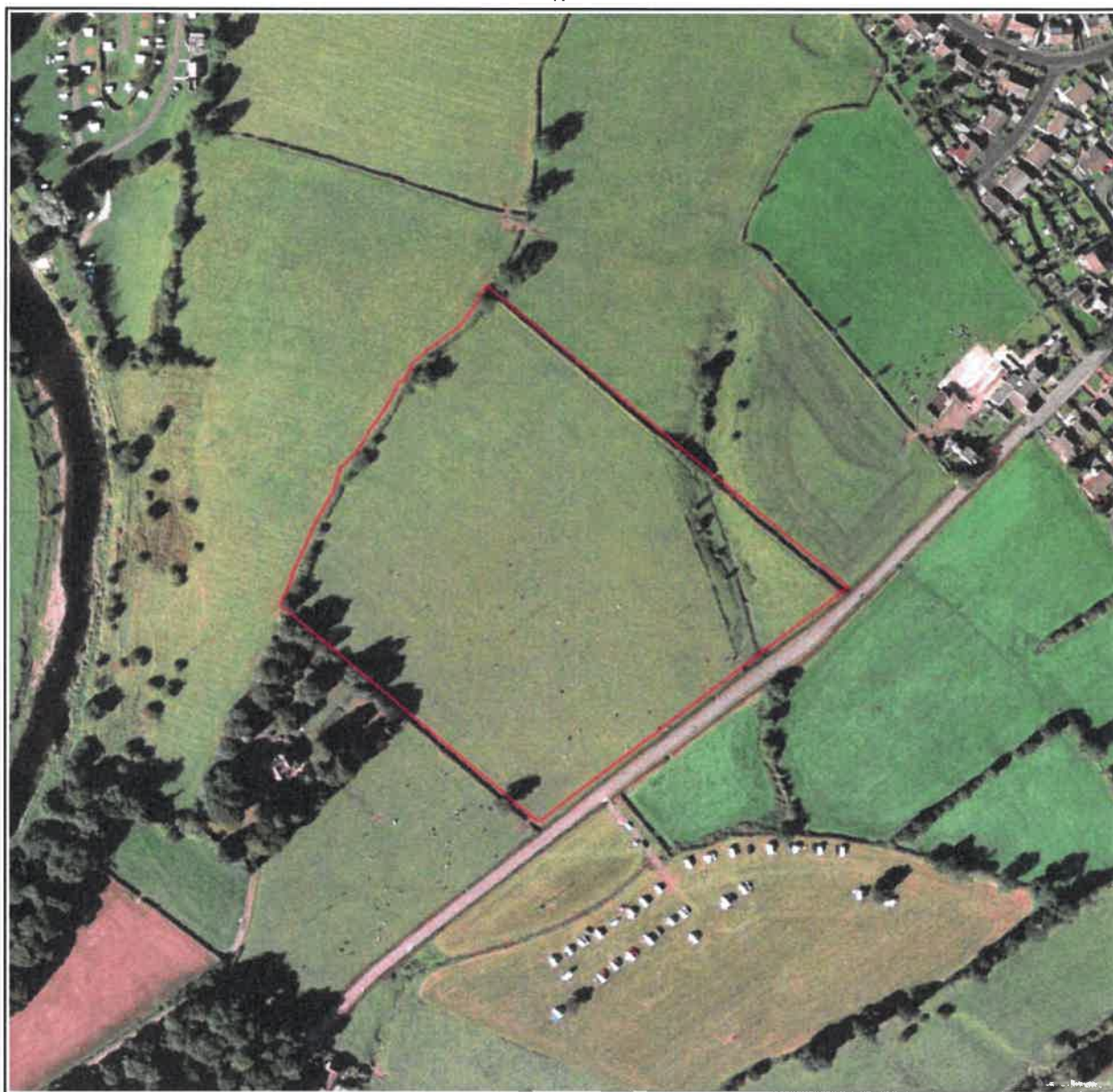
NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 08-Apr-2017

Grid Reference: 372936,440830

Site Size: 5.01ha

Report Reference: EMS-481313_645770

Client Reference: EMS_481313_645770

Contents Page

Contents Page	3
Overview of Findings	6
Using this report	10
1. Historical Land Use	11
1. Historical Industrial Sites	12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping	12
1.2 Additional Information – Historical Tank Database	13
1.3 Additional Information – Historical Energy Features Database	14
1.4 Additional Information – Historical Petrol and Fuel Site Database	15
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	15
1.6 Potentially Infilled Land	15
2. Environmental Permits, Incidents and Registers Map	17
2. Environmental Permits, Incidents and Registers	18
2.1 Industrial Sites Holding Licences and/or Authorisations	18
2.1.1 Records of historic IPC Authorisations within 500m of the study site	18
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site	18
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site	18
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site	18
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site	18
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site	19
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	19
2.1.8 Records of Licensed Discharge Consents within 500m of the study site	19
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site	21
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	21
2.2 Dangerous or Hazardous Sites	21
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents	22
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site	22
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site	23
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	23
3. Landfill and Other Waste Sites Map	24
3. Landfill and Other Waste Sites	25
3.1 Landfill Sites	25
3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site	25
3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site	25
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site	26
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site	26
3.2 Other Waste Sites	26
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site	26
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site	27
4. Current Land Use Map	30
4. Current Land Uses	31
4.1 Current Industrial Data	31
4.2 Petrol and Fuel Sites	31
4.3 National Grid High Voltage Underground Electricity Transmission Cables	31
4.4 National Grid High Pressure Gas Transmission Pipelines	32

5. Geology	33
5.1 Artificial Ground and Made Ground.....	33
5.2 Superficial Ground and Drift Geology	33
5.3 Bedrock and Solid Geology	33
6 Hydrogeology and Hydrology	34
6a. Aquifer Within Superficial Geology	34
6b. Aquifer Within Bedrock Geology and Abstraction Licences	35
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences	36
6d. Hydrogeology – Source Protection Zones within confined aquifer	37
6e. Hydrology – Watercourse Network and River Quality	38
6. Hydrogeology and Hydrology	39
6.1 Aquifer within Superficial Deposits.....	39
6.2 Aquifer within Bedrock Deposits.....	39
6.3 Groundwater Abstraction Licences.....	40
6.4 Surface Water Abstraction Licences.....	40
6.5 Potable Water Abstraction Licences.....	42
6.6 Source Protection Zones.....	42
6.7 Source Protection Zones within Confined Aquifer.....	42
6.8 Groundwater Vulnerability and Soil Leaching Potential.....	43
6.9 River Quality.....	43
6.9.1 Biological Quality:.....	43
6.9.2 Chemical Quality:.....	44
6.10 Ordnance Survey MasterMap Water Network.....	44
6.11 Surface Water Features.....	50
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)	51
7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS)	52
Map	52
7 Flooding	53
7.1 River and Coastal Zone 2 Flooding.....	53
7.2 River and Coastal Zone 3 Flooding.....	53
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating.....	53
7.4 Flood Defences.....	54
7.5 Areas benefiting from Flood Defences.....	54
7.6 Areas benefiting from Flood Storage.....	54
7.7 Groundwater Flooding Susceptibility Areas.....	54
7.8 Groundwater Flooding Confidence Areas.....	54
8. Designated Environmentally Sensitive Sites Map	55
8. Designated Environmentally Sensitive Sites	56
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:.....	56
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:.....	56
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:.....	56
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:.....	56
8.5 Records of Ramsar sites within 2000m of the study site:.....	56
8.6 Records of Ancient Woodland within 2000m of the study site:	57
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:.....	57
8.8 Records of World Heritage Sites within 2000m of the study site:.....	57
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:	57
8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:	57
8.11 Records of National Parks (NP) within 2000m of the study site:	58
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:.....	58
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:.....	58

8.14 Records of Green Belt land within 2000m of the study site:.....	58
9. Natural Hazards Findings	59
9.1 Detailed BGS GeoSure Data.....	59
9.1.1 Shrink Swell.....	59
9.1.2 Landslides.....	59
9.1.3 Soluble Rocks.....	59
9.1.4 Compressible Ground.....	60
9.1.5 Collapsible Rocks.....	60
9.1.6 Running Sand.....	60
9.2 Radon.....	61
9.2.1 Radon Affected Areas.....	61
9.2.2 Radon Protection.....	61
10. Mining	62
10.1 Coal Mining.....	62
10.2 Non-Coal Mining.....	62
10.3 Brine Affected Areas	62
Contact Details	63
Standard Terms and Conditions	65

Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	0	11	43
1.2 Additional Information – Historical Tank Database	0	0	0	22
1.3 Additional Information – Historical Energy Features Database	0	0	0	19
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	0	0	11	26

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	6	8
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	7	5
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites

On-site 0-50m 51-250 251-500 501-1000 1000-1500

3.1 Landfill Sites

3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	1	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	2	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	1	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	1	0

3.2 Landfill and Other Waste Sites Findings

3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	5	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	3	9	0

Section 4: Current Land Use

On-site 0-50m 51-250 251-500

4.1 Current Industrial Sites Data	0	0	1	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology

5.1 Records of Artificial Ground and Made Ground present beneath the study site

None identified

5.2 Records of Superficial Ground and Drift Geology present beneath the study site

Identified

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

Section 6: Hydrogeology and Hydrology

0-500m

6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site

Identified

6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site

Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	6	6
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	1	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	Yes	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	2	0	36	18	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

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

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	1	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	2
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence

Very Low

9.1.1 Maximum Shrink-Swell hazard rating identified on the study site

Very Low

9.1.2 Maximum Landslides hazard rating identified on the study site

Very Low

9.1.3 Maximum Soluble Rocks hazard rating identified on the study site

Very Low

9.1.4 Maximum Compressible Ground hazard rating identified on the study site

Negligible

9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site

Very Low

9.1.6 Maximum Running Sand hazard rating identified on the study site

Very Low

9.2 Radon

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

The site is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?

No radon protective measures are necessary.

Section 10: Mining

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

Using this report

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

1. Historical Industrial Sites

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

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

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

9. Natural Hazards

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

10. Mining

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

11. Contacts

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

Note: Maps

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

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

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

1. Historical Land Use



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Historical 1:10,000 and 1:10,560 scale mapping



Site Outline

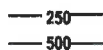


Industrial Land Use



Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping



Search Buffers (m)



Energy Features



Petrol Stations



Tanks



Garages

1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 54

ID	Distance [m]	Direction	Use	Date
1T	195	SE	Sewage Works	1971
2A	206	NE	Unspecified Pit	1930
3A	206	NE	Unspecified Pit	1938
4A	206	NE	Unspecified Pit	1910
5U	208	SE	Sewage Farm	1955
6A	210	NE	Unspecified Pit	1955
7A	211	NE	Unspecified Old Quarry	1911
8A	215	NE	Shale Tip	1846
9V	222	SE	Unspecified Heap	1911
10B	224	SW	Unspecified Heap	1938
11B	224	SW	Unspecified Heap	1930
12D	315	SE	Unspecified Commercial/Industrial	1930
13C	315	SE	Unspecified Ground Workings	1938
14C	315	SE	Unspecified Ground Workings	1930
15D	315	SE	Unspecified Commercial/Industrial	1938
16E	323	SW	Unspecified Tank	1910
17E	323	SW	Unspecified Tank	1930
18E	323	SW	Unspecified Tank	1938
19D	324	SE	Unspecified Heap	1971
20F	325	S	Unspecified Tanks	1971
21D	325	SE	Unspecified Commercial/Industrial	1910
22D	325	SE	Unspecified Heap	1930
23D	325	SE	Unspecified Heap	1938
24D	328	SE	Unspecified Heap	1955
25D	328	SE	Filter Beds	1910
26G	328	SE	Unspecified Tanks	1971
27F	330	S	Unspecified Commercial/Industrial	1930
28W	330	S	Unspecified Commercial/Industrial	1938
29G	336	SE	Unspecified Tanks	1930
30G	336	SE	Unspecified Tanks	1938

31I	337	SE	Unspecified Tanks	1955
32G	339	SE	Unspecified Tanks	1955
33H	339	S	Unspecified Ground Workings	1938
34H	339	S	Unspecified Ground Workings	1930
35G	341	SE	Filter Beds	1911
36F	342	S	Unspecified Tanks	1955
37G	347	SE	Unspecified Tanks	1910
38I	359	SE	Unspecified Tanks	1910
39K	375	SW	Refuse Destructor	1955
40	380	E	Railway Sidings	1911
41J	393	SE	Unspecified Tanks	1938
42J	393	SE	Unspecified Tanks	1930
43J	394	SE	Filter Beds	1910
44J	395	SE	Unspecified Tanks	1955
45K	403	SW	Mill Pond	1911
46K	406	SW	Refuse Destructor	1938
47K	406	SW	Refuse Destructor	1930
48J	416	SE	Unspecified Tanks	1910
49K	417	SW	Sewage Works	1971
50K	419	SW	Mill Pond	1846
51	448	E	Railway Sidings	1955
52L	451	SW	Corn Mill	1846
53L	466	SW	Unspecified Mill	1911
54X	486	S	Sewage Farm	1932

1.2 Additional Information – Historical Tank Database

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

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

22

ID	Distance (m)	Direction	Use	Date
55F	332	S	Tanks	1995
56F	333	S	Tanks	1997
57G	334	SE	Settling Tanks	1964
58G	334	SE	Tanks	1977
59G	336	SE	Unspecified Tank	1932
60G	338	SE	Tanks	1932
61G	344	SE	Tanks	1912
62E	344	SW	Unspecified Tank	1912
63E	344	SW	Unspecified Tank	1932

64	346	S	Settling Tank	1964
65M	346	S	Settling Tanks	1964
66M	346	S	Settling Tanks	1977
67G	357	SE	Unspecified Tank	1932
68I	358	SE	Unspecified Tank	1912
69J	391	SE	Tanks	1932
70J	391	SE	Tanks	1912
71N	391	SE	Tanks	1977
72N	391	SE	Tanks	1977
73J	393	SE	Settling Tanks	1977
74O	404	S	Tanks	1997
75O	404	S	Tanks	1995
76	412	S	Tanks	1997

1.3 Additional Information – Historical Energy Features Database

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

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

19

ID	Distance (m)	Direction	Use	Date
77P	258	NE	Electricity Substation	1983
78P	258	NE	Electricity Substation	1983
79P	260	NE	Electricity Substation	1995
80P	260	NE	Electricity Substation	1996
81P	271	NE	Electricity Substation	1976
82Q	418	NE	Electricity Substation	1983
83Q	418	NE	Electricity Substation	1983
84Q	419	NE	Electricity Substation	1976
85Q	420	NE	Electricity Substation	1995
86Q	420	NE	Electricity Substation	1996
87R	441	N	Electricity Substation	1997
88R	442	N	Electricity Substation	1976
89R	443	N	Electricity Substation	1980
90R	443	N	Electricity Substation	1980
91S	464	N	Electricity Substation	1976
92S	464	N	Electricity Substation	1983
93S	464	N	Electricity Substation	1983
94S	467	N	Electricity Substation	1996
95S	467	N	Electricity Substation	1995

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

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

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

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

Database searched and no data found.

1.6 Potentially Infilled Land

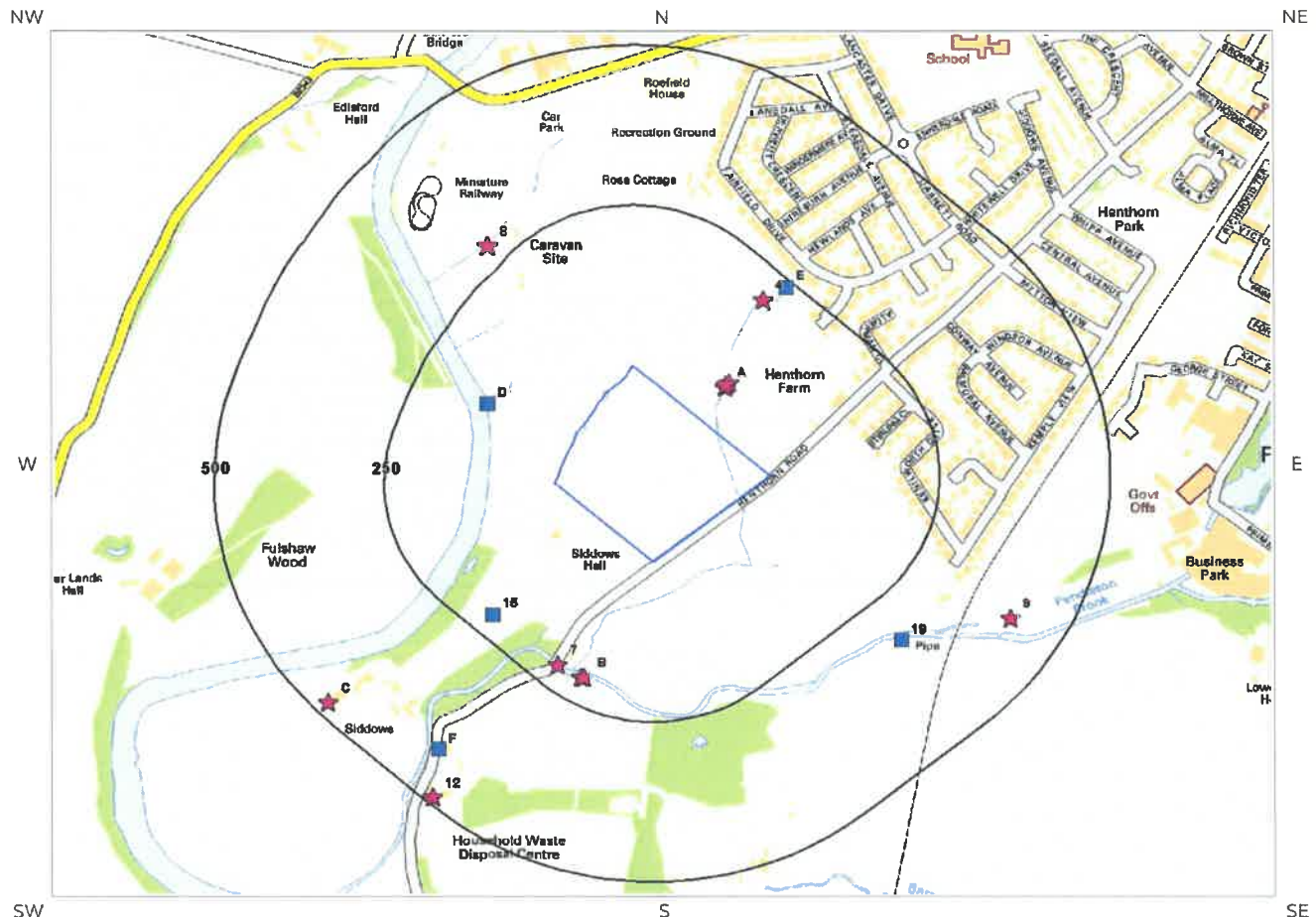
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 37

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

ID	Distance(m)	Direction	Use	Date
96T	195	SE	Sewage Works	1971
97A	206	NE	Unspecified Pit	1930
98A	206	NE	Unspecified Pit	1910
99A	206	NE	Unspecified Pit	1938
100U	208	SE	Sewage Farm	1955
101A	210	NE	Unspecified Pit	1955
102A	211	NE	Unspecified Old Quarry	1911
103A	215	NE	Shale Tip	1846
104V	222	SE	Unspecified Heap	1911
105B	224	SW	Unspecified Heap	1938
106B	224	SW	Unspecified Heap	1930
107C	297	SE	Ponds	1971
108C	315	SE	Unspecified Ground Workings	1930
109C	315	SE	Unspecified Ground Workings	1938
110D	324	SE	Unspecified Heap	1971
111D	325	SE	Unspecified Heap	1938
112D	325	SE	Unspecified Heap	1930
113C	326	SE	Pond	1938
114C	326	SE	Pond	1930

115D	328	SE	Unspecified Heap	1955
116C	328	SE	Pond	1955
117D	328	SE	Filter Beds	1910
118F	339	S	Unspecified Ground Workings	1938
119F	339	S	Unspecified Ground Workings	1930
120G	341	SE	Filter Beds	1911
121F	346	S	Pond	1930
122F	346	S	Pond	1938
123W	353	S	Ponds	1955
124K	375	SW	Refuse Destructor	1955
125	386	S	Ponds	1955
126J	394	SE	Filter Beds	1910
127K	403	SW	Mill Pond	1911
128K	406	SW	Refuse Destructor	1938
129K	406	SW	Refuse Destructor	1930
130K	417	SW	Sewage Works	1971
131K	419	SW	Mill Pond	1846
132X	486	S	Sewage Farm	1932

2. Environmental Permits, Incidents and Registers Map



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- | | | |
|-----------------------------|---------------------------------------|--|
| Site Outline | Recorded Pollution Incident | RAS 3 & 4 Authorisations |
| 250 Search Buffers (m) | Dangerous Substances (List 1) | Part A(1) Authorised Processes and Historic IPC Authorisations |
| 500 Search Buffers (m) | Dangerous Substances (List 2) | Part A(2) and Part B Authorised Processes |
| Water Industry Referrals | Licenced Discharge Consents | COMAH / NIHHS Sites |
| Red List Discharge Consents | Sites Determined as Contaminated Land | Hazardous Substance Consents and Enforcements |

