



Cornwall Contaminated Land Services Ltd

Report No. 2021/103/PI

**BARN CONVERSION ADJACENT TO BODRAWL BUNGALOW**

**TIER 1 PRELIMINARY RISK ASSESSMENT**

Report Date: 10<sup>th</sup> June 2021

**Mr Howard Knapman**  
Bodrawl Bungalow  
St Pinnock  
Liskeard  
Cornwall  
PL14 4QT

**Cornwall Contaminated Land Services Ltd**  
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Perranwell  
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Company Registration No. 9579802

## BARN CONVERSION ADJACENT TO BODRAWL BUNGALOW

### TIER 1 PRELIMINARY RISK ASSESSMENT

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## **1. INTRODUCTION**

- 1.1.1 Cornwall Contaminated Land Services Ltd (CCLS) has been appointed by Mr Ralph Pannell to undertake a Phase I Contaminated Land Desk Study and Preliminary Risk Assessment for the site Adjacent to Bodrawl Bungalow, St Pinnock, Cornwall PL14 4QT ('the site'). A site location plan is provided as Figure 1 and a site boundary plan is provided as Figure 2.
- 1.1.2 This report has been prepared by CCLS solely for the benefit of Mr Knapman. It shall not be relied upon or transferred to any third party without the prior written authorisation of CCLS.

## **2. SCOPE AND OBJECTIVES**

- 2.1.1 The Objective of this Desk Study is to examine past and present site conditions to identify any potential risk of contamination resulting from historical and contemporary site usage. Any recommendations for further works have been made as deemed appropriate, based upon the findings of the investigation.
- 2.1.2 This assessment has been undertaken with guidance from BS10175:2011<sup>(1)</sup> and Environment Agency Land Contamination Risk Management guidance<sup>(2)</sup>, and as such represents a Tier 1 Preliminary Risk Assessment.

## **3. INFORMATION SOURCES**

- 3.1.1 This assessment has been based upon mapping and information obtained from a number of trusted third party sources. Although we only use information from trusted sources, CCLS cannot accept any responsibility for any inaccuracy of third party information. The sources used in this assessment are listed below:
- Groundsure Enviro + Geo Insight Report (Ref: GS-7925222), dated 4<sup>th</sup> June 2021; and
  - Groundsure MapInsight Report (Ref: GS-7925221), dated 4<sup>th</sup> June 2021; and

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1 BS 10175:2011 'Investigation of Potentially Contaminated Sites – Code of Practice'.

2 Environment Agency, 8 October 2020. Guidance: Land Contamination Risk Management – How to Assess and Manage the Risks from Land contamination.

#### **4. SITE LOCATION**

- 4.1.1 The site is located approximately 2Kilometres to the South-east of East Taphouse and is centred on National Grid Reference E219707, N062153. A site location plan is provided as Figure 1.
- 4.1.2 The development site is situated between the main farm dwellings and a separate bungalow.

#### **5. SURROUNDING AREA**

- 5.1.1 The site is located on a farm within a rural area. The main farm, comprising farmhouse and barns, is located adjacent to the West. A site boundary plan is provided as Figure 2.

#### **6. PROPOSED DEVELOPMENT**

- 6.1.1 It is proposed to convert the barn into a residential dwelling.

#### **7. SITE WALKOVER SURVEY**

- 7.1.1 A site walkover survey was undertaken on 3<sup>rd</sup> June 2021. Photographs from the walkover survey are provided as Figure 3.
- 7.1.2 The site comprises a stone built barn building over two storeys with lightly wooded area to the South-east. The roof is sheet metal. The general area slopes steeply down from North to South. The barn has been constructed into a bank so that it is accessed via the ground floor from the West and via the first floor from the East.
- 7.1.3 The site owner stated that it was historically used for milking cows and dry storage. There was no storage of fuel or chemicals observed during the site visit.
- 7.1.4 A small above ground heating oil tank is situated outside the adjacent main farm dwelling, down-hill from this site.
- 7.1.5 No features indicative of potentially significant contamination were observed on the application site or in close proximity to the site during the walkover.



## **8. SITE HISTORY**

### **8.1 Historical Map Review**

- 8.1.1 An historic map search was carried out for the site using Ordnance Survey maps dating back to 1881. The mapping is provided as Appendix B. Our review of the historic mapping is summarised below.
- 8.1.2 The earliest available mapping, dated 1881 is unclear, but that of 1882 shows the site in approximately the same format as present day. The barn is shown to have been in three sections but by mapping of 1974 the Eastern-most section is no longer shown. In mapping of 1882 this site is shown to be on the Eastern side of the farmyard, which comprised the main farmhouse and a number of small outbuildings. A number of small buildings are also shown adjacent to the Southern boundary of this site, which are not shown in mapping after 1907. A well is located off the North-eastern side of the farmhouse. By mapping of 1974 a number of the small outbuildings to the North-west of the farmhouse are shown to have been replaced by larger barns, which are still present today.
- 8.1.3 Mapping of 1882 shows a small quarry approximately 200m to the North, which subsequent mapping does not show to have been infilled.
- 8.1.4 This review of historical mapping has not identified any potential sources of contamination that require further assessment.

## **9. PLANNING RECORDS**

- 9.1.1 A search of Cornwall Council's online planning records was undertaken on 10<sup>th</sup> June 2021. None of the planning applications listed in proximity to this site included information pertinent to this land contamination assessment. A previous planning application for the conversion of this barn to a residential use (Ref: PA16/10781) included a Sensitive Development Questionnaire. The responses given in the questionnaire did not highlight any potential sources of contamination.

## **10. ENVIRONMENTAL SETTING**

### **10.1 Surface water**

- 10.1.1 The nearest surface water recorded is a tributary stream to the West Looe River. The stream emerges approximately 40m to the South-west of the development site, on the other side of the Bodrawl Farm, and flows to the South-west. It then joins the West Looe River, which at its closest point is approximately 190m to the South-west of this site, and flows to the South.
- 10.1.2 There are no licensed surface water abstractions recorded within 500metres of this site.
- 10.1.3 There are no licensed surface water discharges recorded within 500metres of this site.

## 10.2 Geology

- 10.2.1 Online geological mapping published on the British Geological Survey website (viewed 9<sup>th</sup> June 2021) shows that the underlying Bedrock is shown to be the Saltash Formation, comprising Slate and Siltstone.
- 10.2.2 The British Geological Survey (BGS) has published mapping that gives estimated background soil chemistry data based on Topsoil sampling at a sample density of one per 2km<sup>2</sup>. The values quoted, together with published screening values for the assessment of risk to human health, are provided below. All estimated background concentrations are below the relevant human health screening values.