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

14

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
13D	139	W	372693 440929	Address: RIBBLE MEADOWS, RIBBLE MEADOWS DEVELOPMENT, HENTHORN ROAD, CLITHEROE, LANCASHIRE, BB7 2QF Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRDB3997WR Permit Version: 1 Receiving Water: THE RIVER RIBBLE Status: SURRENDERED UNDER EPR 2010 Issue date: 25/05/2016 Effective Date: 25-May-2016 Revocation Date: 21/06/2017
14D	139	W	372693 440929	Address: RIBBLE MEADOWS, RIBBLE MEADOWS DEVELOPMENT, HENTHORN ROAD, CLITHEROE, LANCASHIRE, BB7 2QF Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRDB3997WR Permit Version: 1 Receiving Water: THE RIVER RIBBLE Status: SURRENDERED UNDER EPR 2010 Issue date: 25/05/2016 Effective Date: 25-May-2016 Revocation Date: 21/06/2017
15	216	SW	372700 440600	Address: NORTH WEST HENTHORN RD EO, NORTH WEST HENTHORN ROAD, BRIDGE HENTH, RIBBLE VALLEY, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017160099 Permit Version: 1 Receiving Water: PENDLETON BROOK Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 07-Sep-1983 Revocation Date: -
16E	238	NE	373130 441110	Address: ADJ POLICE STATION KING STREET CSO, KING STREET, CLITHEROE, LANCASHIRE, BB7 2EU Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01RIB0002 Permit Version: 1 Receiving Water: S.W. SYS(DUAL MH) Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 13/04/2009

ID	Distance (m)	Direction	NGR	Details	
17E	238	NE	373130 441110	Address: ADJ POLICE STATION KING STREET CSO, KING STREET, CLITHEROE, LANCASHIRE, BB7 2EU Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01RIB0002 Permit Version: 2	Receiving Water: S.W. SYS(DUAL MH) Status: VARIED UNDER EPR 2010 Issue date: 14/04/2009 Effective Date: 14-Apr-2009 Revocation Date: 04/02/2016
18E	238	NE	373130 441110	Address: ADJ POLICE STATION KING STREET CSO, KING STREET, CLITHEROE, LANCASHIRE, BB7 2EU Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01RIB0002 Permit Version: 3	Receiving Water: UNNAMED TRIB PENDLETON BROOK Status: VARIED UNDER EPR 2010 Issue date: 05/02/2016 Effective Date: 05-Feb-2016 Revocation Date: -
19	321	SE	373300 440560	Address: STORM OVERFLOW NEAR CLITHEROE STW, CLITHEROE, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 017160177 Permit Version: 1	Receiving Water: PENDLETON BROOK Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 28-Jun-1985 Revocation Date: -
20F	427	SW	372620 440390	Address: CLITHEROE STW, HENTHORN ROAD, CLITHEROE, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 017160033 Permit Version: 2	Receiving Water: BARROW CLOUGH Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 31-Jan-1985 Revocation Date: 19/12/2000
21F	427	SW	372620 440390	Address: CLITHEROE STW, HENTHORN ROAD, CLITHEROE, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 017160033 Permit Version: 5	Receiving Water: BARROW CLOUGH Status: CONSENT CURRENTLY UNDER APPEAL Issue date: 14/10/2008 Effective Date: 01-Jan-2010 Revocation Date: 31/03/2010
22F	427	SW	372620 440390	Address: CLITHEROE STW, HENTHORN ROAD, CLITHEROE, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 017160033 Permit Version: 6	Receiving Water: BARROW CLOUGH Status: CONSENT CURRENTLY UNDER APPEAL Issue date: 01/04/2010 Effective Date: 01-Apr-2010 Revocation Date: 29/11/2010
23F	427	SW	372620 440390	Address: CLITHEROE STW, HENTHORN ROAD, CLITHEROE, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 017160033 Permit Version: 7	Receiving Water: BARROW CLOUGH Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 30/11/2010 Effective Date: 30-Nov-2010 Revocation Date: -
24F	427	SW	372620 440390	Address: CLITHEROE STW, HENTHORN ROAD, CLITHEROE, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 017160033 Permit Version: 3	Receiving Water: BARROW CLOUGH Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: 20/12/2000 Effective Date: 20-Dec-2000 Revocation Date: 23/03/2005

ID	Distance (m)	Direction	NGR	Details
25F	427	SW	372620 440390	Address: CLITHEROE STW, HENTHORN ROAD, CLITHEROE, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 017160033 Permit Version: 4 Receiving Water: BARROW CLOUGH Status: CONSENT CURRENTLY UNDER APPEAL Issue date: 24/03/2005 Effective Date: 24-Mar-2005 Revocation Date: 31/12/2009
26F	427	SW	372620 440390	Address: CLITHEROE STW, HENTHORN ROAD, CLITHEROE, LANCASHIRE Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 017160033 Permit Version: 1 Receiving Water: BARROW CLOUGH Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 19-Oct-1979 Revocation Date: 30/01/1985

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

12

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1A	60	NE	373040 440954	Incident Date: 28-Apr-2010 Incident Identification: 775047 Pollutant: Sewage Materials Pollutant Description: Crude Sewage Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2A	65	NE	373041 440959	Incident Date: 18-Nov-2013 Incident Identification: 1176935 Pollutant: Contaminated Water Pollutant Description: Suspended Solids Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3A	69	NE	373045 440961	Incident Date: 24-Jul-2006 Incident Identification: 420315 Pollutant: Sewage Materials Pollutant Description: Crude Sewage Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	200	NE	373095 441091	Incident Date: 23-Jan-2014 Incident Identification: 1197274 Pollutant: Contaminated Water Pollutant Description: Suspended Solids Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5B	208	SW	372833 440502	Incident Date: 16-Jul-2002 Incident Identification: 92115 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
6B	210	SW	372829 440502	Incident Date: 16-May-2003 Incident Identification: 158828 Pollutant: Contaminated Water Pollutant Description: Suspended Solids Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
7	214	SW	372794 440522	Incident Date: 25-Jul-2003 Incident Identification: 176688 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
8	284	NW	372692 441176	Incident Date: 16-Apr-2003 Incident Identification: 151721 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
9	417	SE	373460 440595	Incident Date: 05-Aug-2003 Incident Identification: 179200 Pollutant: Sewage Materials Pollutant Description: Crude Sewage Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
10C	479	SW	372457 440464	Incident Date: 21-Oct-2008 Incident Identification: 630059 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
11C	479	SW	372457 440464	Incident Date: 21-Oct-2008 Incident Identification: 630059 Pollutant: Specific Waste Materials Pollutant Description: Household Waste Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
12	490	SW	372611 440315	Incident Date: 08-Jul-2002 Incident Identification: 89873 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

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

0

Database searched and no data found.

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

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

0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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- Site Outline
- Search Buffers (m)
 - 250
 - 500
- EA/NRW Active Landfill
- EA/NRW Historic Landfill
- BGS / DoE Survey Landfill
- Historic and Planned Waste Sites
- EA/NRW Licensed Waste Site
- Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

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

1

The following Environment Agency/Natural Resources Wales landfill records are represented as polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
2	354	S	372600 440300	Address: Land/premises At, Henthorn Road, Clitheroe, Blackburn, Lancashire, BB7 2QF Landfill Reference: 54102.0 Environmental Permitting Regulations (Waste) Reference: SIT007 Landfill Type: A04: Household, Commercial & Industrial Waste Landfill Operator: Suez Recycling And Recovery Lancashire Ltd Status: Modified IPPC Reference: EPR Reference:

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

3

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

ID	Distance (m)	Direction	NGR	Details
8	354	S	372700 440100	Site Address: Henthorn Tip, Hewthorn, Clitheroe, Lancashire Waste Licence: - Site Reference: - Waste Type: Commercial, Liquid sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Clitheroe Metropolitan Borough Licence Holder: - First Recorded: 31-Dec-1920 Last Recorded: -
9	538	E	373600 440900	Site Address: Stalwart Dying Company Limited, Off Kemple View, Near Clitheroe, Lancashire Waste Licence: - Site Reference: K1/03/034 Waste Type: Waste unknown Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -

ID	Distance (m)	Direction	NGR	Details	
Not shown	887	N	373000 442000	Site Address: Ashworth's Farm, Low Moor, Clitheroe, Lancashire Waste Licence: - Site Reference: K1/03/045 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1945 Last Recorded: 31-Dec-1945

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

1

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

ID	Distance (m)	Direction	NGR	Details	
1D	588	SW	372600.0 440200.0	Address: Hewthorn Tip, Hewthorn, Clitheroe, Lancs BGS Number: 1916.0	Risk: No risk to aquifer Waste Type: N/A

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

1

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
23	571	SW	372620 440156	Refuse Tip	1964 mapping	Polygon

3.2 Other Waste Sites

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

5

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details		
3A	375	SW	372666 440303	Type of Site: Refuse Destructor (B) Site Address: N/A	Planning Application Reference: N/A Date: 1950	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

ID	Distance (m)	Direction	NGR	Details		
4A	406	SW	372645 440295	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1938	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
5A	406	SW	372645 440295	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1930	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
6B	475	SW	372613 440315	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1964	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
7B	482	SW	372609 440307	Type of Site: Refuse Destroyer Site Address: N/A	Planning Application Reference: N/A Date: 1932	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

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

12

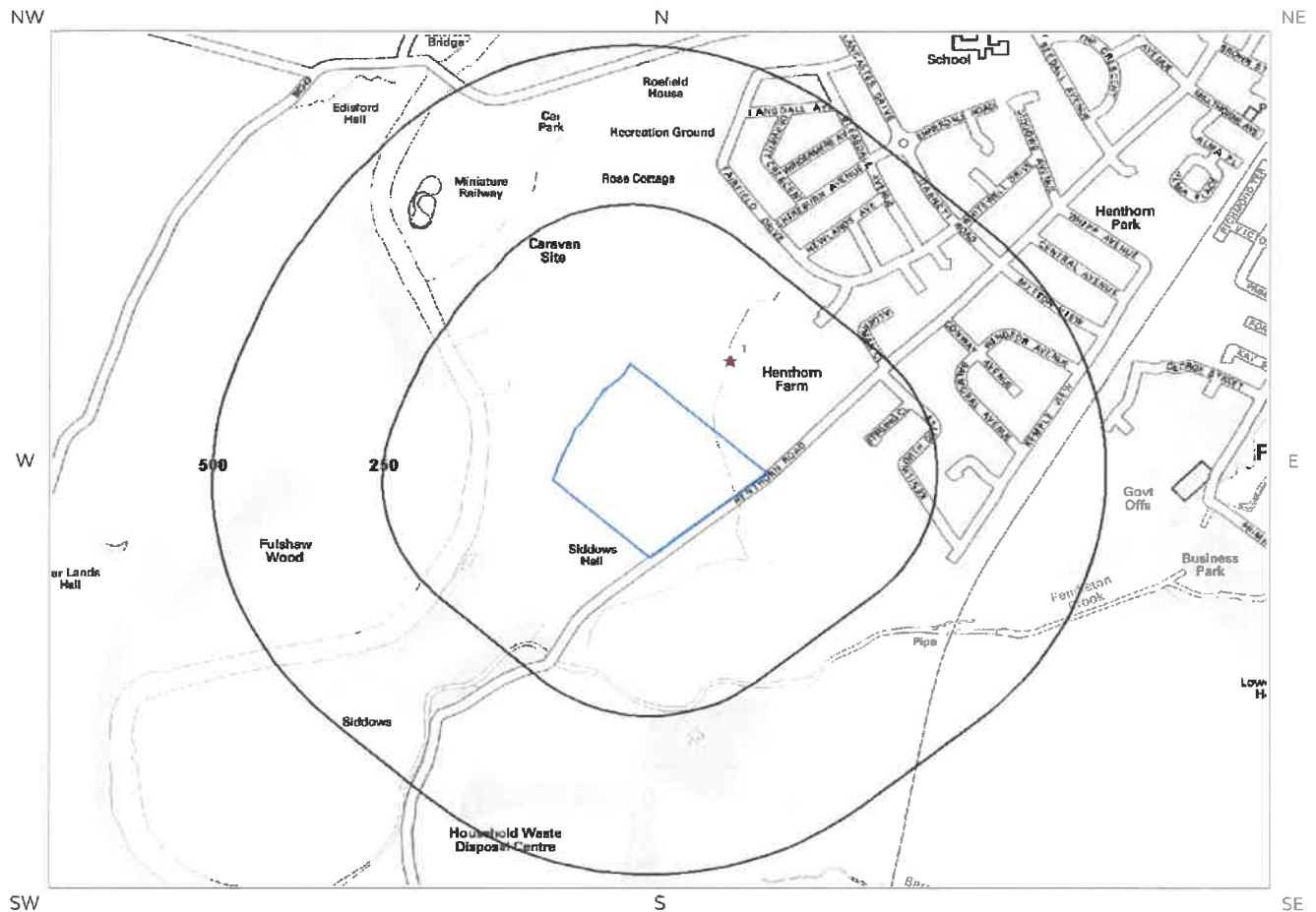
The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
11C	496	SW	372614 440304	Site Address: Land/premises At, Henthorn Road, Clitheroe, Lancashire, BB7 2QF Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT019 EPR reference: EA/EPR/RP3391CW/V004 Operator: Suez Recycling And Recovery Lancashire Ltd Waste Management licence No: 54114 Annual Tonnage: 24999.0	Issue Date: 14/05/1993 Effective Date: - Modified: 30/06/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Henthorn Road H W D C Correspondence Address: -
12C	496	SW	372614 440304	Site Address: Land/premises At, Henthorn Road, Clitheroe, Lancashire, BB7 2QF Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT019 EPR reference: EA/EPR/RP3391CW/V002 Operator: Sita (Lancashire) Ltd Waste Management licence No: 54114 Annual Tonnage: 24999.0	Issue Date: 14/05/1993 Effective Date: - Modified: 25/11/2002 Surrendered Date: 0 Expiry Date: - Cancelled Date: - Status: Modified Site Name: Henthorn Road H W D C Correspondence Address: -
13C	496	SW	372614 440304	Site Address: Land/premises At, Henthorn Road, Clitheroe, Lancashire, BB7 2QF Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT019 EPR reference: EA/EPR/RP3391CW/V002 Operator: Sita (Lancashire) Ltd Waste Management licence No: 54114 Annual Tonnage: 24999.0	Issue Date: 14/05/1993 Effective Date: - Modified: 25/11/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Henthorn Road H W D C Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
14C	509	SW	372600 440300	Site Address: Land/premises At, Henthorn Road, Clitheroe, Blackburn, Lancashire, BB7 2QF Type: Household, Commercial & Industrial Waste Landfill Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT007 EPR reference: EA/EPR/AP3095SA/V012 Operator: Suez Recycling And Recovery Lancashire Ltd Waste Management licence No: 54102 Annual Tonnage: 4999.0	Issue Date: 14/05/1993 Effective Date: - Modified: 30/06/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Henthorn Road Landfill Site Correspondence Address: -
15C	509	SW	372600 440300	Site Address: Land/premises At, Henthorn Road, Clitheroe, Blackburn, Lancashire, BB7 2QF Type: Household, Commercial & Industrial Waste Landfill Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT007 EPR reference: EA/EPR/AP3095SA/V003 Operator: Sita (Lancashire) Ltd Waste Management licence No: 54102 Annual Tonnage: 4999.0	Issue Date: 14/05/1993 Effective Date: - Modified: 09/01/2014 Surrendered Date: 0 Expiry Date: - Cancelled Date: - Status: Modified Site Name: Henthorn Road Landfill Site Correspondence Address: -
16D	588	SW	372600 440200	Site Address: Henthorn Road, Clitheroe, Lancashire, BB7 2QF Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT019 EPR reference: - Operator: Sita (Lancashire) Ltd Waste Management licence No: 54114 Annual Tonnage: 0.0	Issue Date: 14/05/1993 Effective Date: - Modified: 25/11/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Henthorn Road H W D C Correspondence Address: Tustin Court, Portway, Preston, Lancashire, PR2 2YQ
17D	588	SW	372600 440200	Site Address: Henthorn Road, Clitheroe, Lancashire, BB7 2QF Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT019 EPR reference: - Operator: Sita U K Ltd Waste Management licence No: 54114 Annual Tonnage: 24999.0	Issue Date: 14/05/1993 Effective Date: - Modified: 25/11/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Henthorn Road H W D C Correspondence Address: Tustin Court, Portway, Preston, Lancashire, PR2 2YQ
Not shown	684	S	372900 440000	Site Address: Henthorn Road, Clitheroe, Blackburn, Lancashire, BB7 2QF Type: Household, Commercial & Industrial Waste Landfill Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT007 EPR reference: - Operator: Sita U K Ltd Waste Management licence No: 54102 Annual Tonnage: 74999.0	Issue Date: 14/05/1993 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Henthorn Road L F S Correspondence Address: Tustin Court, Portway, Preston, Lancashire, PR2 2YQ

ID	Distance (m)	Direction	NGR	Details	
Not shown	684	S	372900 440000	Site Address: Henthorn Road, Clitheroe, Blackburn, Lancashire, BB7 2QF Type: Household, Commercial & Industrial Waste Landfill Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT007 EPR reference: - Operator: Sita (Lancashire) Ltd Waste Management licence No: 54102 Annual Tonnage: 0.0	Issue Date: 14/05/1993 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Henthorn Road L F S Correspondence Address: Tustin Court, Portway, Preston, Lancashire, PR2 2YQ
Not shown	684	S	372900 440000	Site Address: Henthorn Road, Clitheroe, Blackburn, Lancashire, BB7 2QF Type: Household, Commercial & Industrial Waste Landfill Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT007 EPR reference: - Operator: Sita (Lancashire) Ltd Waste Management licence No: 54102 Annual Tonnage: 74999.0	Issue Date: 14/05/1993 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Henthorn Road L F S Correspondence Address: Tustin Court, Portway, Preston, Lancashire, PR2 2YQ
Not shown	686	S	373000 440000	Site Address: Henthorn Road, Clitheroe, Blackburn, Lancashire, BB7 2QF Type: - Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT208 EPR reference: - Operator: Sita (Lancashire) Ltd Waste Management licence No: 54494 Annual Tonnage: 0.0	Issue Date: 31/03/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: IPPC Site Name: Henthorn Road L T P Correspondence Address: Tustin Court, Portway, Preston, Lancashire, PR2 2YQ
Not shown	686	S	373000 440000	Site Address: Henthorn Road, Clitheroe, Blackburn, Lancashire, BB7 2QF Type: Co-Disposal Landfill Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT208 EPR reference: EA/EPR/MP3393ZE/A001 Operator: Sita (Lancashire) Ltd Waste Management licence No: 54494 Annual Tonnage: 1.0	Issue Date: 31/03/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: Henthorn Road L T P Correspondence Address: -

4. Current Land Use Map



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4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 1

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	99	NE	Electricity Sub Station	373053 440994	BB7	Electrical Features	Infrastructure and Facilities

4.2 Petrol and Fuel Sites

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

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

5.3 Bedrock and Solid Geology

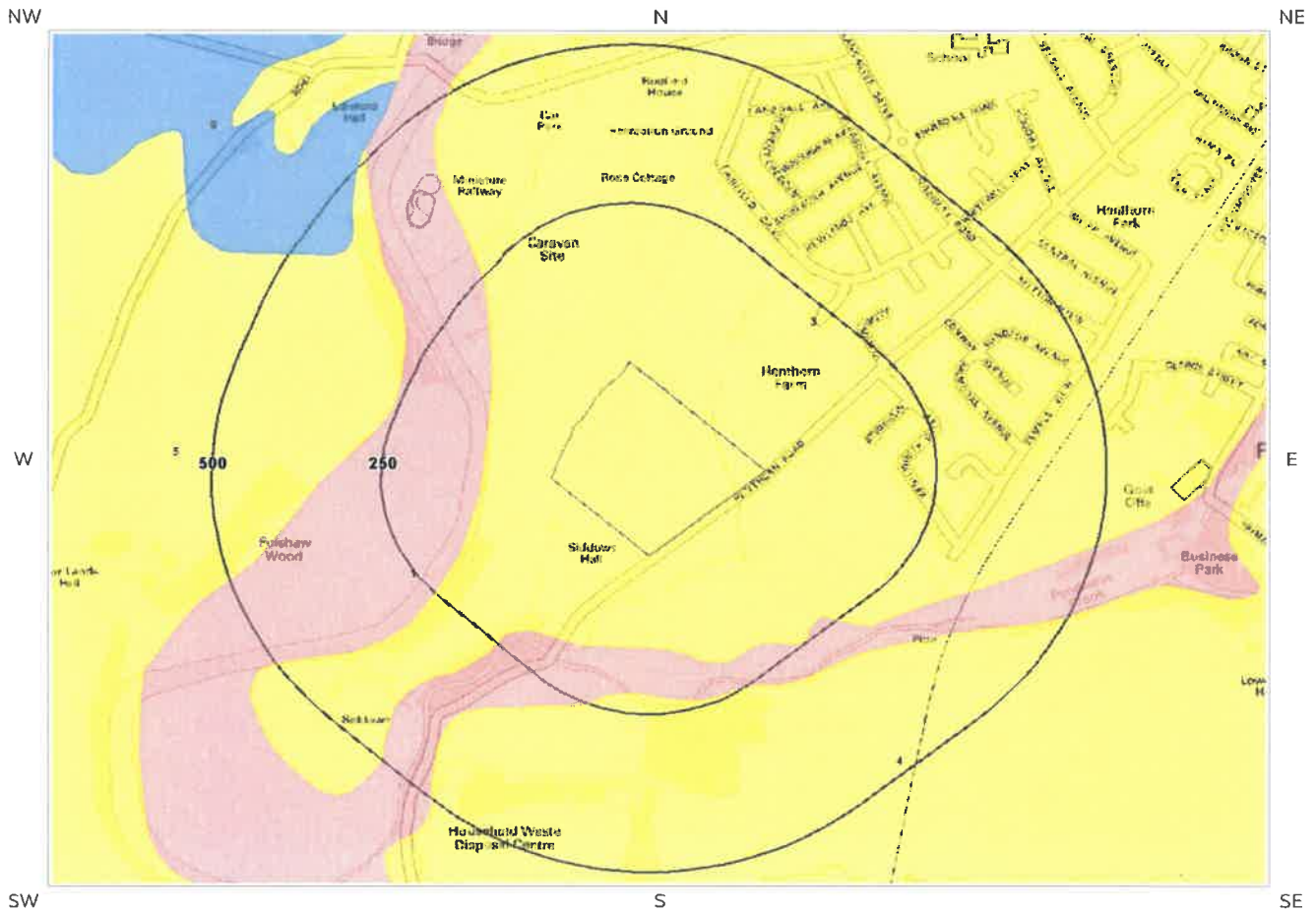
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
CLHOM-MDST	CLITHEROE LIMESTONE FORMATION AND HODDER MUDSTONE FORMATION (UNDIFFERENTIATED)	MUDSTONE

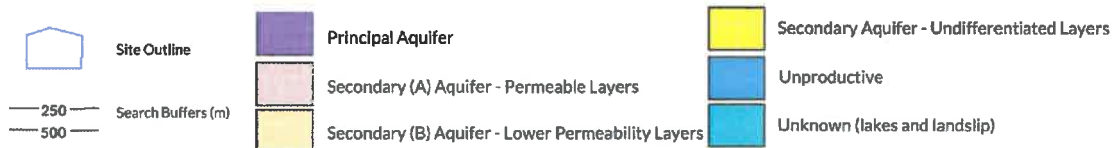
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

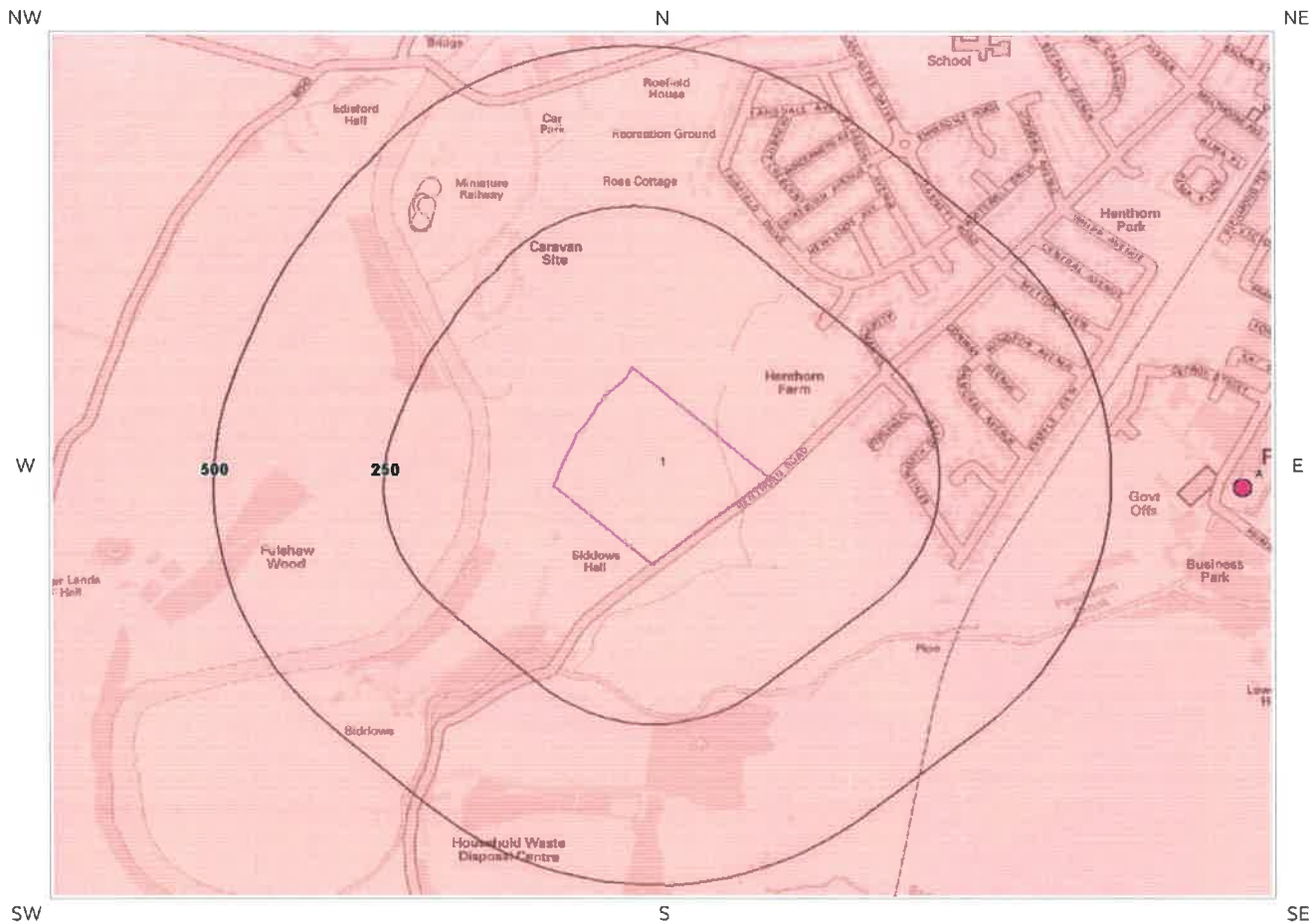
6a. Aquifer Within Superficial Geology



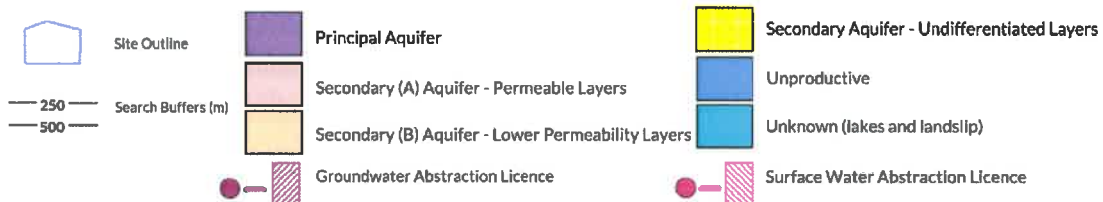
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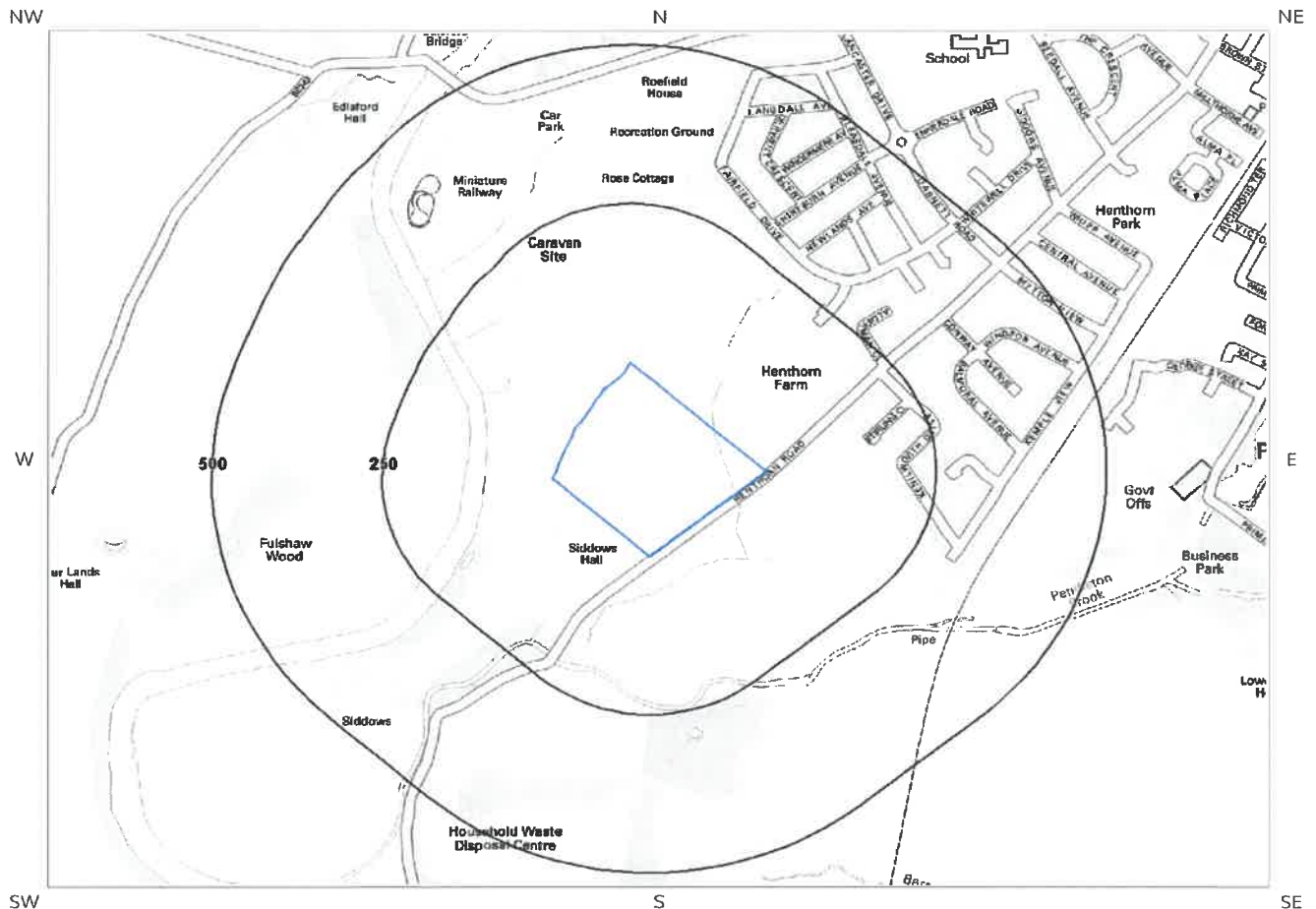
6b. Aquifer Within Bedrock Geology and Abstraction Licenses



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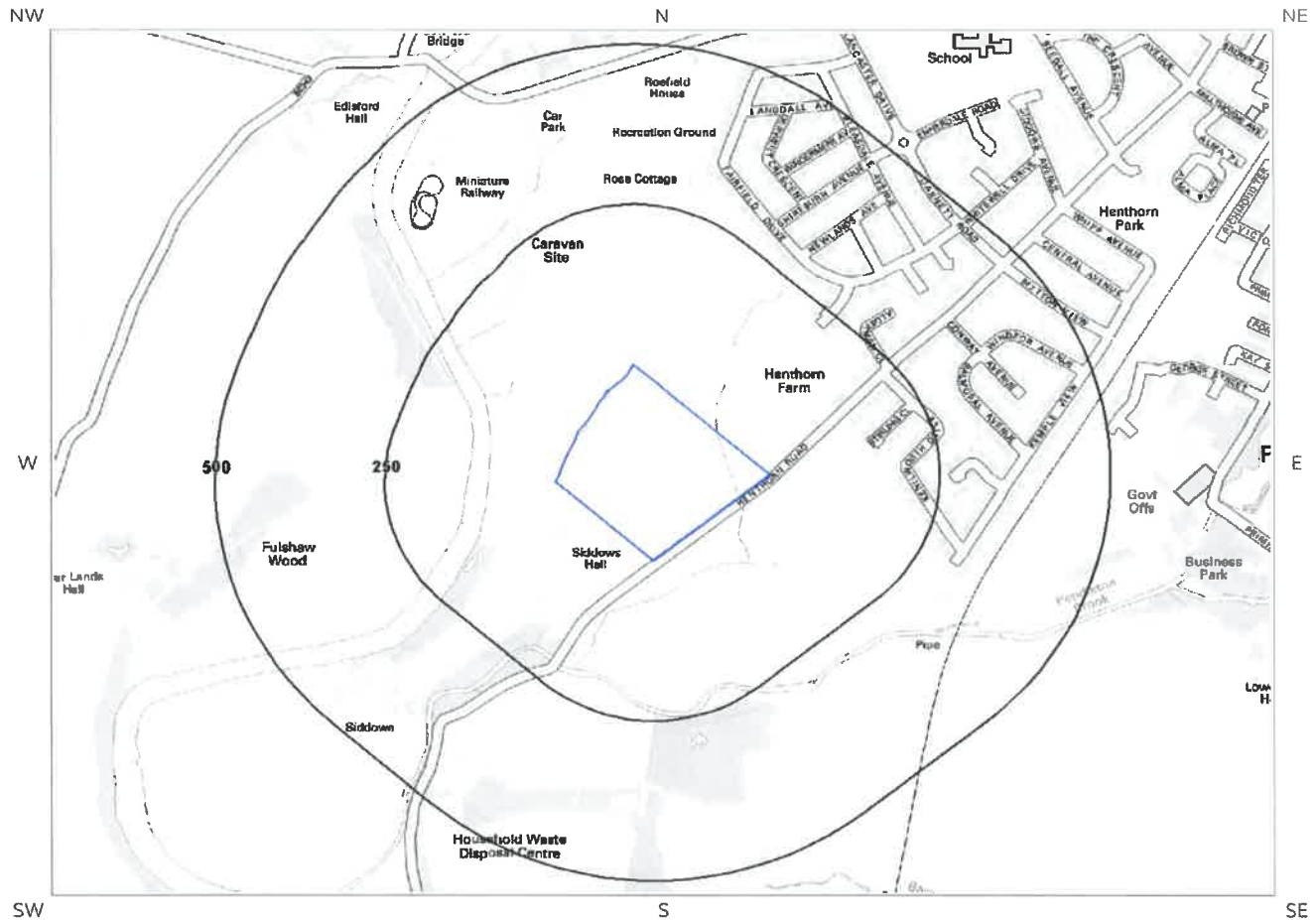
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



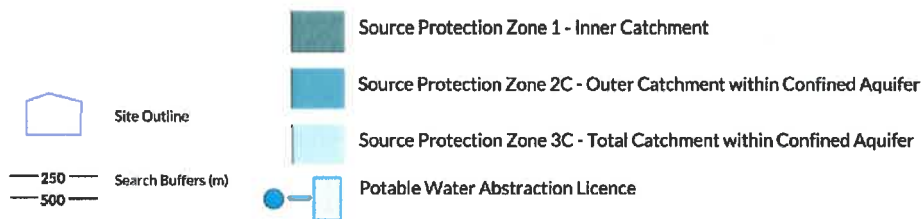
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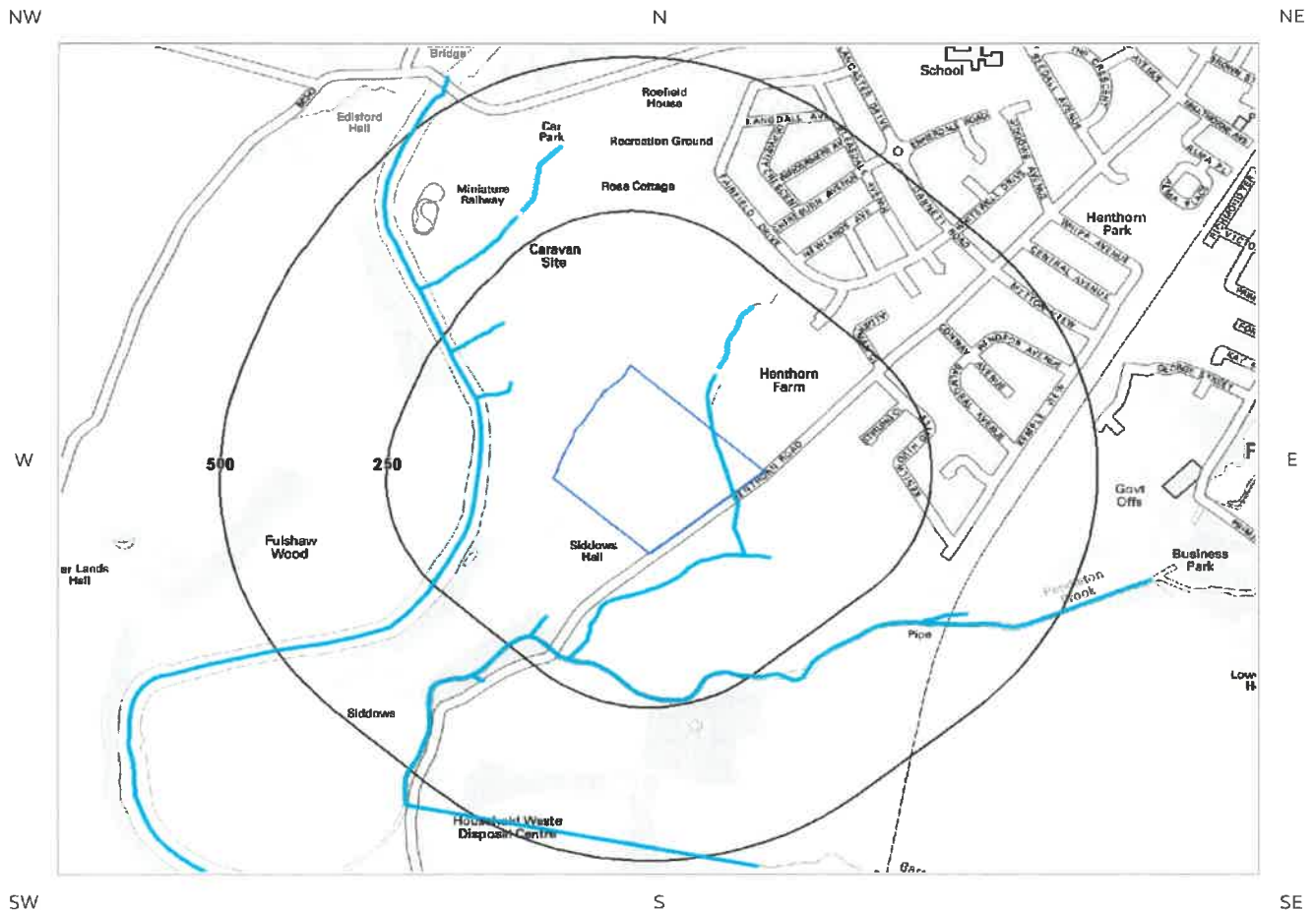
6d. Hydrogeology – Source Protection Zones within confined aquifer