	<b>Estimated background concentration</b>	<b>Human Health Screening Values (Residential with plant uptake)</b>
Arsenic	25 - 35 mg/kg	37 mg/kg <sup>(1)</sup>
Bioaccessible Arsenic	No data	37 mg/kg <sup>(1)</sup>
Lead	100 mg/kg	200 mg/kg <sup>(2)</sup>
Bioaccessible Lead	60 mg/kg	200 mg/kg <sup>(2)</sup>
Cadmium	1.8 mg/kg	11 mg/kg <sup>(1)</sup>
Chromium	60 - 90 mg/kg	910 mg/kg <sup>(1)</sup>
Nickel	30 - 45 mg/kg	130 mg/kg <sup>(1)</sup>

<sup>1</sup> Land Quality Press, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment

<sup>2</sup> CL:AIRE (Contaminated Land Applications in Real Environments, 24<sup>th</sup> September 2014. SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Land Contamination. Final Project Report (Revision 2).

## 10.3 Groundwater

- 10.3.1 Mapping provided in the Groundsure report shows that the Bedrock beneath this site is classified as a Secondary A Aquifer. The flow mechanism for the Bedrock aquifer is said to be fracture flow. The aquifer is reported to have a High Vulnerability to pollutants discharged at ground level. It is therefore considered to be of moderate environmental sensitivity.
- 10.3.2 Based on the local topography and nearby surface water courses it is considered likely that the groundwater beneath the site is flowing in a South-westerly direction.
- 10.3.3 There are no licensed groundwater abstraction consents are recorded within 500m of this site.
- 10.3.4 There are no licensed groundwater discharge consents recorded within 500m of this site.
- 10.3.5 The site is not located within an Environment Agency defined Source Protection Zone. Source Protection Zones are used to delineate sensitive groundwater bodies, typically based upon the locations of public drinking water boreholes.

## **10.4 Radon**

10.4.1 Mapping provided by the Health Protection Agency Radon Atlas for England and Wales<sup>(3)</sup> shows this site is within an area where 10% and 30% of homes have radon concentrations above the action level of 200 Bq/m<sup>3</sup>. The development site is therefore located within a radon affected area and advice given in BR211<sup>(4)</sup> is that Full radon protection measures are required for new buildings.

## **10.5 Other environmental information**

### *Waste*

10.5.1 There are no historic or current landfill sites or other waste operations recorded within 500metres of this site.

### *Protected Locations - Environmentally Sensitive Receptors*

10.5.2 This site is not located within a designated environmentally sensitive site.

### *Pollution Incidents*

10.5.3 There are no incidents that have been recorded within 500m of this site.

### *Current Industrial Land Uses*

10.5.4 There are no current industrial activities recorded within 500m of this site.

### *Part 2A Designated Contaminated Land Sites*

10.5.5 There are no Contaminated Land sites, as designated under Part 2A of the Environmental Protection Act 1990, within a 500metre radius of this site.

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3 Health Protection Agency, 2007. Indicative Atlas of Radon in England and Wales. HPA-RPD-033.

4 Building Research Establishment, 2015. BR 211. Radon Protection Measures for New Buildings

## 11. QUALITATIVE RISK ASSESSMENT

### 11.1 Definitions of Contaminated Land and Land Contamination

11.1.1 The assessment of risk from land contamination draws upon a number pieces of legislation and guidance that have been published by different government bodies, and by specific Acts of Parliament.

11.1.2 The most relevant Act of Parliament is Part 2A of the Environmental Protection Act 1990, which provides the basis for the assessment of land contamination. This Act defines that Contaminated Land is:

*“any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:*

- (a) significant harm is being caused or there is a significant possibility of such harm being caused; or*
- (b) pollution of controlled waters is being, or is likely to be, caused.”*

11.1.3 A site can only be designated as Contaminated Land, by the Local Authority, if a plausible pollutant linkage can be identified. This comprises of a source of contamination, a sensitive receptor that is or is likely to be affected, and a pathway of transmission between the two.

11.1.4 Contaminated Land in the context of Part 2A of the Environmental Protection Act 1990 specifically deals with sites that require immediate remediation. However, the assessment of land contamination draws upon the same principals. A site can therefore be affected by land contamination, but not be deemed to be Contaminated Land, which is determined via specific tests of significance.

### 11.2 Initial Conceptual Site Model

11.2.1 This desk study has been undertaken to characterise the site and identify whether any plausible pollutant linkages might be present. These plausible pollutant linkages together form a Conceptual Site Model.

11.2.2 This conceptual site model has been undertaken with due regard to guidance provided in BS10175:2011. The risks posed by the each pollutant linkages identified are assessed qualitatively, in general accordance with guidance published in CIRIA C552<sup>(5)</sup>. The risk posed is a combination of the probability of the pollutant linkage existing, and the severity of potential harm if it did. If an unacceptable level of risk is identified, this must be mitigated or remediated (breaking of the pollutant linkage) before the development can be allowed to proceed.

11.2.3 This assessment has specifically been written to consider the proposed development only.

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5 CIRIA, 2001. CIRIA 552 - Contaminated land risk assessment. A guide to good practice.

### **11.3 Contaminant sources**

11.3.1 Based upon the review of desktop study information, the most likely sources of ground contamination are:

- Natural geology (on-site) – radon gas.

### **11.4 Pathways**

11.4.1 Based on our understanding of the environmental setting of this site, the proposed development and the contaminants that may be present beneath the site, the following pathways are possible:

- Gas migration and intrusion into confined spaces.

### **11.5 Receptors**

11.5.1 Potential receptors/targets at the site and in the area in which the site is located include:

- Future site users.

**11.6 Initial Conceptual Site Model Matrix**

11.6.1 All of the potential pollutant linkages, and the assessed risk, are presented and discussed in the matrix below.

Potential Source	Contaminants of Concern	Potential Pathway	Sensitive Receptor	Probability	Consequence	Risk	Comment
Natural geology (on-site)	Radon gas	Gas migration and intrusion into confined spaces. Inhalation	Future site users	High	Medium	High	The site is located within a radon affected area and Full radon protection measures are recommended for all new buildings by the Building Research Establishment. Although the risk is high, it can be simply mitigated through design.

## **12. CONCLUSIONS AND RECOMMENDATIONS**

### **12.1 Conclusions**

- 12.1.1 The Preliminary Risk Assessment has not identified any potential anthropogenic sources of contamination that are likely to present a risk to this site.
- 12.1.2 The site is in a Radon affected area and therefore appropriate protections will need to be incorporated into the proposed building design.
- 12.1.3 This desk study has not identified any other plausible pollutant linkages that require further investigation or management.