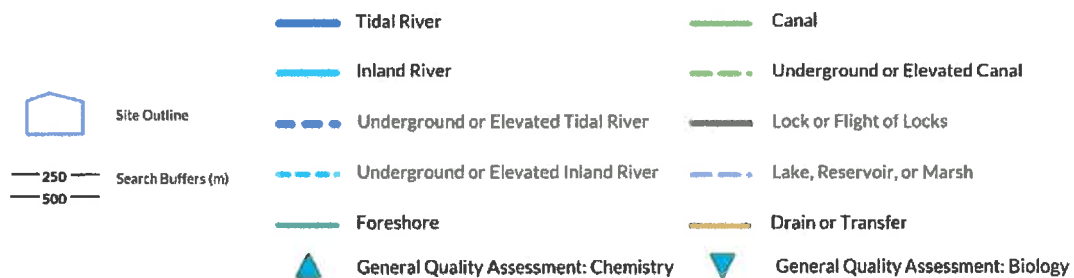
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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
3	0	On Site	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
1	102	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	218	S	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
5	257	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
8	434	NW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.2 Aquifer within Bedrock Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details
3A	693	E	373800 440800	Status: Historical Licence No: 2671309033 Details: Transfer between sources Direct Source: Surface, Non-tidal - North West Region Point: Mearley Brk Feeding Primrose Lodge At Clitheroe \$314 Data Type: Point Name: STALWART DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4549 Original Start Date: 16/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/12/1966 Version End Date:
4A	693	E	373800 440800	Status: Historical Licence No: 2671309033 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface, Non-tidal - North West Region Point: Mearley Brk Feeding Primrose Lodge At Clitheroe \$314 Data Type: Point Name: STALWART DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4549 Original Start Date: 16/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/12/1966 Version End Date:
Not shown	822	E	373900 440600	Status: Historical Licence No: 2671309032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface, Non-tidal - North West Region Point: Pendleton Brk@clitheroe Feeding Mill Pond,primrose Wks \$313 Data Type: Point Name: STALWART DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4549 Original Start Date: 16/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/12/1993 Version End Date:
Not shown	822	E	373900 440600	Status: Historical Licence No: 2671309032 Details: Transfer between sources Direct Source: Surface, Non-tidal - North West Region Point: Pendleton Brk@clitheroe Feeding Mill Pond,primrose Wks \$313 Data Type: Point Name: STALWART DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4549 Original Start Date: 16/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/12/1993 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	900	E	374000 440700	Status: Historical Licence No: 2671309032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface, Non-tidal - North West Region Point: Pendleton Brk@clitheroe Feeding The Mill Pond, Primrose Wks Data Type: Point Name: STALWART DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4549 Original Start Date: 16/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/12/1993 Version End Date:
Not shown	900	E	374000 440700	Status: Historical Licence No: 2671309032 Details: Transfer between sources Direct Source: Surface, Non-tidal - North West Region Point: Pendleton Brk@clitheroe Feeding The Mill Pond, Primrose Wks Data Type: Point Name: STALWART DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4549 Original Start Date: 16/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/12/1993 Version End Date:
Not shown	1064	E	374100 441200	Status: Historical Licence No: 2671309033 Details: Transfer between sources Direct Source: Surface, Non-tidal - North West Region Point: Mearley Brk Feeding Primrose Lodge At Clitheroe Data Type: Point Name: STALWART DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4549 Original Start Date: 16/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/12/1966 Version End Date:
Not shown	1064	E	374100 441200	Status: Historical Licence No: 2671309033 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Surface, Non-tidal - North West Region Point: Mearley Brk Feeding Primrose Lodge At Clitheroe Data Type: Point Name: STALWART DYEING CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 4549 Original Start Date: 16/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/12/1966 Version End Date:
Not shown	1195	NE	374200 441300	Status: Historical Licence No: 2671309025 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Surface, Non-tidal - North West Region Point: Mearley Brk At Clitheroe Data Type: Point Name: JAMES THORNER LTD Annual Volume (m³): 227300 Max Daily Volume (m³): 981.93 Application No: 3198 Original Start Date: 11/11/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1966 Version End Date:
Not shown	1195	NE	374200 441300	Status: Historical Licence No: 2671309025 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Surface, Non-tidal - North West Region Point: Nearley Brk At Clitheroe Data Type: Point Name: JAMES THORNER LTD Annual Volume (m³): 227300 Max Daily Volume (m³): 981.936 Application No: 3198 Original Start Date: 11/11/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/11/1966 Version End Date:
Not shown	1737	W	371100 441200	Status: Historical Licence No: 2671309019 Details: General Farming & Domestic Direct Source: "surface, Non-tidal - North West Region" Point: "spring Fed Storage Tank, At Withgill Knoll, Higher Hodder" Data Type: Point Name: BARNES Annual Volume (m³): - Max Daily Volume (m³): - Application No: 3489 Original Start Date: 20/5/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/1994 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1737	W	371100 441200	Status: Historical Licence No: 2671309019 Details: General Farming & Domestic Direct Source: Surface, Non-tidal - North West Region Point: Spring Fed Storage Tank, At Withgill Knoll, Higher Hodder Data Type: Point Name: BARNES	Annual Volume (m³): - Max Daily Volume (m³): - Application No: 3489 Original Start Date: 20/5/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/1994 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site

None identified

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

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

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.
108	W	Minor Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

6.9 River Quality

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

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	727	SW	372500 440100	River Name: Ribble Reach: Clitheroe Stw To Hodder End/Start of Stretch: Start of Stretch NGR	C	B	B	B	B
Not shown	727	SW	372500 440100	River Name: Ribble Reach: Stock Beck To Clitheroe Stw End/Start of Stretch: End of Stretch NGR	B	B	B	A	A
Not shown	739	N	372800 441720	River Name: Bashall Brook Reach: Qsl Bashall Hall To Ribble End/Start of Stretch: End of Stretch NGR	B	B	B	B	A

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

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	727	SW	372500 440100	River Name: Ribble Reach: Stock Beck To Clitheroe Stw End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	727	SW	372500 440100	River Name: Ribble Reach: Clitheroe Stw To Hodder End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	739	N	372800 441720	River Name: Bashall Brook Reach: Qsl Bashall Hall To Ribble End/Start of Stretch: End of Stretch NGR	A	A	A	A	B
Not shown	825	N	372752 441799	River Name: Bashall Brook Reach: Qsl Bashall Hall To Ribble End/Start of Stretch: Sample Point NGR	A	A	A	A	B

6.10 Ordnance Survey MasterMap Water Network

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

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

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

ID	Distance/Direction	Name	Type of Watercourse	Additional Details
1	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
2	53 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	53 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	72 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
18	72 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	90 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
19	90 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	105 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
20	105 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	113 W	River Ribble	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 33.9
21	113 W	River Ribble	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 33.9
7	118 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
22	118 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
8	142 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
23	142 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	144 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	144 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	148 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
25	148 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
11	158 W	River Ribble	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 26.1
26	158 W	River Ribble	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 26.1
12	175 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
27	175 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	186 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
28	186 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
14	198 SW	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.3
29	198 SW	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.3
15	210 SW	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.4
30	210 SW	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.4
16	214 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
31	214 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	216 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
32	216 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
18	218 SW	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.2
33	218 SW	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.2
19	227 NW	River Ribble	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 25.1
34	227 NW	River Ribble	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 25.1

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
20	285 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
35	285 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
21	290 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
36	290 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
22	305 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	305 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
23	319 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
38	319 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	321 SW	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
25	321 NW	River Ribble	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 29.9
39	321 SW	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.8
40	321 NW	River Ribble	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 29.9

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
26	341 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.2
27	341 SE	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.7
41	341 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 6.2
42	341 SE	Pendleton Brook	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.7
28	469 S	Barrow Clough	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	469 S	Barrow Clough	Inland river not influenced by normal tidal action.	Catchment Area: Ribble Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

6.11 Surface Water Features

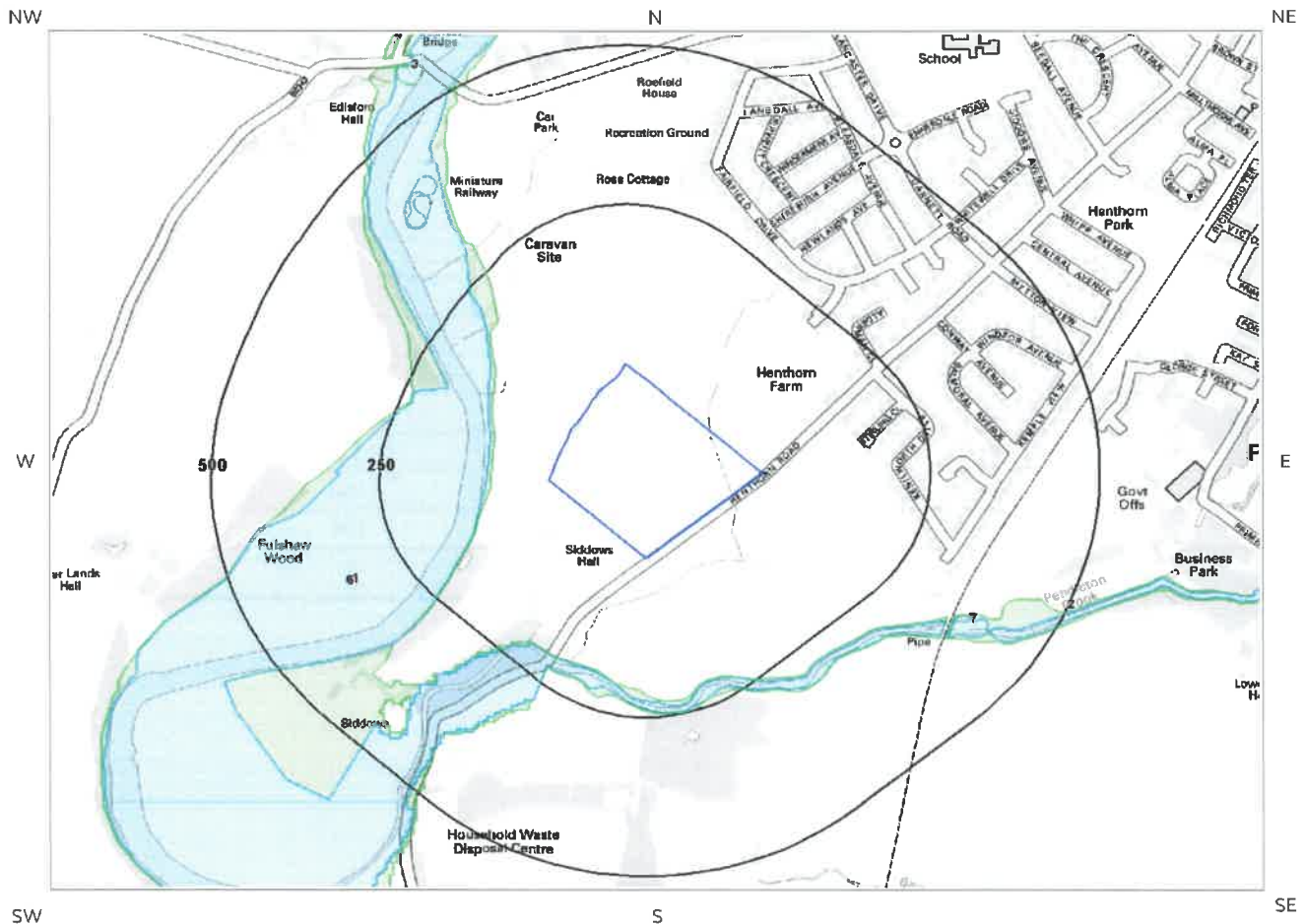
Surface water features within 250m of the study site

Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
0	On Site
12	SE
52	SE
54	SE
90	SE
98	W
114	NE
118	NW
128	W
163	SW
166	SW
175	SW
186	NW
195	SW
197	NW
216	NW

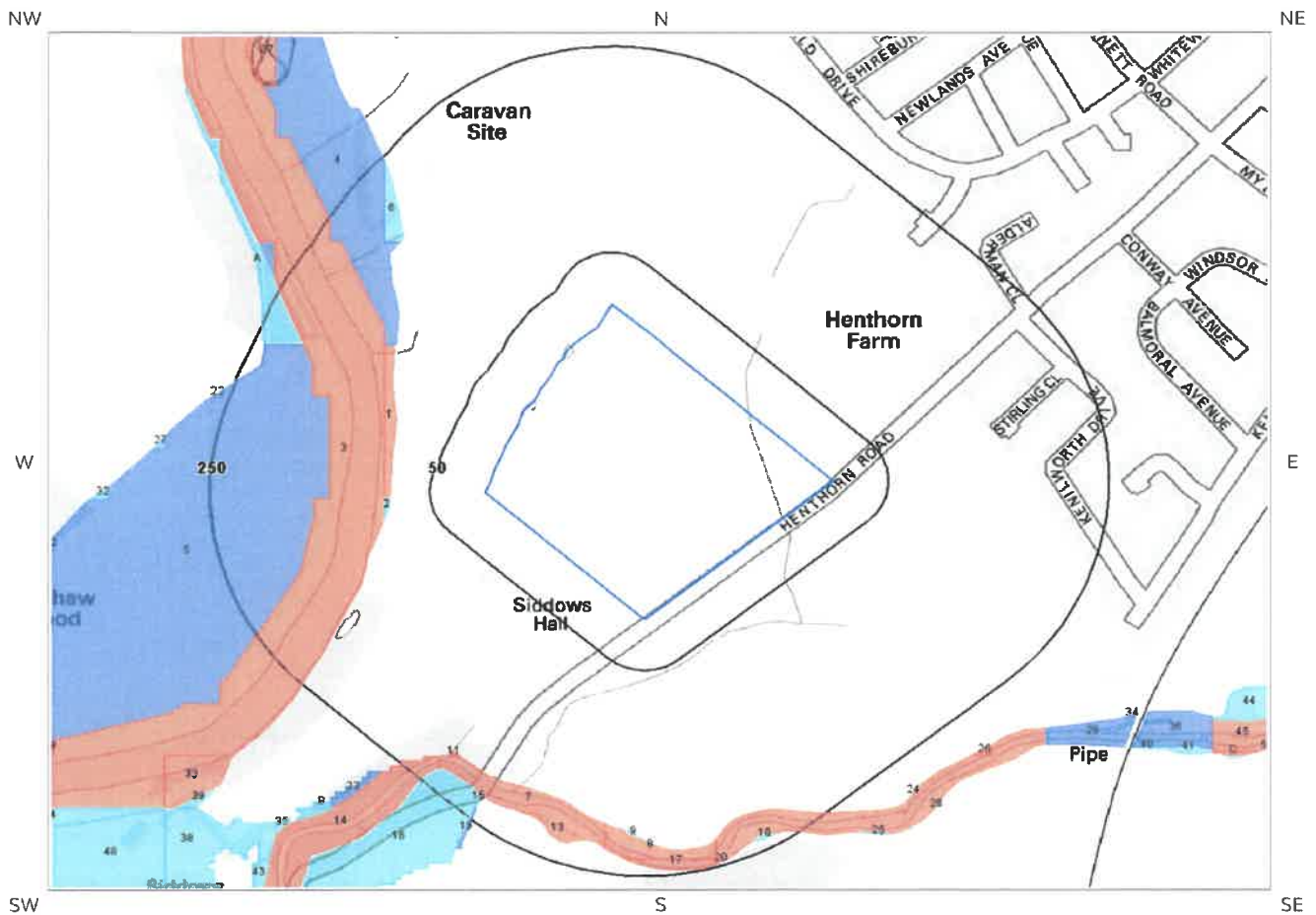
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



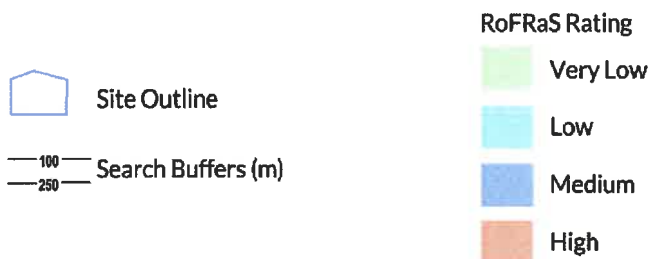
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m Identified

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

ID	Distance (m)	Direction	Update	Type
1	86	W	19-Mar-2018	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m Identified

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

ID	Distance (m)	Direction	Update	Type
1	92	W	19-Mar-2018	Zone 3 - (Fluvial Models)

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

Highest risk of flooding onsite Very Low

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

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

7.4 Flood Defences

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

7.5 Areas benefiting from Flood Defences

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

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site None identified

7.7 Groundwater Flooding Susceptibility Areas

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

Clearwater Flooding or Superficial Deposits Flooding Superficial Deposits Flooding

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

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

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

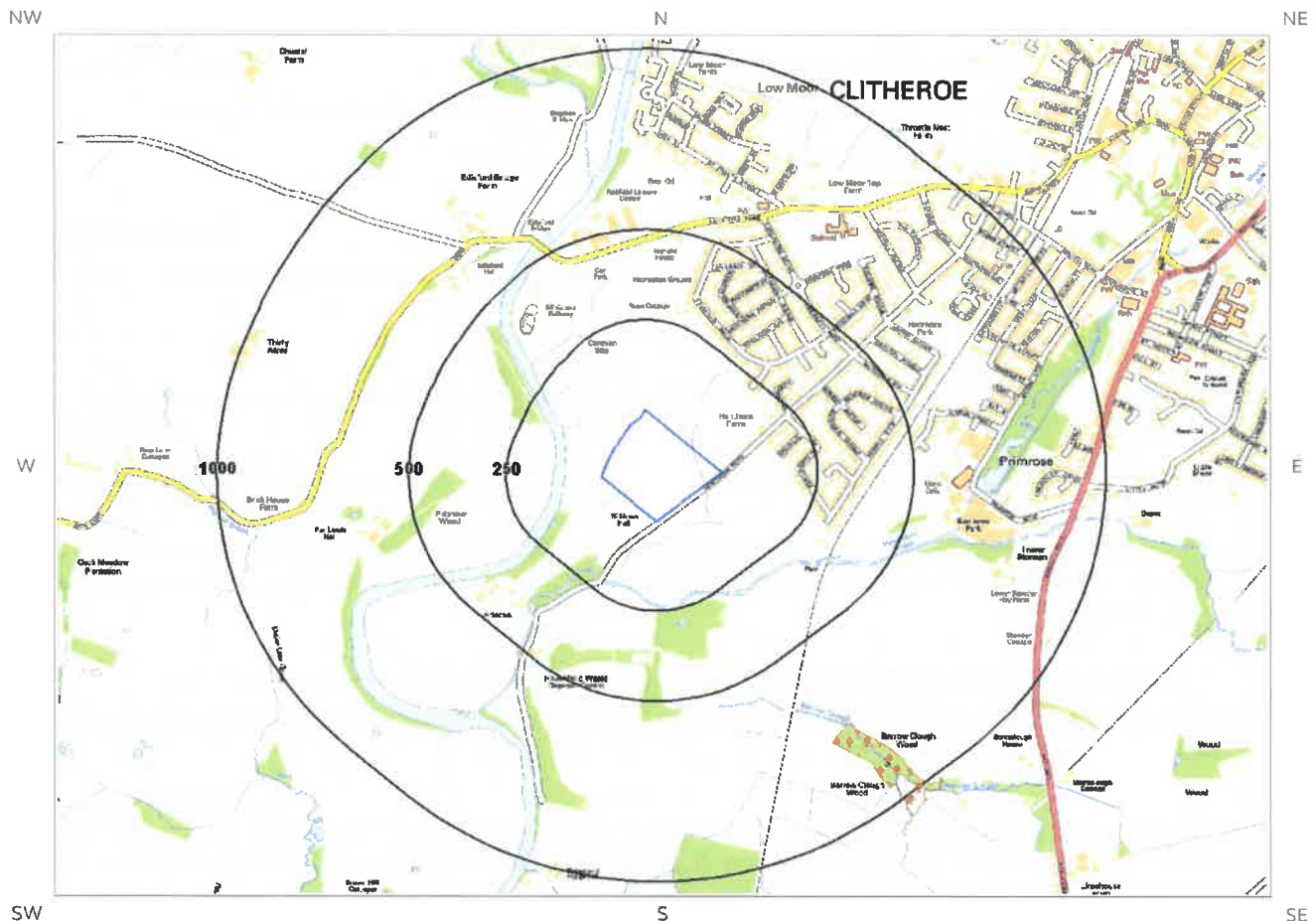
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result High

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

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
3	748	SE	UNKNOWN	Ancient and Semi-Natural Woodland

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

The following Area of Outstanding Natural Beauty (AONB) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	AONB/NSA Name	Data Source
Not shown	1850	SW	Forest Of Bowland	Natural England
Not shown	1850	SW	Forest Of Bowland	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

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

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

Hazard

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

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site Very Low

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

Hazard

Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site Very Low

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

Hazard

Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.

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

Maximum Compressible Ground* hazard rating identified on the study site

Negligible

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

Hazard

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

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site

Very Low

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

Hazard

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

9.1.6 Running Sand

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

Very Low

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

Hazard

Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

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

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site

None identified

Database searched and no data found.

10.2 Non-Coal Mining

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

Identified

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

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

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

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

Contact Details

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British Geological Survey Enquiries

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Fax: 0115 936 3276.
Email:

Web: www.bgs.ac.uk

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



**British
Geological Survey**
NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

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

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk



**Environment
Agency**

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Public information access office
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www.gov.uk/phe
Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000



**Public Health
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The Coal Authority

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



**The Coal
Authority**

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505



Local Authority

Authority: Ribble Valley Borough Council
Phone: 01200 425111

Web: <https://www.ribblevalley.gov.uk/>

Address: Council Offices, Church Walk, Clitheroe, Lancashire, BB7 2RA

Gemapping PLC

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



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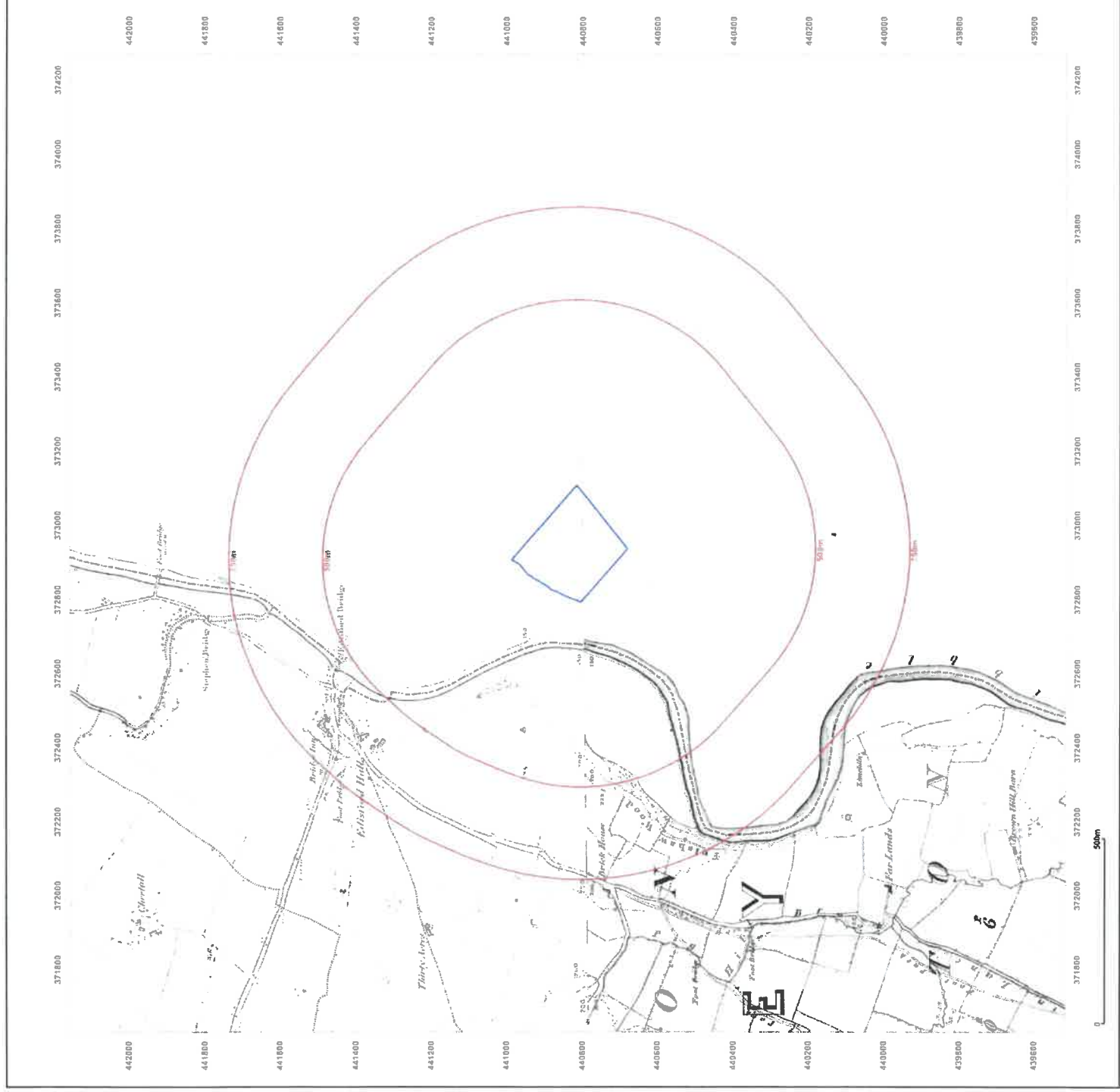
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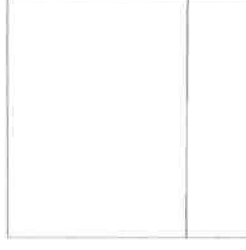
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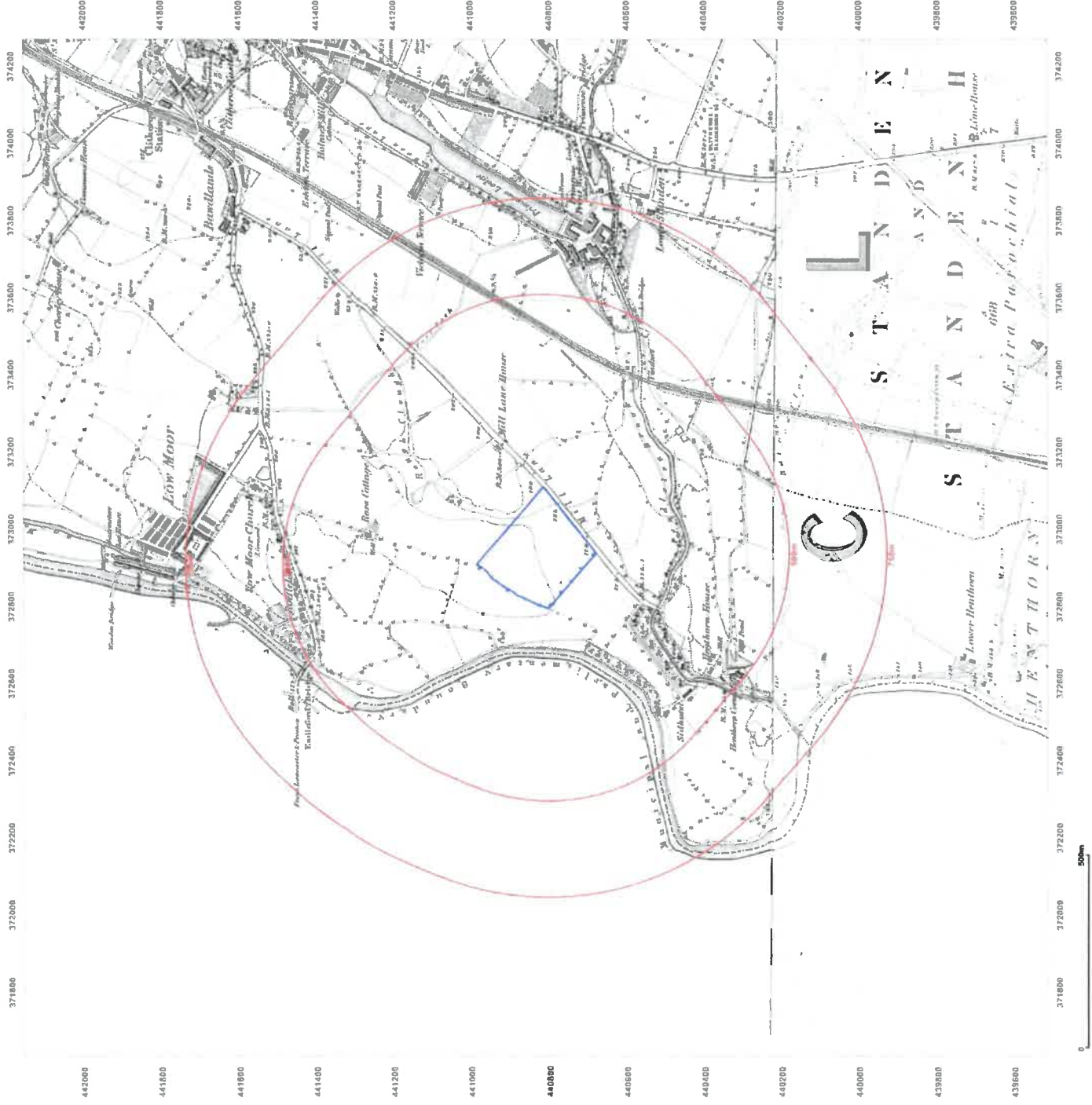


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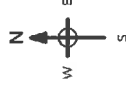
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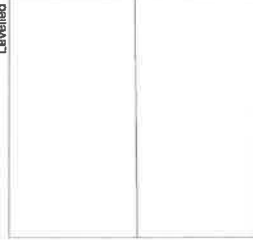
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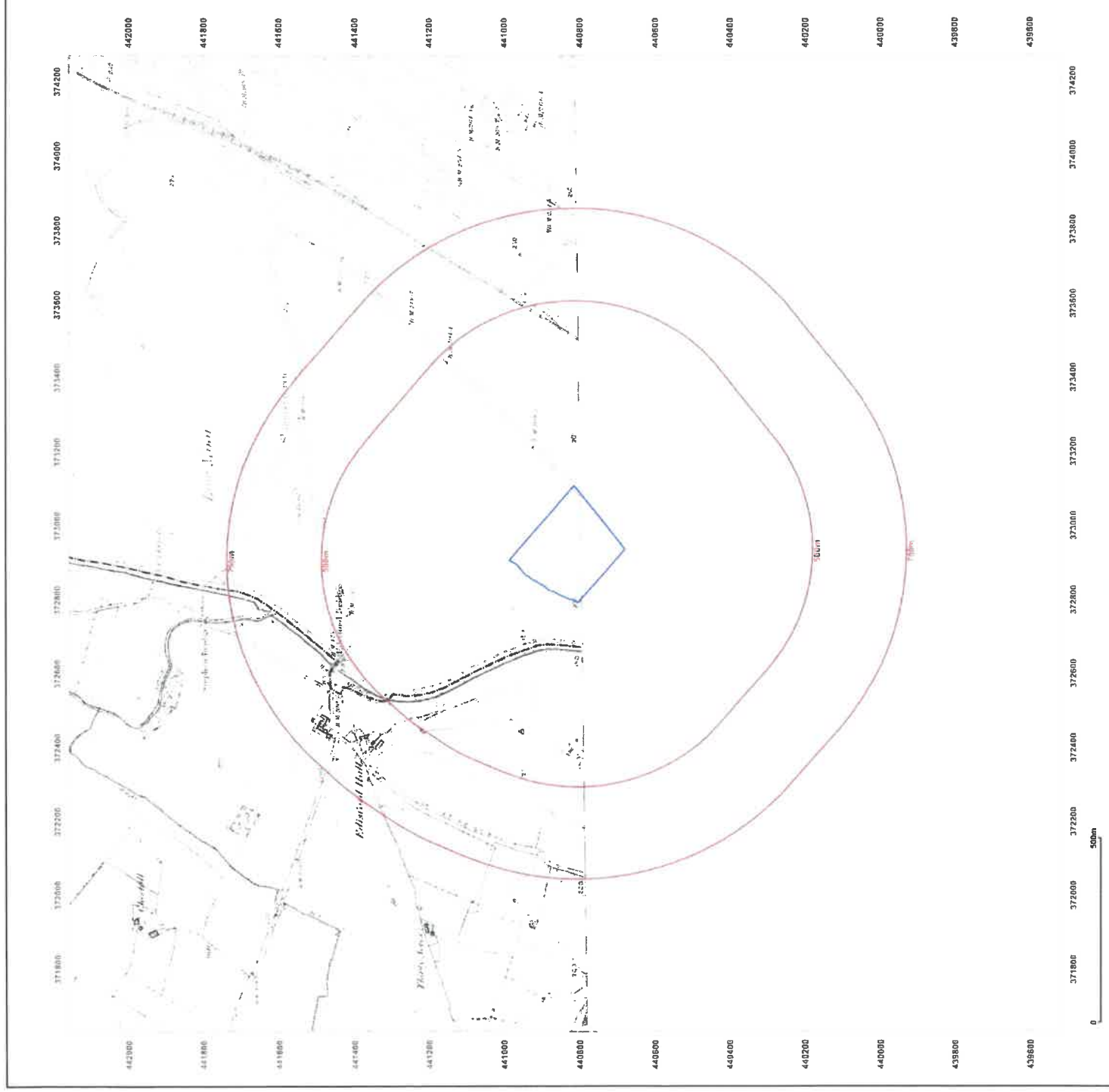
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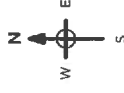
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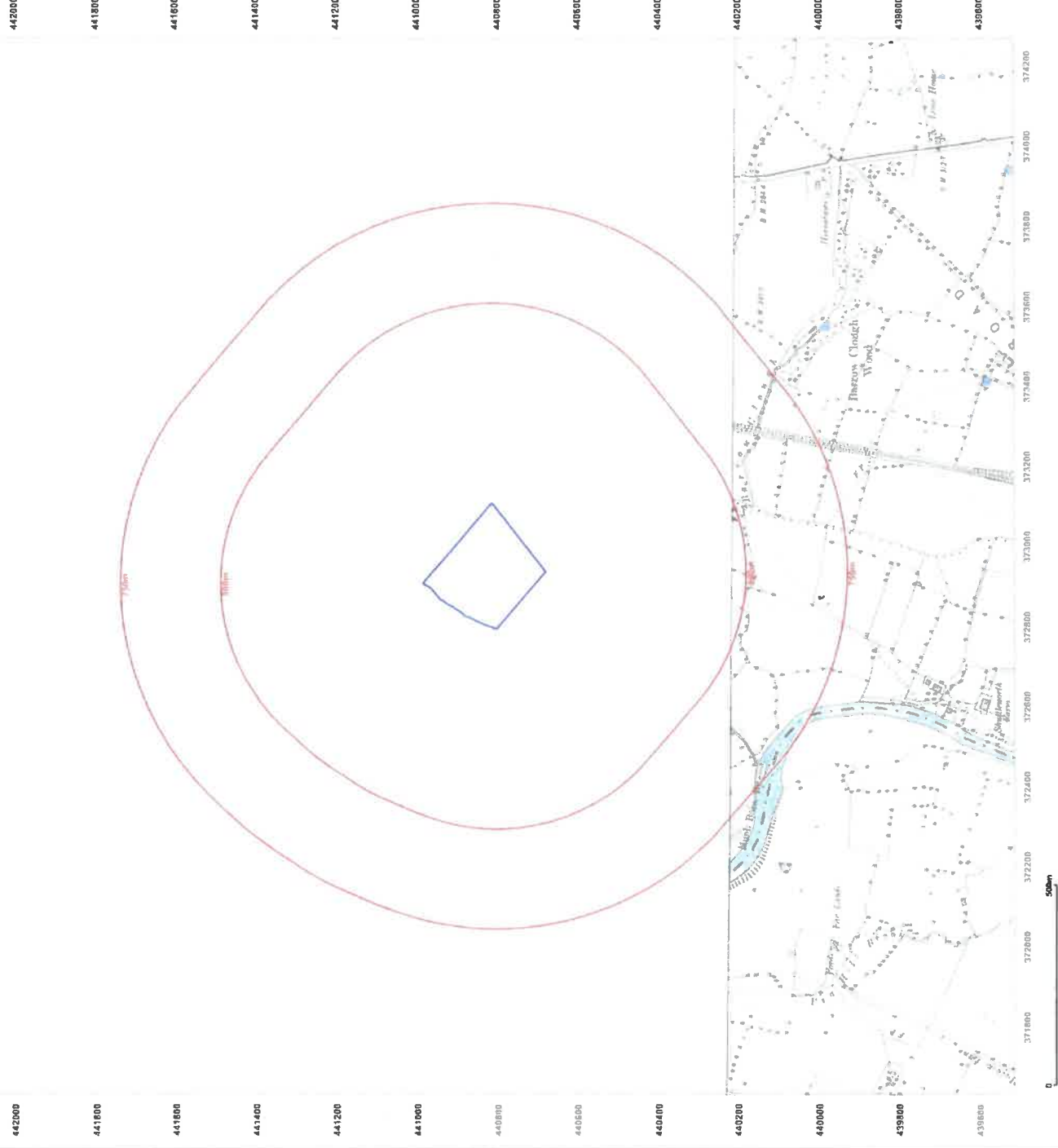
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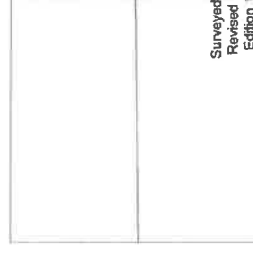
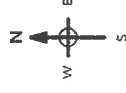
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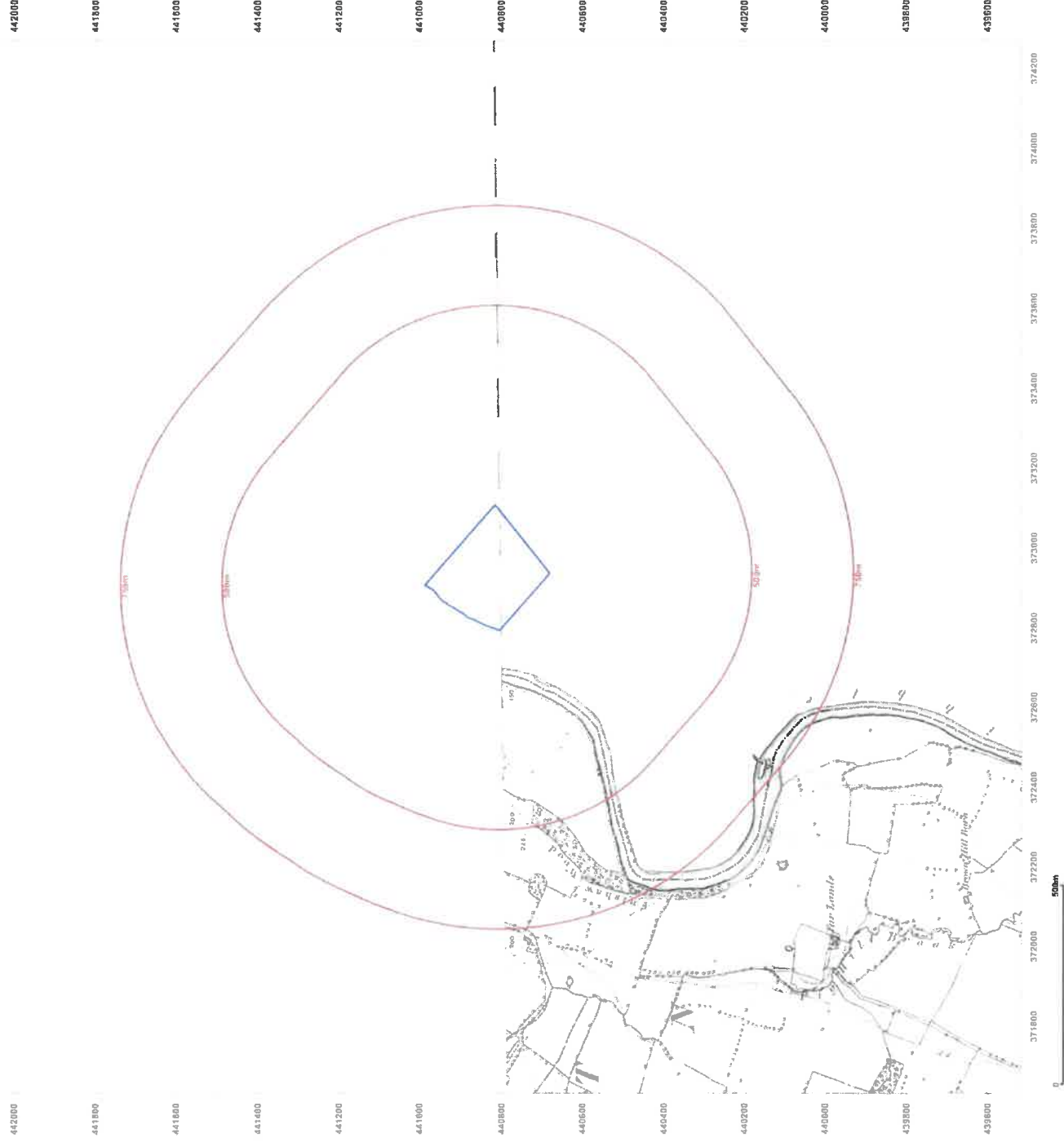
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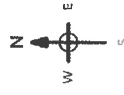
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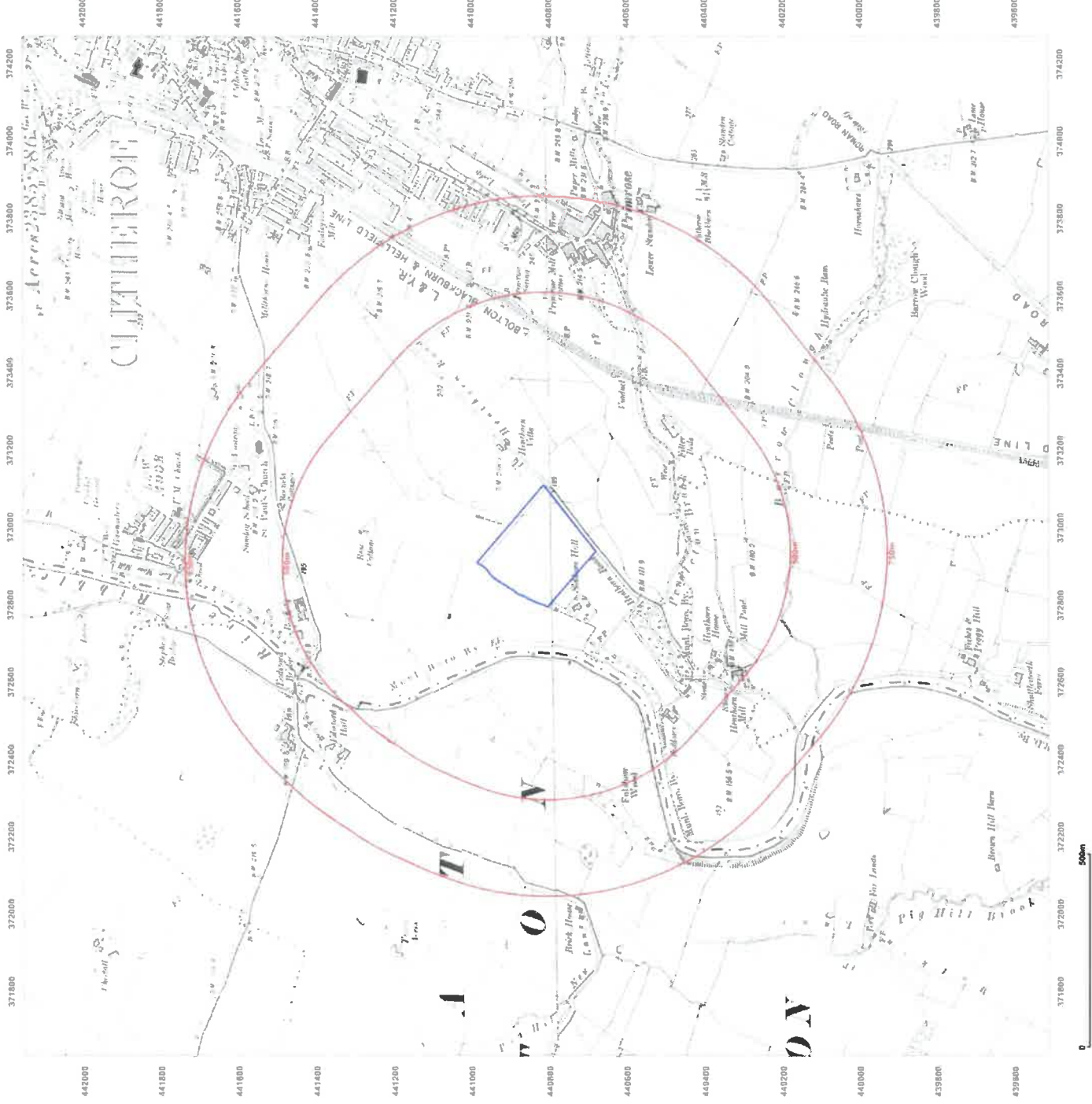