### **12.2 Recommendations**

- 12.2.1 Full Radon Protection Measures should be installed as part of the proposed development. Guidance for this can be found in the BR211<sup>(6)</sup>. The installation of radon protection measures is a requirement that will be overseen by the Building Control Department, or a Building Control Consultant.
- 12.2.2 A Discovery Strategy should be in place during the construction phase. Should any potential contamination be encountered during the ground works all work in the affected area should be halted until advice is sought from a contaminated land specialist.

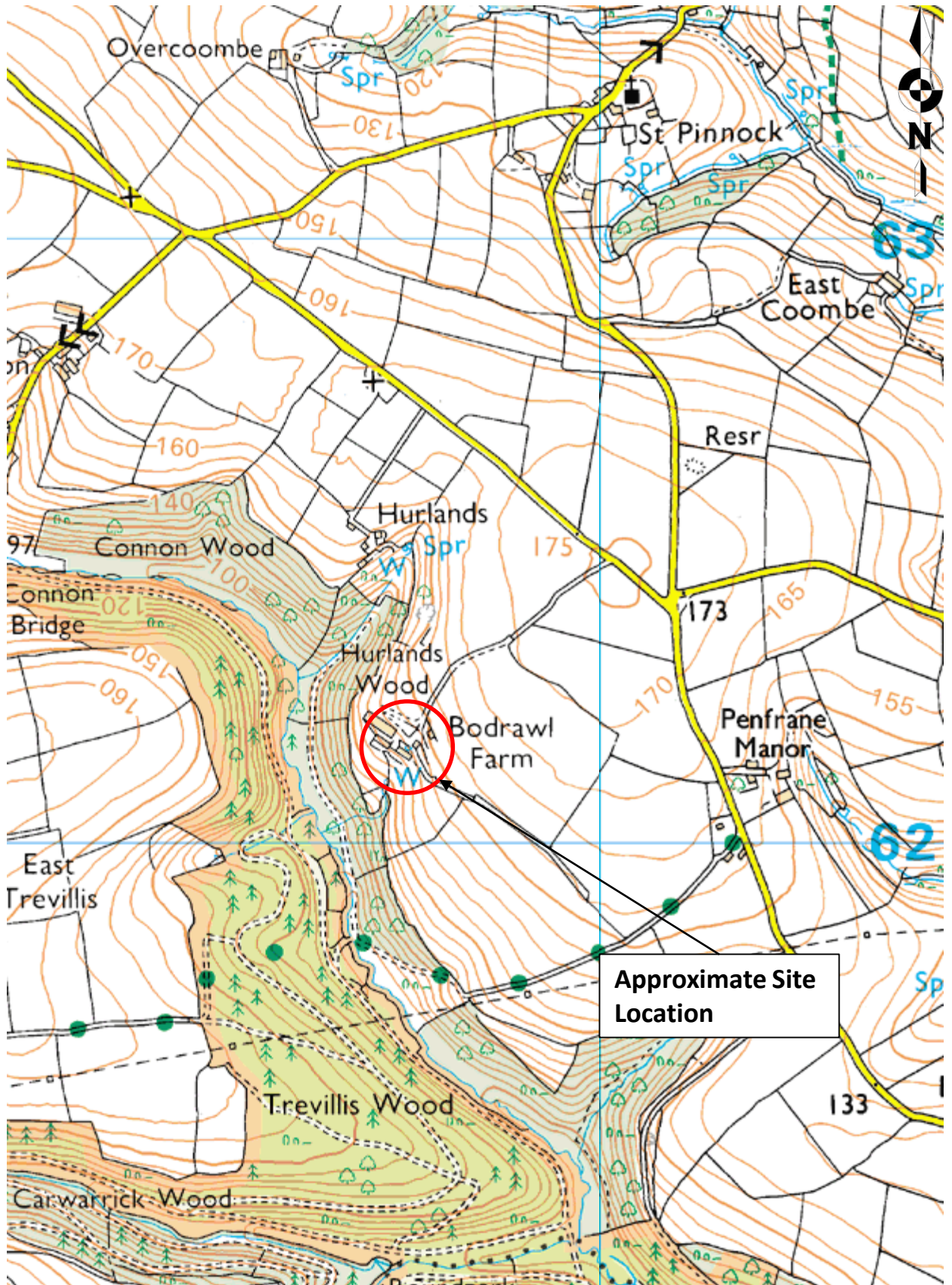
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6 Building Research Establishment, 2015. BR211. Radon Protection Measures for New Buildings

### 13. CONDITIONS

- *Unless otherwise expressly stated, nothing in this report shall create or confer any rights or other benefits pursuant to the Contracts (Rights of Third Parties) Act 1999 in favour of any person other than the person commissioning this report.*
- *This report is concerned only with the property, as defined in Section 1. It must not be used in connection with nearby properties*
- *This report has gathered Information from a number of third party sources. While every effort is made to ensure the accuracy of this information and data, we do not accept any liability for inaccuracies in it.*
- *This report is not an asbestos inspection that may fall within the control of Control of Asbestos Regulations 2012.*





**Figure 1: Site Location Plan**

**Project: Site Adjacent to Bodrawl Bungalow, St. Pinnock**

June 2021

1:25,000

Treen Farm  
 Perranwell  
 Goonhavern  
 Truro  
 Cornwall  
 TR4 9PD  
 07734215823  
 phil@cclsltd.com

**CCLS**

Cornwall Contaminated Land Services Ltd







Looking South-east at front of barn



Ground floor interior



First floor interior



First floor interior



Looking North-west from rear of barn



**Appendix A**  
Groundsure Enviro & Geo Insight Report

Barn Adjacent to BODRAWL BUNGALOW, ROAD FROM JUNCTION WEST OF PENHALE TO GELLIS RISE, ST KEYNE, PL14 4QT

## Order Details

**Date:** 04/06/2021  
**Your ref:** 2021\_103  
**Our Ref:** GS-7925222  
**Client:** Cornwall Contaminated Land Services

## Site Details

**Location:** 219707 062153  
**Area:** 0.05 ha  
**Authority:** [Cornwall Council \(Unitary\)](#)



**Summary of findings**

p. 2

**Aerial image**

p. 8

**OS MasterMap site plan**

p.13

[groundsure.com/insightuserguide](https://groundsure.com/insightuserguide)

Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

08444 159 000

## Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
<b>14</b>	<b>1.1</b>	<b><u>Historical industrial land uses</u></b>	0	0	2	0	-
15	1.2	Historical tanks	0	0	0	0	-
15	1.3	Historical energy features	0	0	0	0	-
15	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	0	0	-
16	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
<b>17</b>	<b>2.1</b>	<b><u>Historical industrial land uses</u></b>	0	0	3	0	-
18	2.2	Historical tanks	0	0	0	0	-
18	2.3	Historical energy features	0	0	0	0	-
18	2.4	Historical petrol stations	0	0	0	0	-
18	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
19	3.1	Active or recent landfill	0	0	0	0	-
19	3.2	Historical landfill (BGS records)	0	0	0	0	-
20	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
20	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
20	3.5	Historical waste sites	0	0	0	0	-
20	3.6	Licensed waste sites	0	0	0	0	-
<b>20</b>	<b>3.7</b>	<b><u>Waste exemptions</u></b>	0	0	0	9	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
22	4.1	Recent industrial land uses	0	0	0	-	-
22	4.2	Current or recent petrol stations	0	0	0	0	-
22	4.3	Electricity cables	0	0	0	0	-
22	4.4	Gas pipelines	0	0	0	0	-
22	4.5	Sites determined as Contaminated Land	0	0	0	0	-



23	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-	
23	4.7	Regulated explosive sites	0	0	0	0	-	
23	4.8	Hazardous substance storage/usage	0	0	0	0	-	
23	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-	
23	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-	
24	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-	
24	4.12	Radioactive Substance Authorisations	0	0	0	0	-	
24	4.13	Licensed Discharges to controlled waters	0	0	0	0	-	
24	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-	
24	4.15	Pollutant release to public sewer	0	0	0	0	-	
25	4.16	List 1 Dangerous Substances	0	0	0	0	-	
25	4.17	List 2 Dangerous Substances	0	0	0	0	-	
25	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-	
25	4.19	Pollution inventory substances	0	0	0	0	-	
25	4.20	Pollution inventory waste transfers	0	0	0	0	-	
26	4.21	Pollution inventory radioactive waste	0	0	0	0	-	
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m	
27	5.1	Superficial aquifer	None (within 500m)					
<b>28</b>	<b>5.2</b>	<b><u>Bedrock aquifer</u></b>	Identified (within 500m)					
<b>30</b>	<b>5.3</b>	<b><u>Groundwater vulnerability</u></b>	Identified (within 50m)					
31	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)					
31	5.5	Groundwater vulnerability- local information	None (within 0m)					
<b>32</b>	<b>5.6</b>	<b><u>Groundwater abstractions</u></b>	0	0	0	0	23	
<b>38</b>	<b>5.7</b>	<b><u>Surface water abstractions</u></b>	0	0	0	0	5	
<b>39</b>	<b>5.8</b>	<b><u>Potable abstractions</u></b>	0	0	0	0	3	
40	5.9	Source Protection Zones	0	0	0	0	-	
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-	
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m	
<b>42</b>	<b>6.1</b>	<b><u>Water Network (OS MasterMap)</u></b>	0	1	6	-	-	



Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
<b>43</b>	<b>6.2</b>	<b><u>Surface water features</u></b>	0	1	3	-	-
<b>43</b>	<b>6.3</b>	<b><u>WFD Surface water body catchments</u></b>	1	-	-	-	-
<b>44</b>	<b>6.4</b>	<b><u>WFD Surface water bodies</u></b>	0	0	1	-	-
<b>44</b>	<b>6.5</b>	<b><u>WFD Groundwater bodies</u></b>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
45	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
46	7.5	Flood Storage Areas	0	0	0	-	-
47	7.6	Flood Zone 2	None (within 50m)				
47	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
48	8.1	Surface water flooding	Negligible (within 50m)				
Page	Section	Groundwater flooding					
<b>49</b>	<b>9.1</b>	<b><u>Groundwater flooding</u></b>	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
50	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
51	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
51	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
51	10.4	Special Protection Areas (SPA)	0	0	0	0	0
51	10.5	National Nature Reserves (NNR)	0	0	0	0	0
52	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
<b>52</b>	<b>10.7</b>	<b><u>Designated Ancient Woodland</u></b>	0	0	2	0	6
52	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
53	10.10	Marine Conservation Zones	0	0	0	0	0
53	10.11	Green Belt	0	0	0	0	0
53	10.12	Proposed Ramsar sites	0	0	0	0	0



53	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
54	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
54	10.15	Nitrate Sensitive Areas	0	0	0	0	0
54	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
<b>55</b>	<b>10.17</b>	<b><u>SSSI Impact Risk Zones</u></b>	<b>2</b>	-	-	-	-
56	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
57	11.1	World Heritage Sites	0	0	0	-	-
57	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
57	11.3	National Parks	0	0	0	-	-
57	11.4	Listed Buildings	0	0	0	-	-
58	11.5	Conservation Areas	0	0	0	-	-
58	11.6	Scheduled Ancient Monuments	0	0	0	-	-
58	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
<b>59</b>	<b>12.1</b>	<b><u>Agricultural Land Classification</u></b>	Grade 4 (within 250m)				
60	12.2	Open Access Land	0	0	0	-	-
60	12.3	Tree Felling Licences	0	0	0	-	-
60	12.4	Environmental Stewardship Schemes	0	0	0	-	-
<b>61</b>	<b>12.5</b>	<b><u>Countryside Stewardship Schemes</u></b>	0	1	1	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
<b>62</b>	<b>13.1</b>	<b><u>Priority Habitat Inventory</u></b>	0	0	10	-	-
63	13.2	Habitat Networks	0	0	0	-	-
63	13.3	Open Mosaic Habitat	0	0	0	-	-
63	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
<b>64</b>	<b>14.1</b>	<b><u>10k Availability</u></b>	Identified (within 500m)				
65	14.2	Artificial and made ground (10k)	0	0	0	0	-
66	14.3	Superficial geology (10k)	0	0	0	0	-

66	14.4	Landslip (10k)	0	0	0	0	-
67	14.5	Bedrock geology (10k)	0	0	0	0	-
67	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
<b>68</b>	<b>15.1</b>	<b><u>50k Availability</u></b>	Identified (within 500m)				
69	15.2	Artificial and made ground (50k)	0	0	0	0	-
69	15.3	Artificial ground permeability (50k)	0	0	-	-	-
70	15.4	Superficial geology (50k)	0	0	0	0	-
70	15.5	Superficial permeability (50k)	None (within 50m)				
70	15.6	Landslip (50k)	0	0	0	0	-
70	15.7	Landslip permeability (50k)	None (within 50m)				
<b>71</b>	<b>15.8</b>	<b><u>Bedrock geology (50k)</u></b>	1	0	0	1	-
<b>72</b>	<b>15.9</b>	<b><u>Bedrock permeability (50k)</u></b>	Identified (within 50m)				
72	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
73	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
<b>74</b>	<b>17.1</b>	<b><u>Shrink swell clays</u></b>	Negligible (within 50m)				
<b>75</b>	<b>17.2</b>	<b><u>Running sands</u></b>	Negligible (within 50m)				
<b>76</b>	<b>17.3</b>	<b><u>Compressible deposits</u></b>	Negligible (within 50m)				
<b>77</b>	<b>17.4</b>	<b><u>Collapsible deposits</u></b>	Very low (within 50m)				
<b>78</b>	<b>17.5</b>	<b><u>Landslides</u></b>	Very low (within 50m)				
<b>79</b>	<b>17.6</b>	<b><u>Ground dissolution of soluble rocks</u></b>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
80	18.1	Natural cavities	0	0	0	0	-
<b>81</b>	<b>18.2</b>	<b><u>BritPits</u></b>	0	0	1	0	-
<b>81</b>	<b>18.3</b>	<b><u>Surface ground workings</u></b>	0	0	3	-	-
81	18.4	Underground workings	0	0	0	0	0
82	18.5	Historical Mineral Planning Areas	0	0	0	0	-