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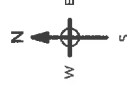
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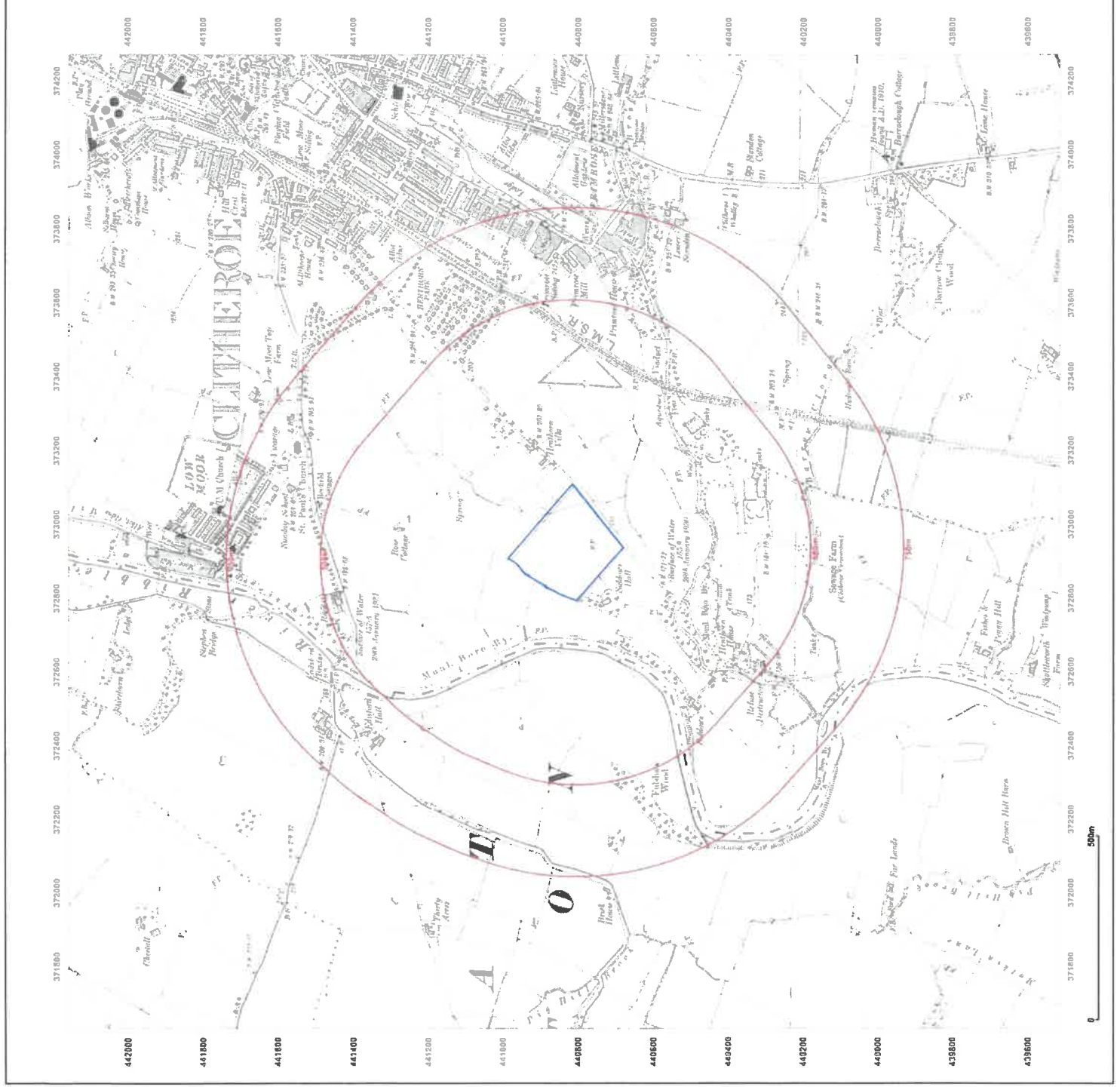
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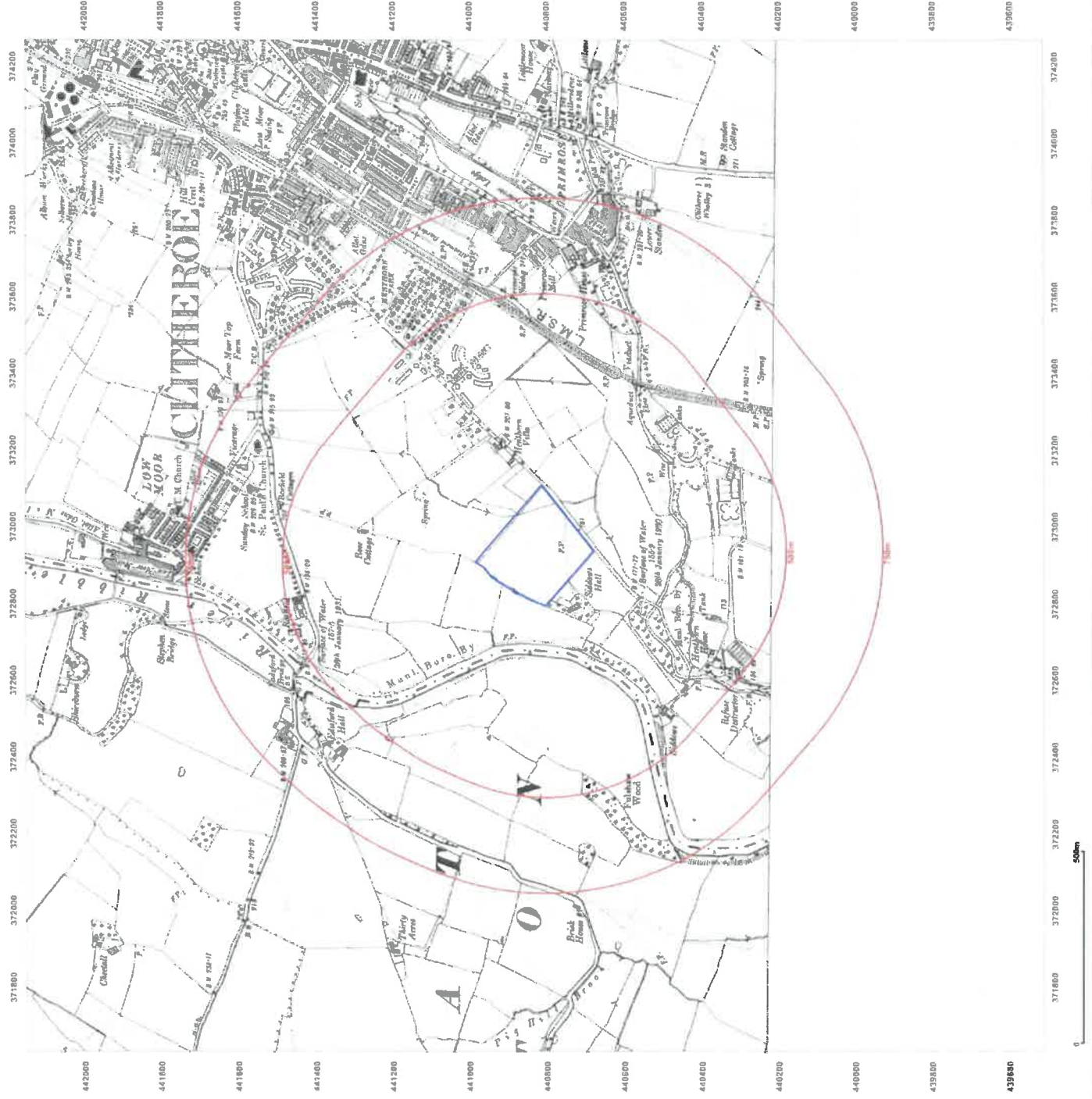
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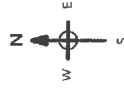
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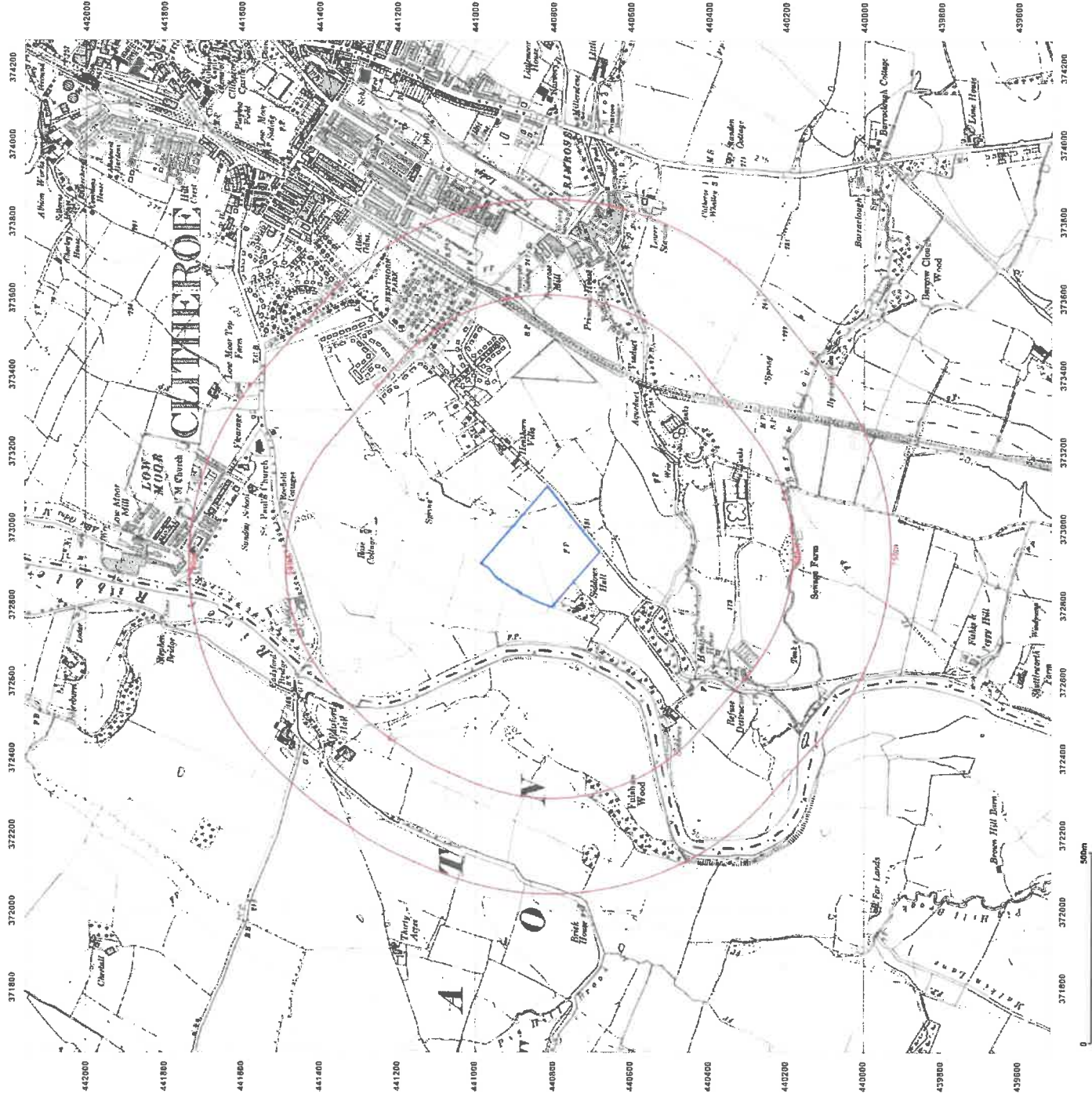


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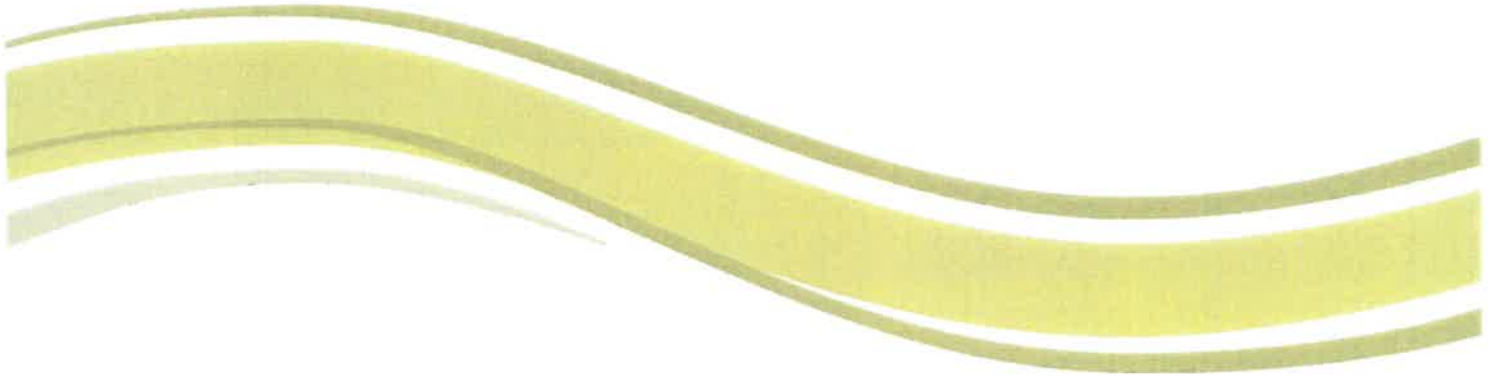
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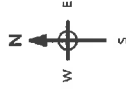
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Grid Ref: 372949, 440836

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

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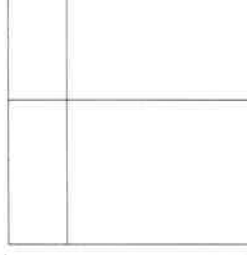


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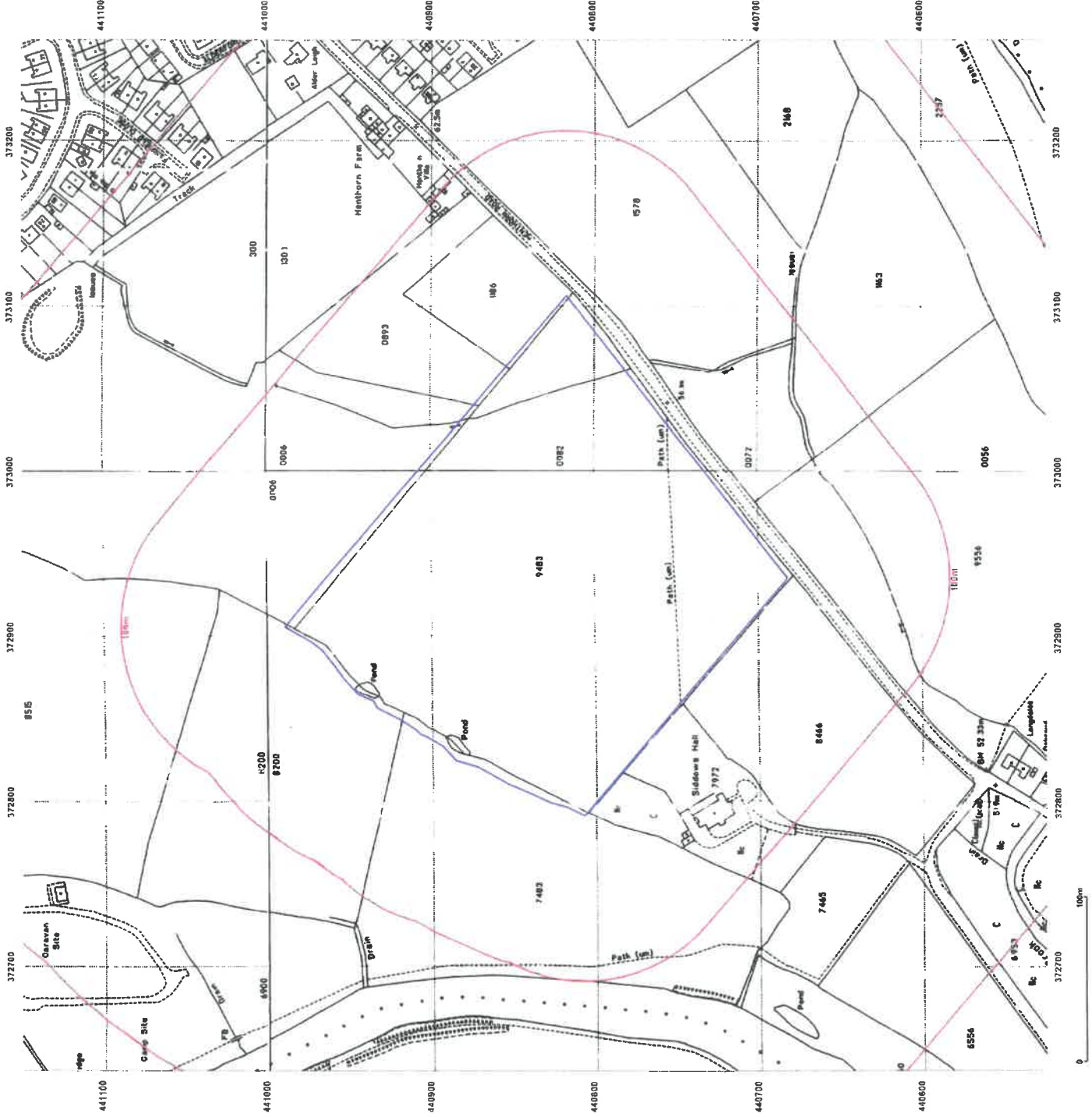
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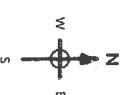
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Map Name: National Grid

Map date: 1976-1977

Scale: 1:2,500

Printed at: 1:2,500



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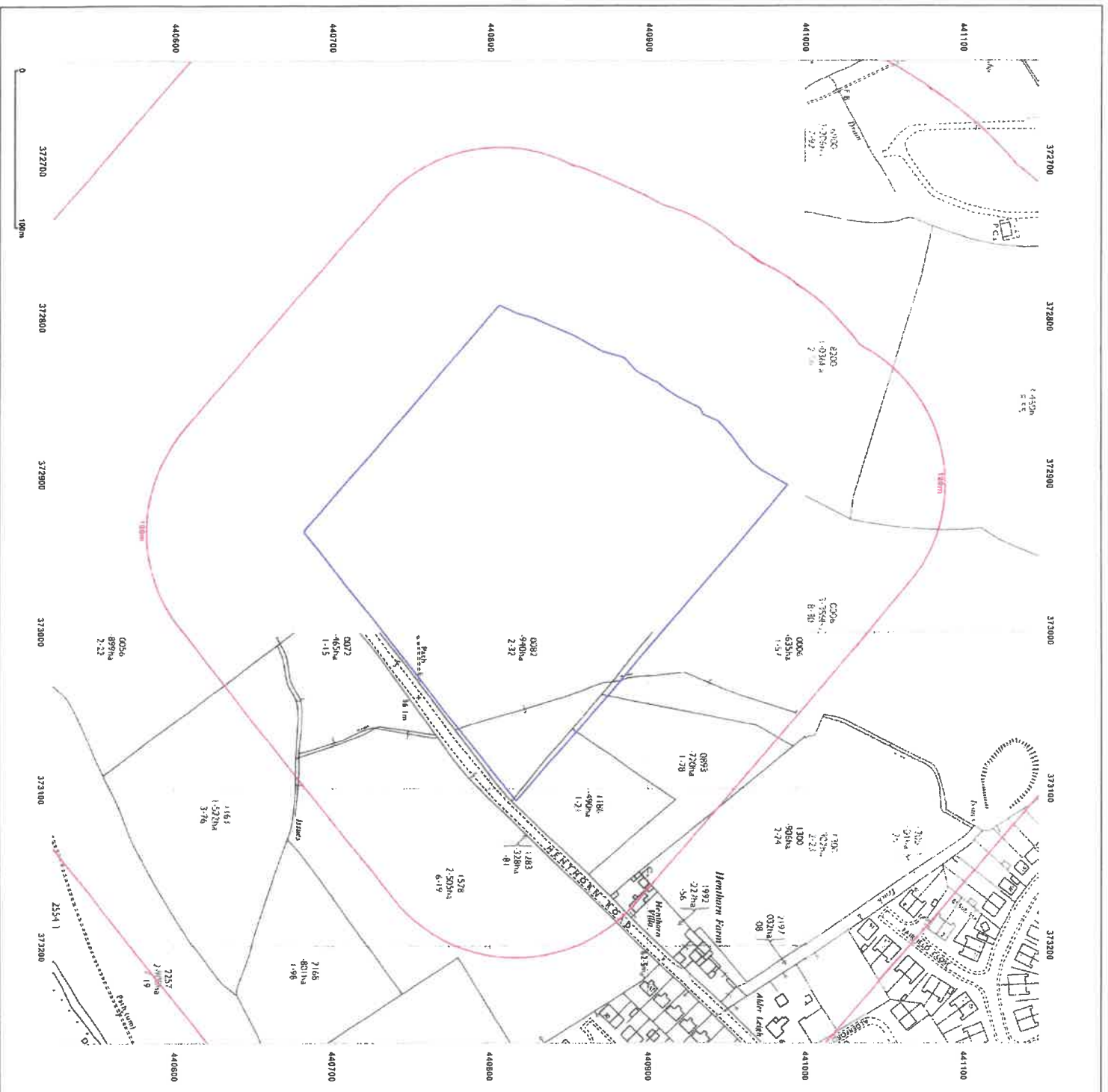


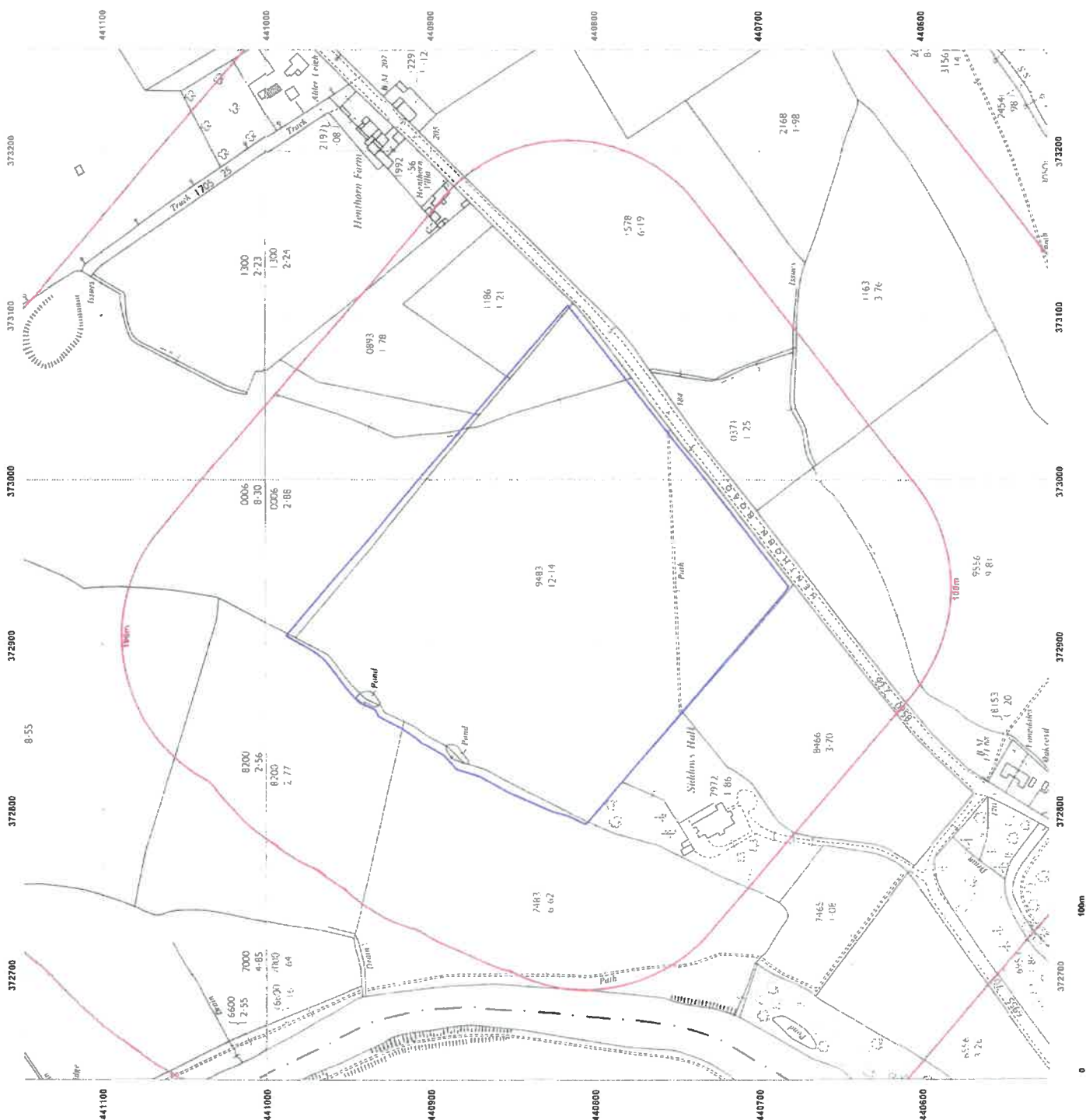
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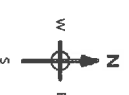
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Map Name: County Series

Map date: 1932

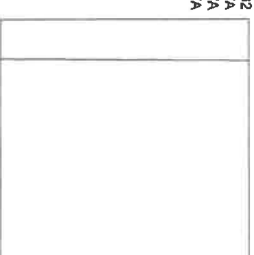
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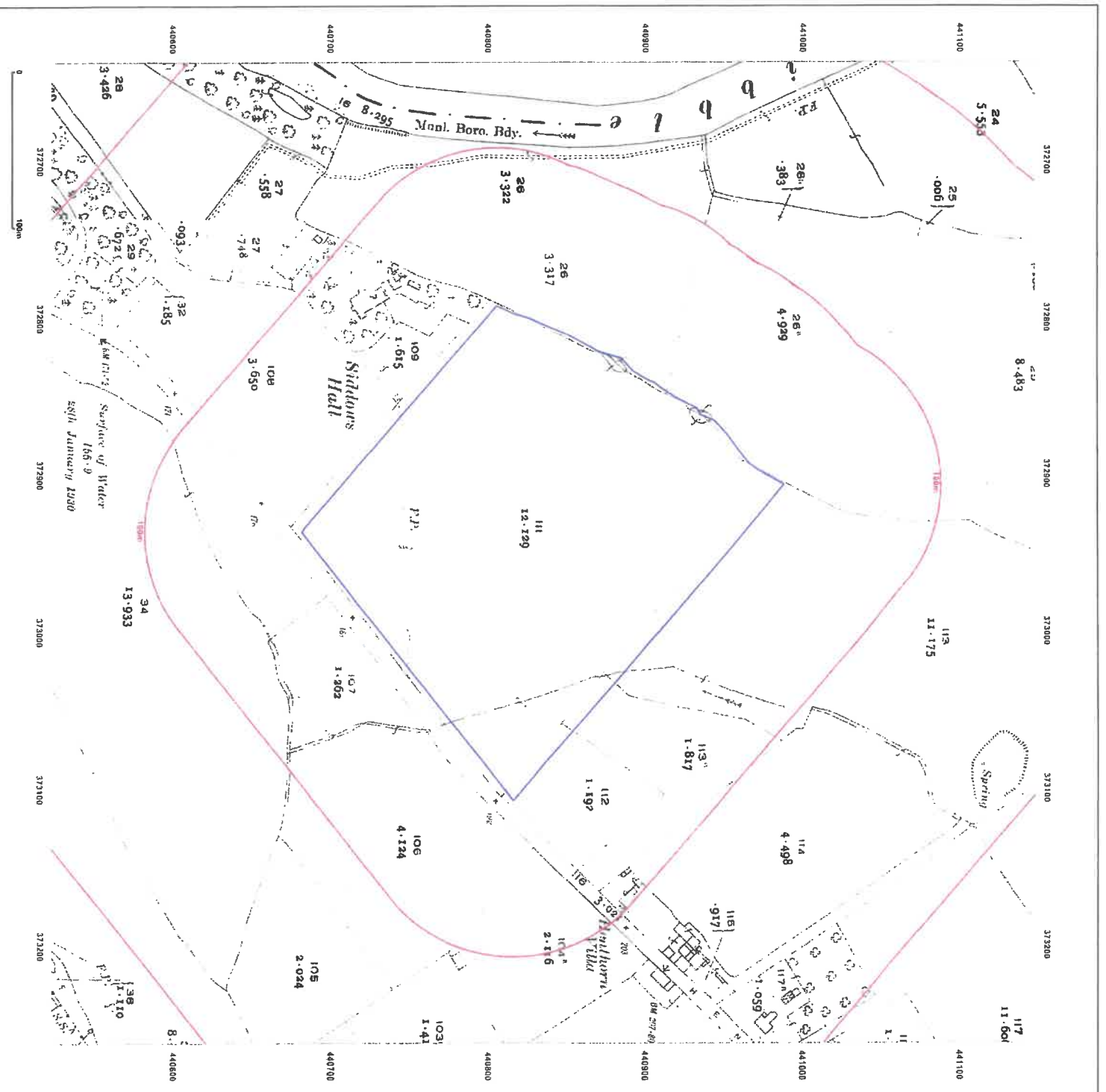
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Client Ref: EMS_481313_645768
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Map Name: County Series

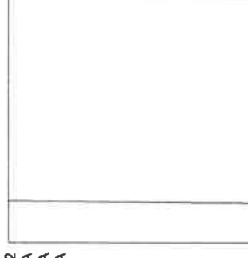
Map date: 1912

Scale: 1:2,500

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Edition N/A
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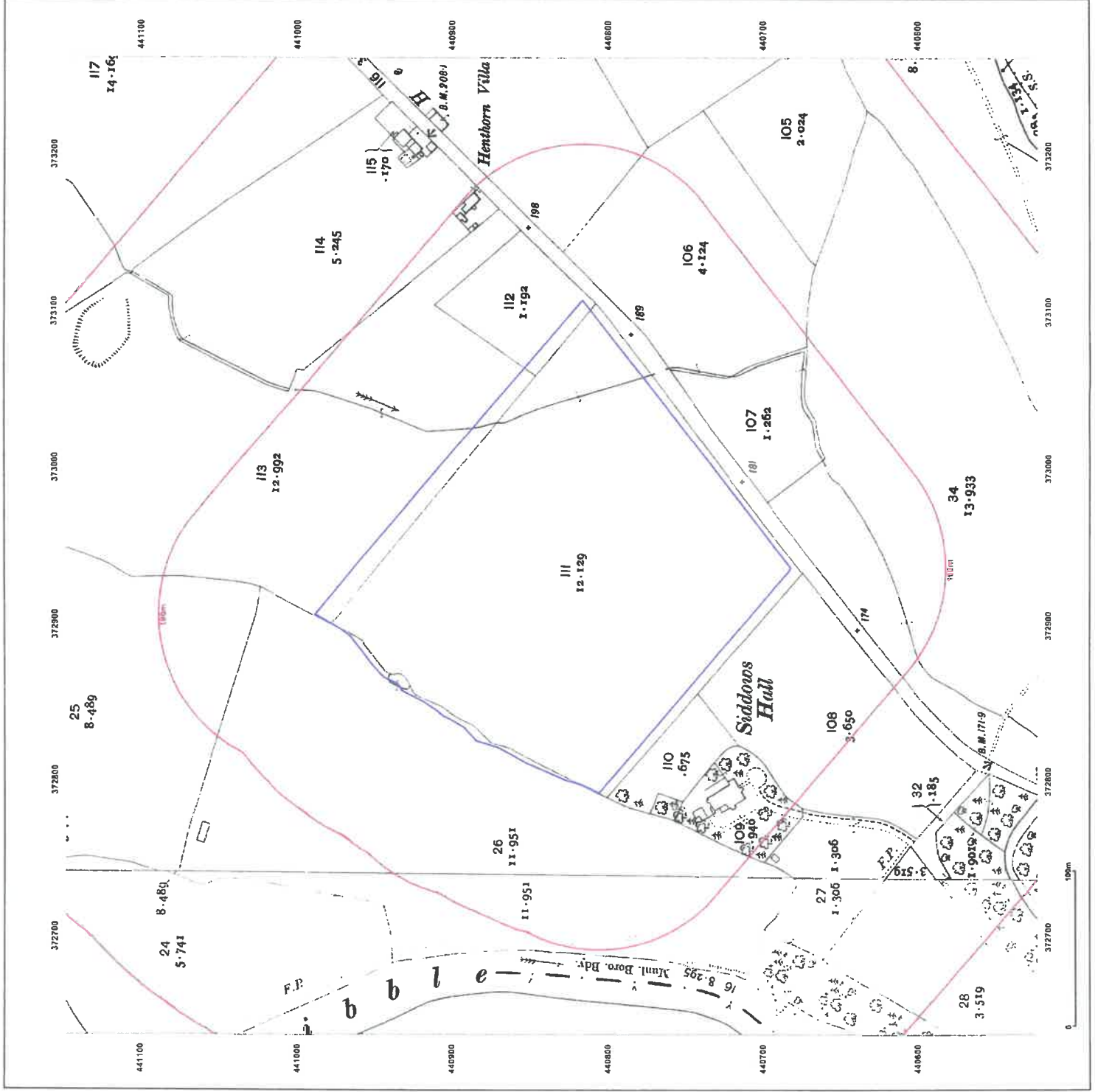


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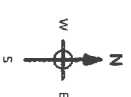
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Grid Ref: 372949, 440836

Map Name: County Series

Map date: 1908

Scale: 1:2,500

Printed at: 1:2,500



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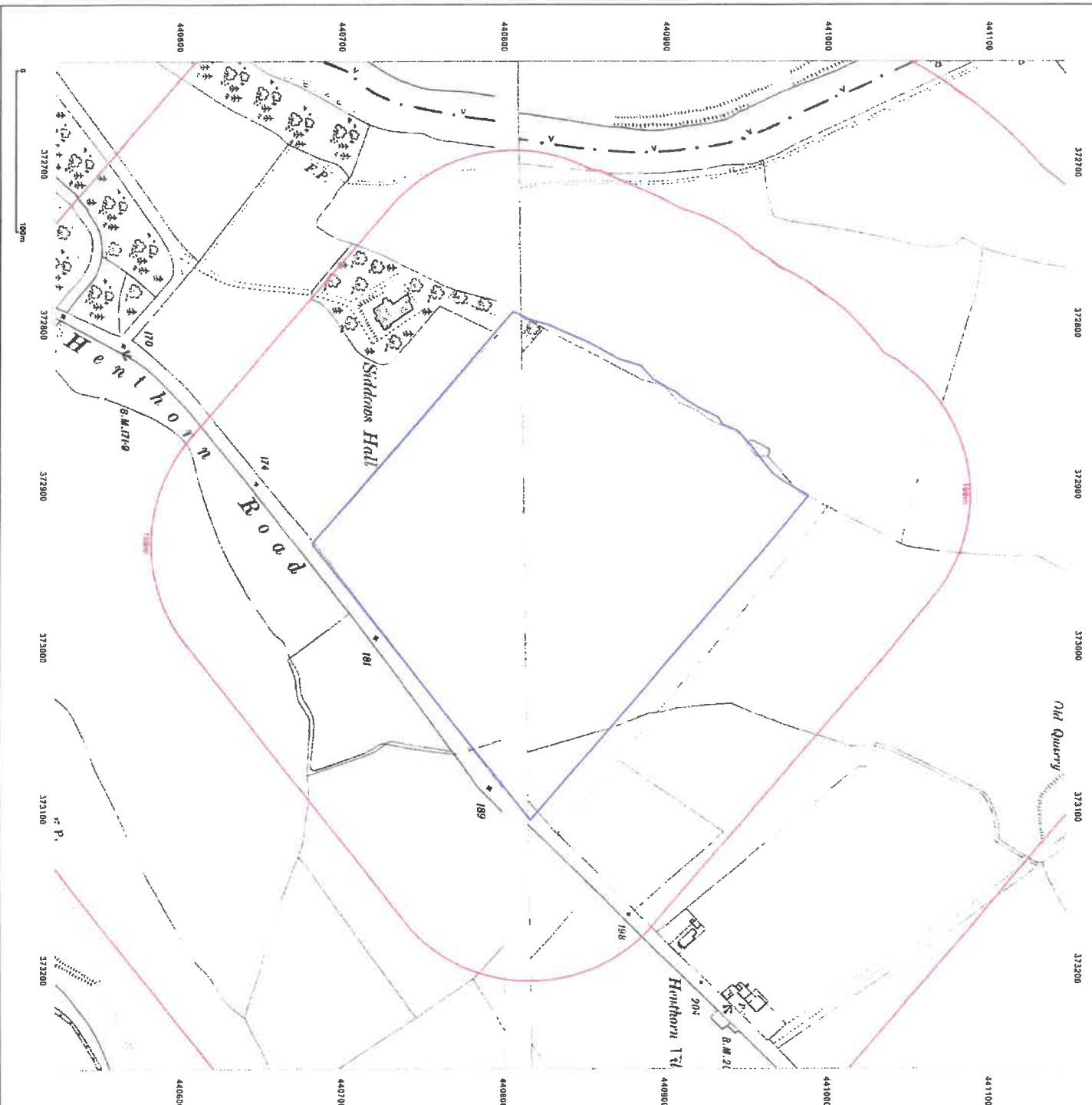


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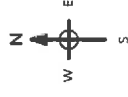
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Grid Ref: 372949, 440836

Map Name: County Series

Map date: 1894

Scale: 1:2,500

Printed at: 1:2,500



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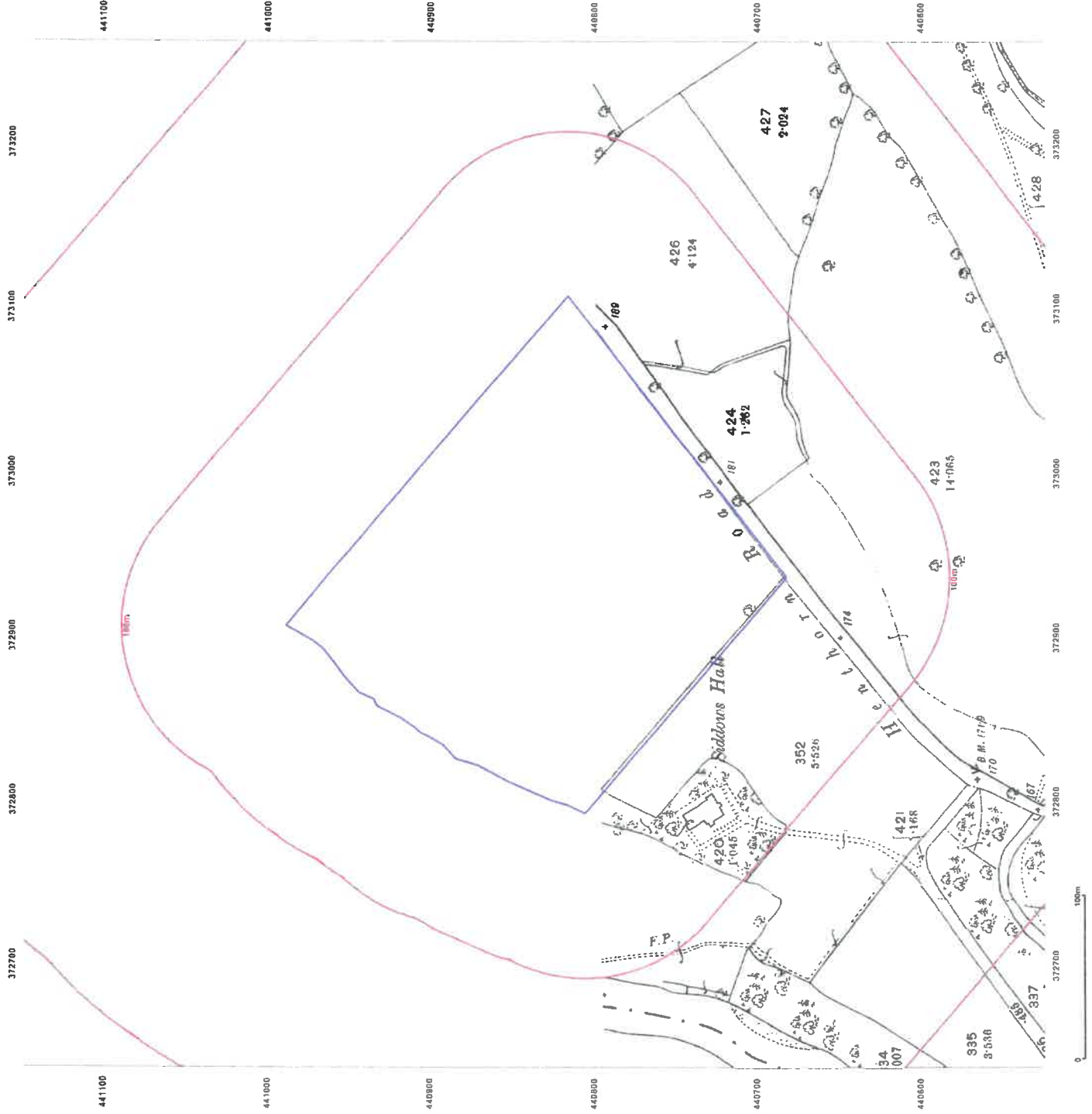