<b>82</b>	<b>18.6</b>	<b><u>Non-coal mining</u></b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>
82	18.7	Mining cavities		0	0	0	0	0
83	18.8	JPB mining areas	None (within 0m)					
83	18.9	Coal mining	None (within 0m)					
83	18.10	Brine areas	None (within 0m)					
83	18.11	Gypsum areas	None (within 0m)					
83	18.12	Tin mining	None (within 0m)					
84	18.13	Clay mining	None (within 0m)					
<b>Page</b>	<b>Section</b>	<b>Radon</b>						
<b>85</b>	<b>19.1</b>	<b><u>Radon</u></b>	<b>Between 10% and 30% (within 0m)</b>					
<b>Page</b>	<b>Section</b>	<b>Soil chemistry</b>	<b>On site</b>	<b>0-50m</b>	<b>50-250m</b>	<b>250-500m</b>	<b>500-2000m</b>	
<b>86</b>	<b>20.1</b>	<b><u>BGS Estimated Background Soil Chemistry</u></b>	<b>1</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	
86	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-	
86	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-	
<b>Page</b>	<b>Section</b>	<b>Railway infrastructure and projects</b>	<b>On site</b>	<b>0-50m</b>	<b>50-250m</b>	<b>250-500m</b>	<b>500-2000m</b>	
87	21.1	Underground railways (London)	0	0	0	-	-	
87	21.2	Underground railways (Non-London)	0	0	0	-	-	
87	21.3	Railway tunnels	0	0	0	-	-	
87	21.4	Historical railway and tunnel features	0	0	0	-	-	
87	21.5	Royal Mail tunnels	0	0	0	-	-	
88	21.6	Historical railways	0	0	0	-	-	
88	21.7	Railways	0	0	0	-	-	
88	21.8	Crossrail 1	0	0	0	0	-	
88	21.9	Crossrail 2	0	0	0	0	-	
88	21.10	HS2	0	0	0	0	-	

## Recent aerial photograph



Capture Date: 22/06/2019

Site Area: 0.05ha



## Recent site history - 2016 aerial photograph



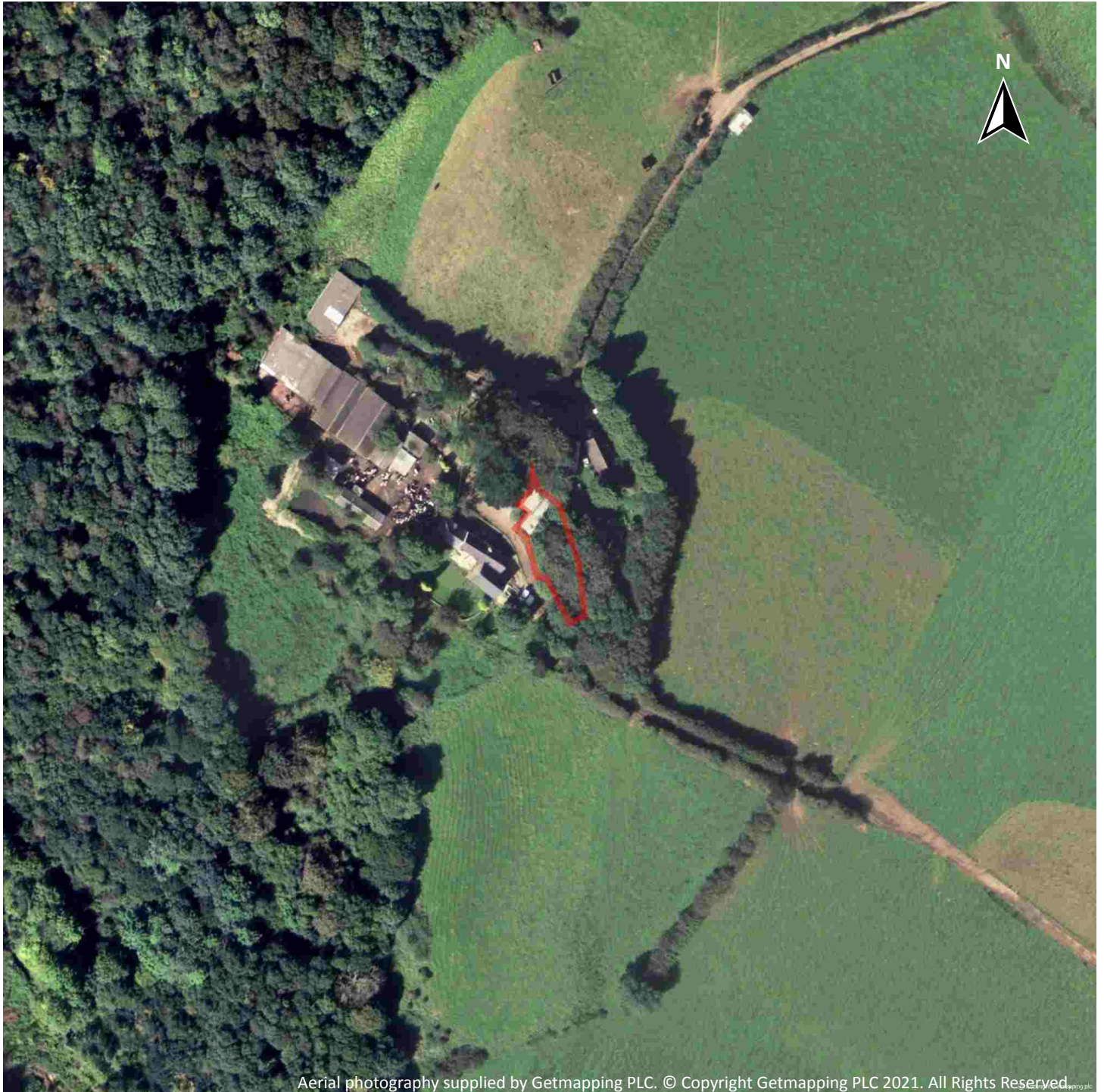
Capture Date: 23/08/2016

Site Area: 0.05ha





## Recent site history - 2009 aerial photograph



Capture Date: 11/09/2009

Site Area: 0.05ha





## Recent site history - 2005 aerial photograph



Capture Date: 08/06/2005

Site Area: 0.05ha





## Recent site history - 1999 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2021. All Rights Reserved.

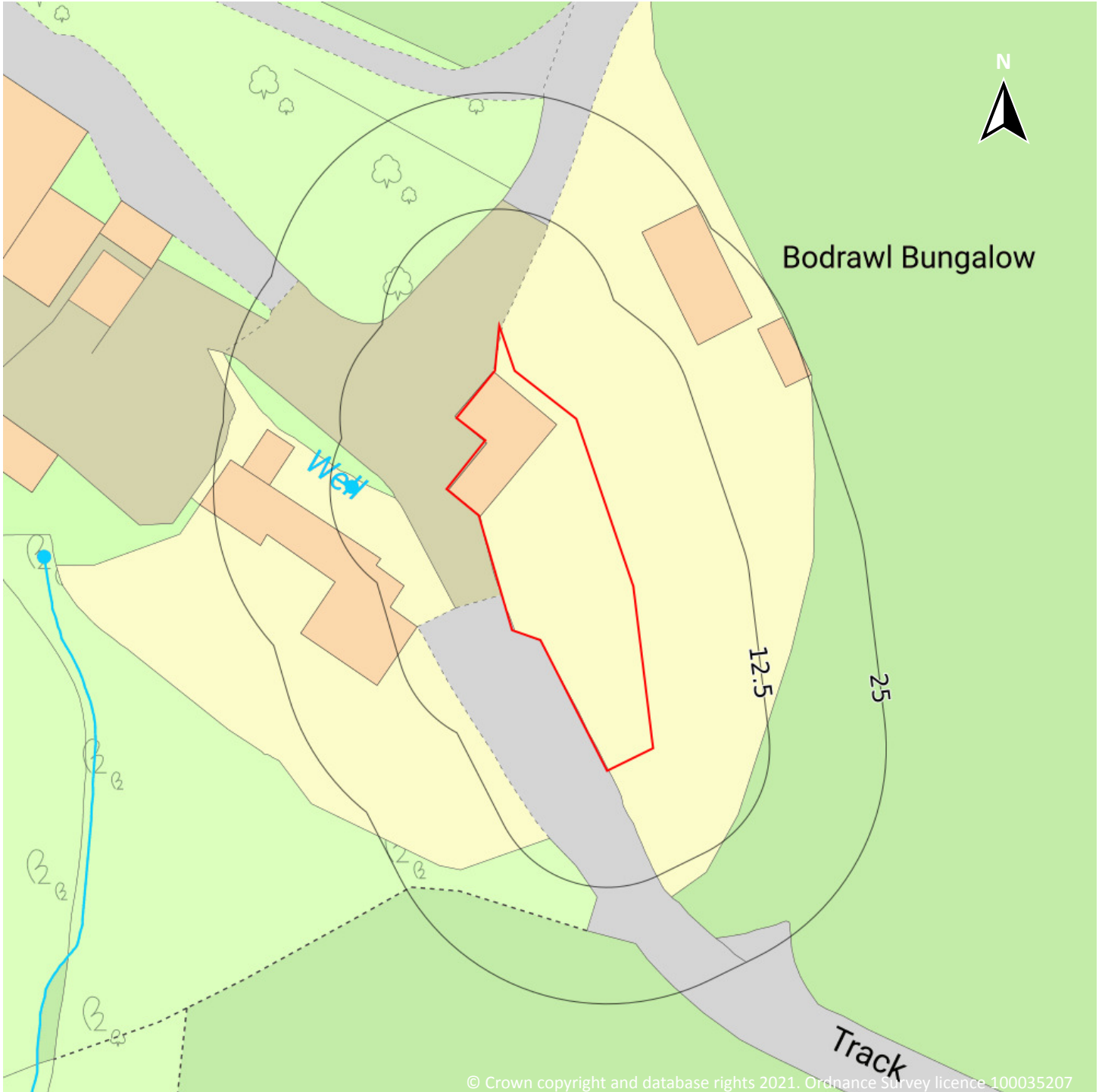
Capture Date: 24/07/1999

Site Area: 0.05ha





## OS MasterMap site plan




Site Area: 0.05ha

# 1 Past land use



— Site Outline

Search buffers in metres (m)

 Historical industrial land uses

## 1.1 Historical industrial land uses

**Records within 500m** **2**

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

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	187m N	Unspecified Old Quarry	1905 - 1958	412918

ID	Location	Land use	Dates present	Group ID
A	188m N	Unspecified Quarry	1881	388525

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

### Records within 500m

0

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

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.3 Historical energy features

### Records within 500m

0

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

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.4 Historical petrol stations

### Records within 500m

0

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

*This data is sourced from Ordnance Survey / Groundsure.*



## 1.5 Historical garages

Records within 500m

0

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

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.6 Historical military land

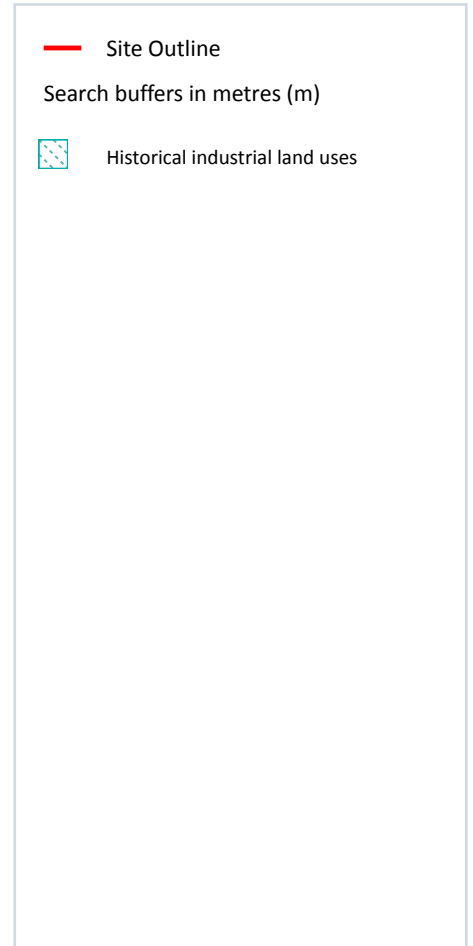
Records within 500m

0

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

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

## 2 Past land use - un-grouped



### 2.1 Historical industrial land uses

Records within 500m

3

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

Features are displayed on the Past land use - un-grouped map on **page 17**

ID	Location	Land Use	Date	Group ID
A	187m N	Unspecified Old Quarry	1958	412918
A	188m N	Unspecified Quarry	1881	388525
A	188m N	Unspecified Old Quarry	1905	412918