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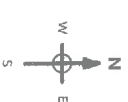
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Grid Ref: 372949, 440836

Map Name: County Series

Map date: 1886

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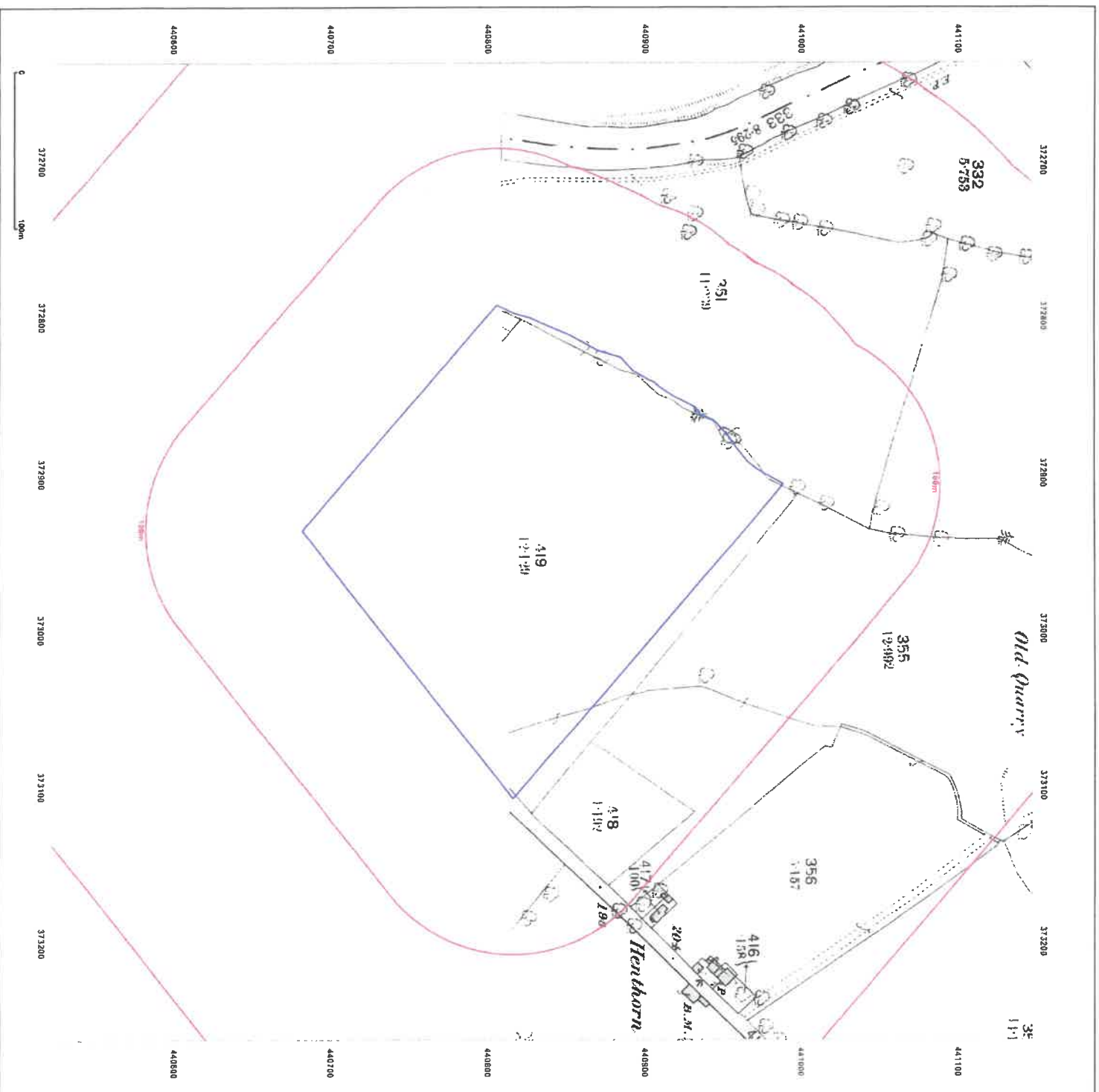


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Report Ref: EMS-481313_645768
Grid Ref: 372949, 440836

Map Name: County Series

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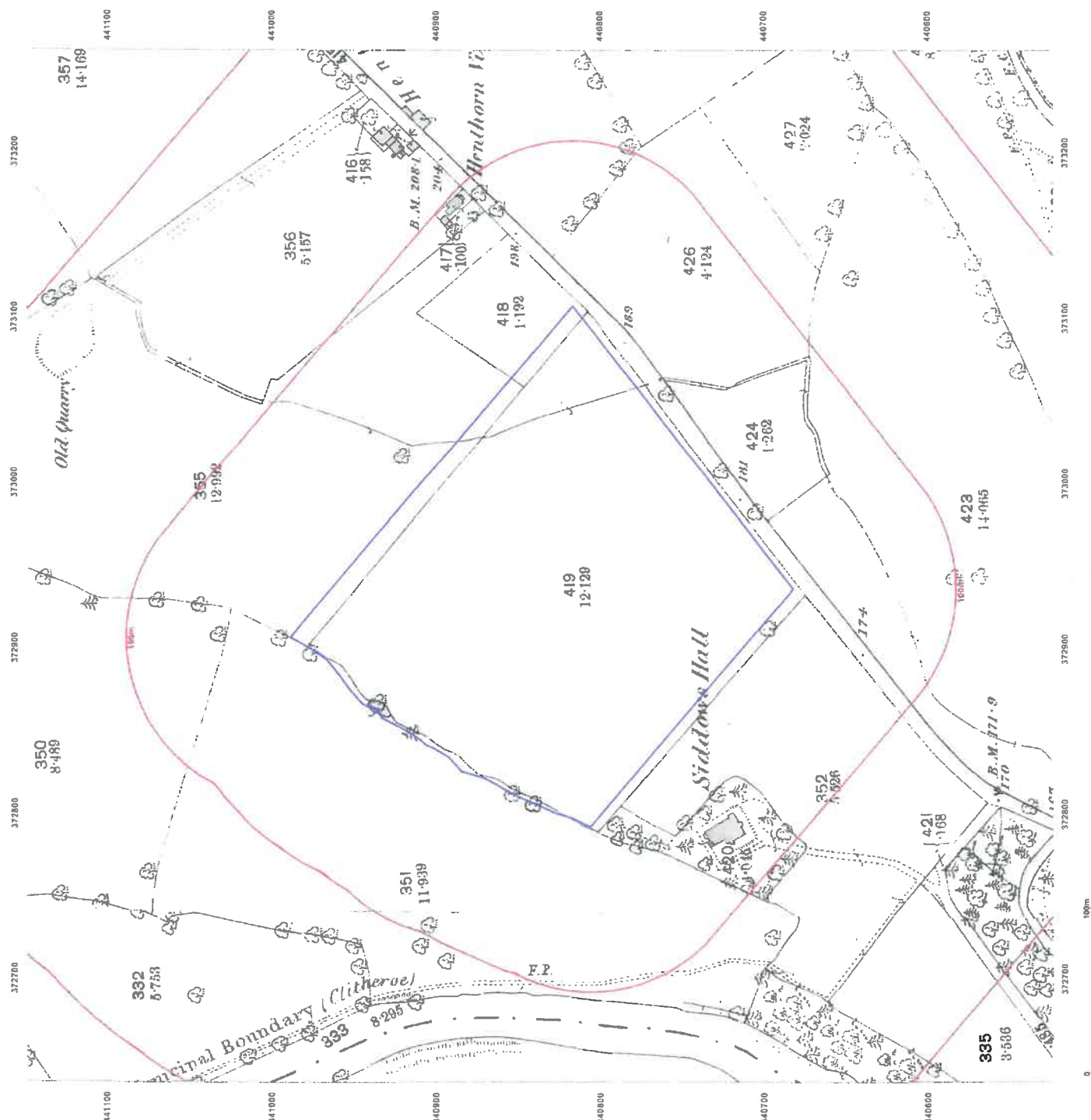
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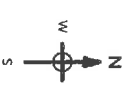
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Grid Ref: 372949, 440836

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000



2014



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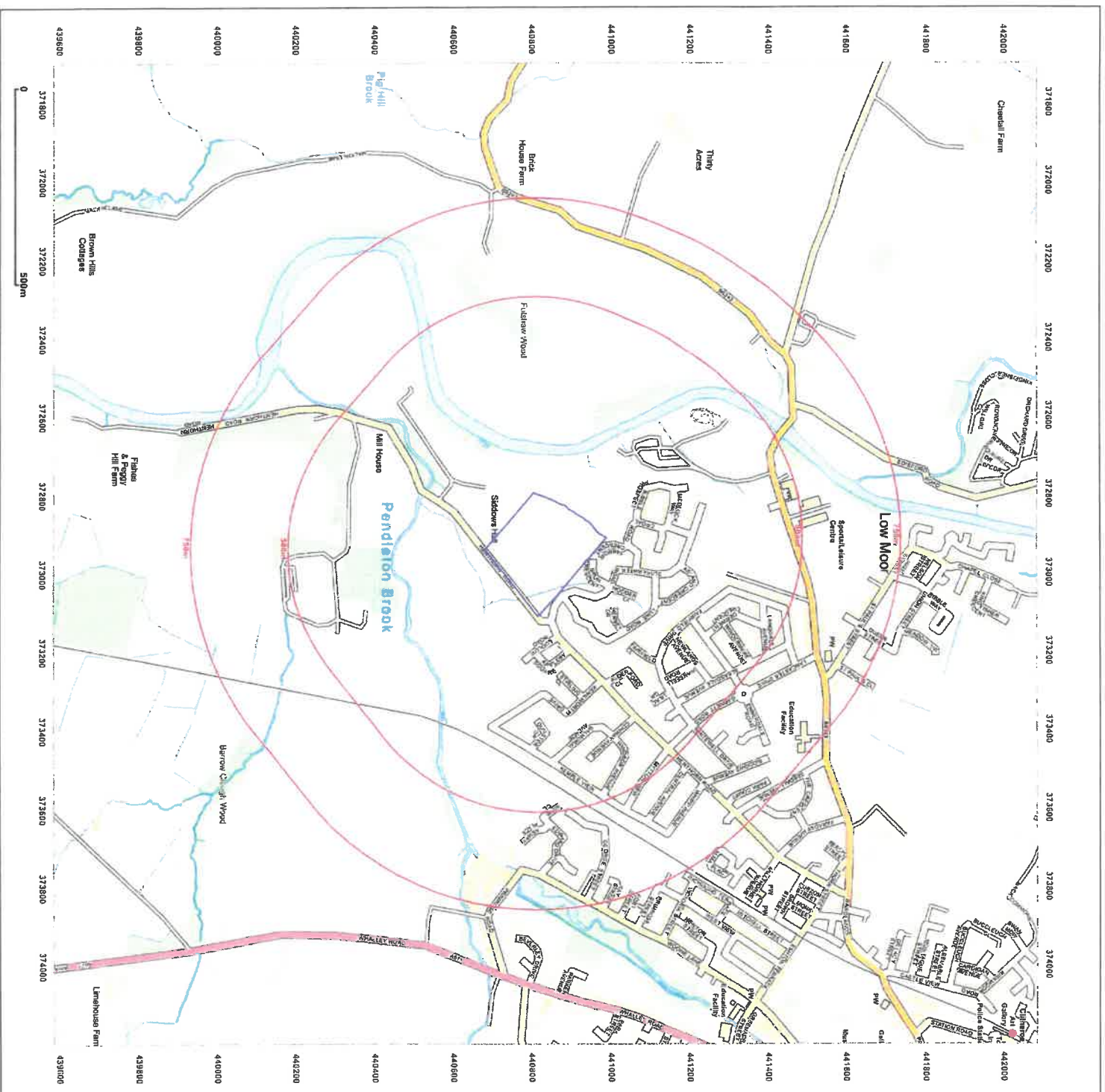


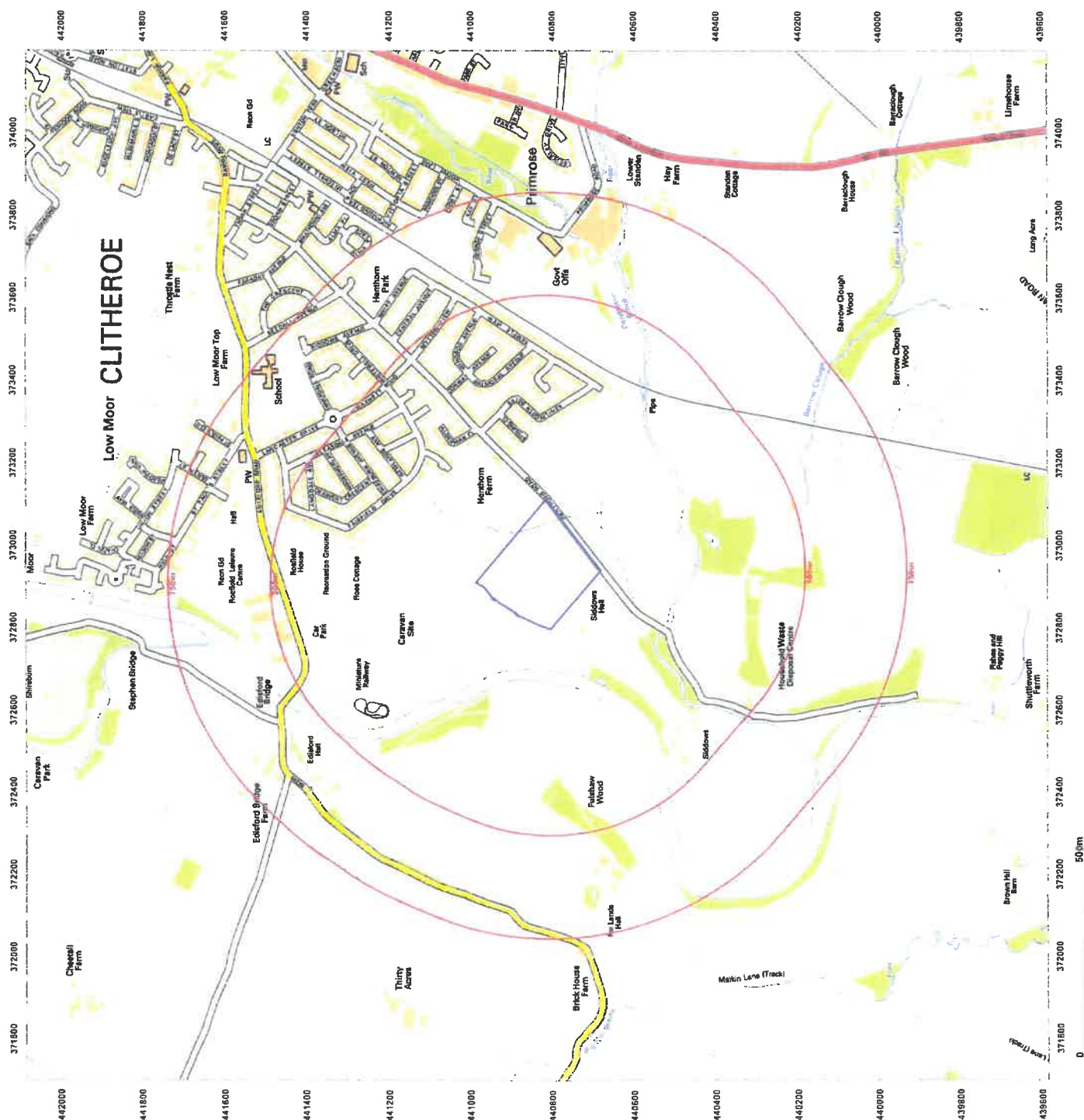
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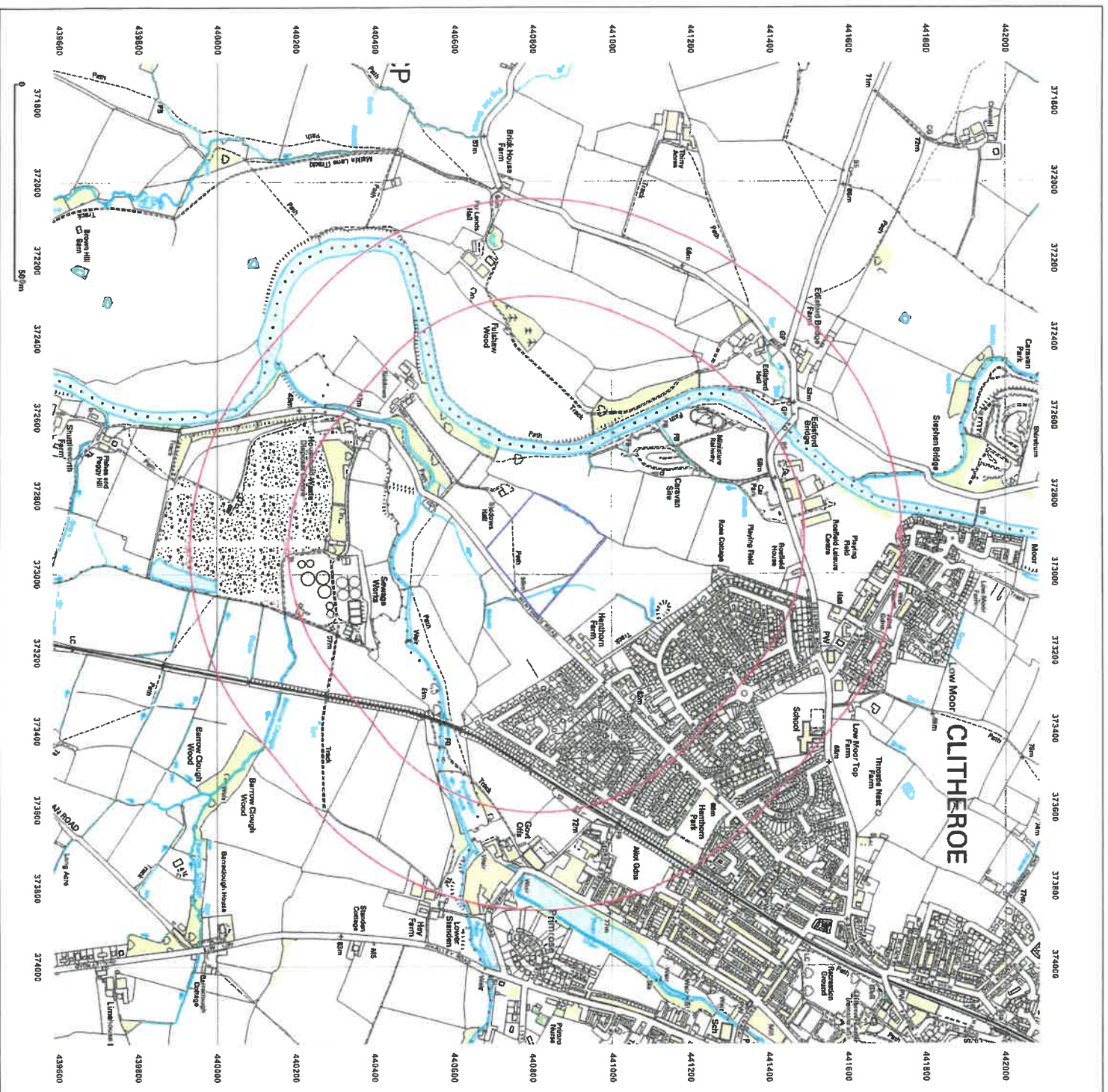
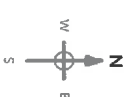
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Grid Ref: 372949, 440836

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000



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Client Ref: EMS_481313_645768
Report Ref: EMS_481313_645768
Grid Ref: 372949, 440836

Map Name: National Grid

Map date: 1971-1973

Scale: 1:10,000

Printed at: 1:10,000



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