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.2 Historical tanks

**Records within 500m**

**0**

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

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

**Records within 500m**

**0**

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

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.4 Historical petrol stations

**Records within 500m**

**0**

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

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.5 Historical garages

**Records within 500m**

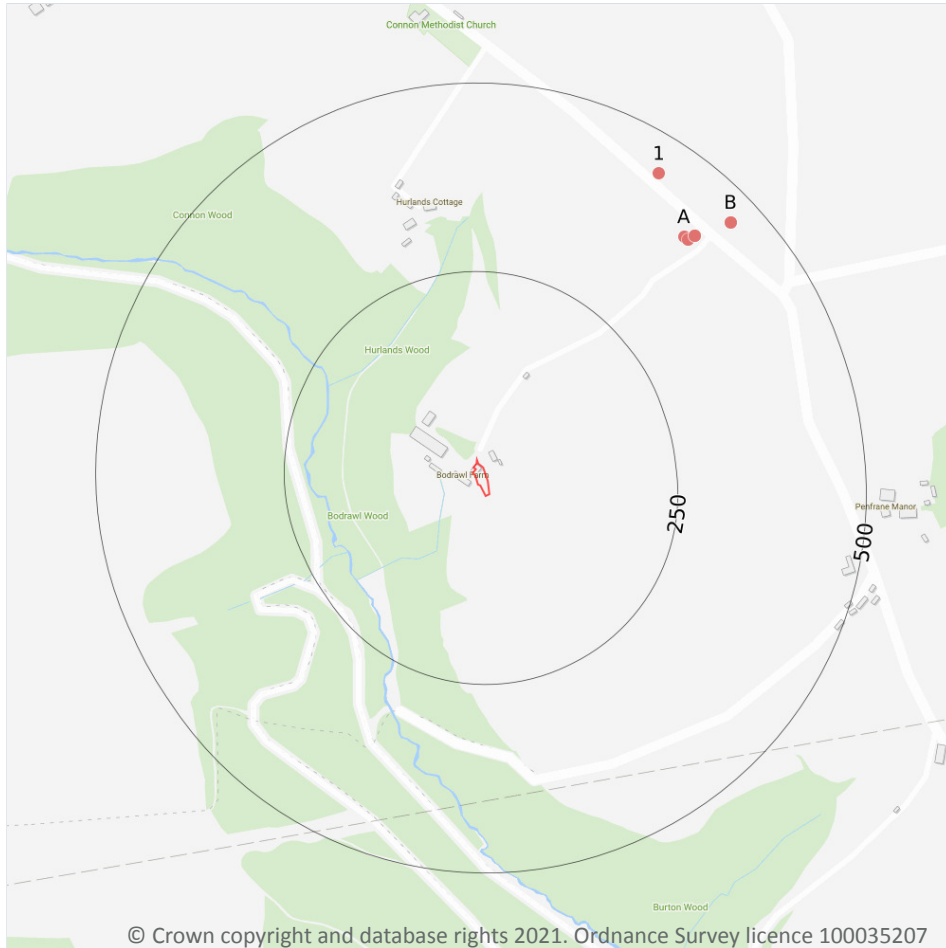
**0**

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

*This data is sourced from Ordnance Survey / Groundsure.*



### 3 Waste and landfill



#### 3.1 Active or recent landfill

Records within 500m

0

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

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

#### 3.2 Historical landfill (BGS records)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*



### 3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

### 3.4 Historical landfill (EA/NRW records)

Records within 500m

0

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

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

### 3.5 Historical waste sites

Records within 500m

0

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

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

### 3.6 Licensed waste sites

Records within 500m

0

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

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

### 3.7 Waste exemptions

Records within 500m

9

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

Features are displayed on the Waste and landfill map on **page 19**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	403m NE	-	WEX222717	Storing waste exemption	On a farm	Storage of sludge



ID	Location	Site	Reference	Category	Sub-Category	Description
A	405m NE	BABBINGTON, BRADDOCK, LOSTWITHIEL, PL22 0RJ	WEX144512	Storing waste exemption	On a farm	Storage of sludge
A	405m NE	BABBINGTON, BRADDOCK, LOSTWITHIEL, PL22 0RJ	WEX145816	Storing waste exemption	On a Farm	Storage of sludge
A	413m NE	BABBINGTON, BRADDOCK, LOSTWITHIEL, PL22 0RJ	WEX142429	Storing waste exemption	On a farm	Storage of sludge
A	413m NE	BABBINGTON, BRADDOCK, LOSTWITHIEL, PL22 0RJ	WEX036982	Storing waste exemption	On a farm	Storage of sludge
A	413m NE	BABBINGTON, BRADDOCK, LOSTWITHIEL, PL22 0RJ	WEX016487	Storing waste exemption	On a farm	Storage of sludge
1	449m NE	BABBINGTON, BRADDOCK, LOSTWITHIEL, PL22 0RJ	WEX068632	Storing waste exemption	On a farm	Storage of sludge
B	460m NE	BABBINGTON, BRADDOCK, LOSTWITHIEL, PL22 0RJ	WEX068434	Storing waste exemption	On a farm	Storage of sludge
B	460m NE	BABBINGTON, BRADDOCK, LOSTWITHIEL, PL22 0RJ	WEX071137	Storing waste exemption	On a farm	Storage of sludge

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



## 4 Current industrial land use

### 4.1 Recent industrial land uses

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

Current potentially contaminative industrial sites.

*This data is sourced from Ordnance Survey.*

### 4.2 Current or recent petrol stations

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

Open, closed, under development and obsolete petrol stations.

*This data is sourced from Experian.*

### 4.3 Electricity cables

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

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

### 4.4 Gas pipelines

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

High pressure underground gas transmission pipelines.

*This data is sourced from National Grid.*

### 4.5 Sites determined as Contaminated Land

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

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

*This data is sourced from Local Authority records.*



## 4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

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

*This data is sourced from the Health and Safety Executive.*

## 4.7 Regulated explosive sites

Records within 500m

0

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

*This data is sourced from the Health and Safety Executive.*

## 4.8 Hazardous substance storage/usage

Records within 500m

0

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

*This data is sourced from Local Authority records.*

## 4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

## 4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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



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

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

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

*This data is sourced from Local Authority records.*

#### 4.12 Radioactive Substance Authorisations

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

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

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

#### 4.13 Licensed Discharges to controlled waters

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

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

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

#### 4.14 Pollutant release to surface waters (Red List)

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

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

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

#### 4.15 Pollutant release to public sewer

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

Discharges of Special Category Effluents to the public sewer.

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

#### 4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

#### 4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

#### 4.18 Pollution Incidents (EA/NRW)

Records within 500m

0

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

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

#### 4.19 Pollution inventory substances

Records within 500m

0

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

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

#### 4.20 Pollution inventory waste transfers

Records within 500m

0

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

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



## 4.21 Pollution inventory radioactive waste

Records within 500m

0

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

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

## 5 Hydrogeology - Superficial aquifer

### 5.1 Superficial aquifer

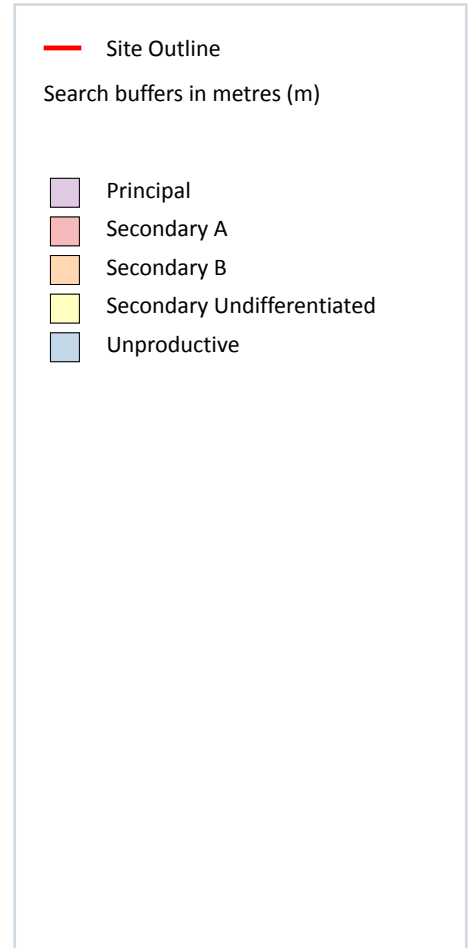
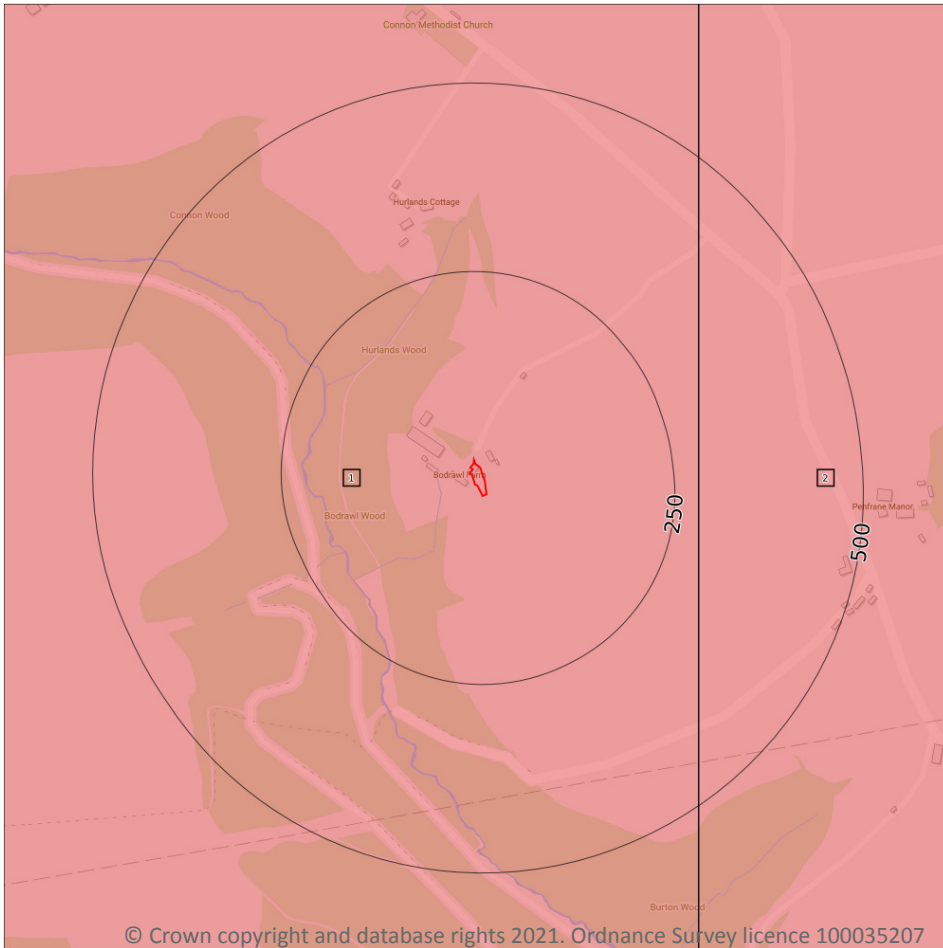
Records within 500m

0

Aquifer status of groundwater held within superficial geology.

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

## Bedrock aquifer



### 5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 28**

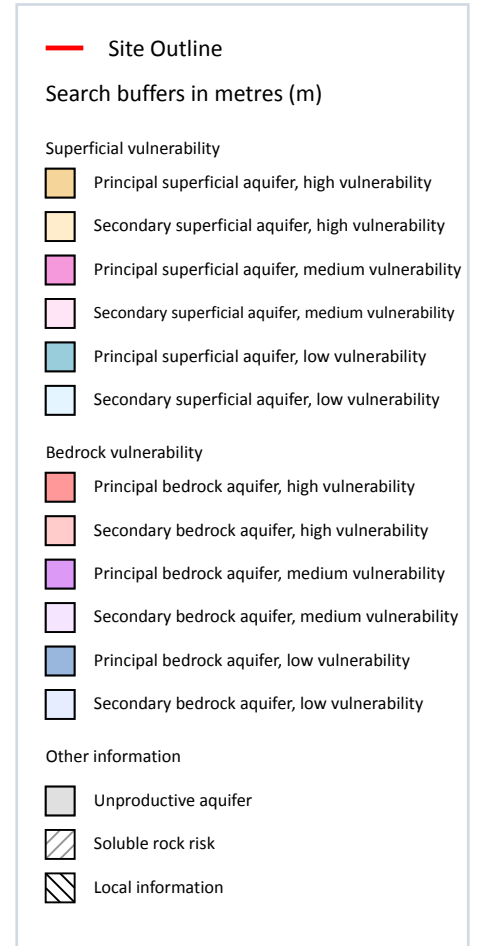
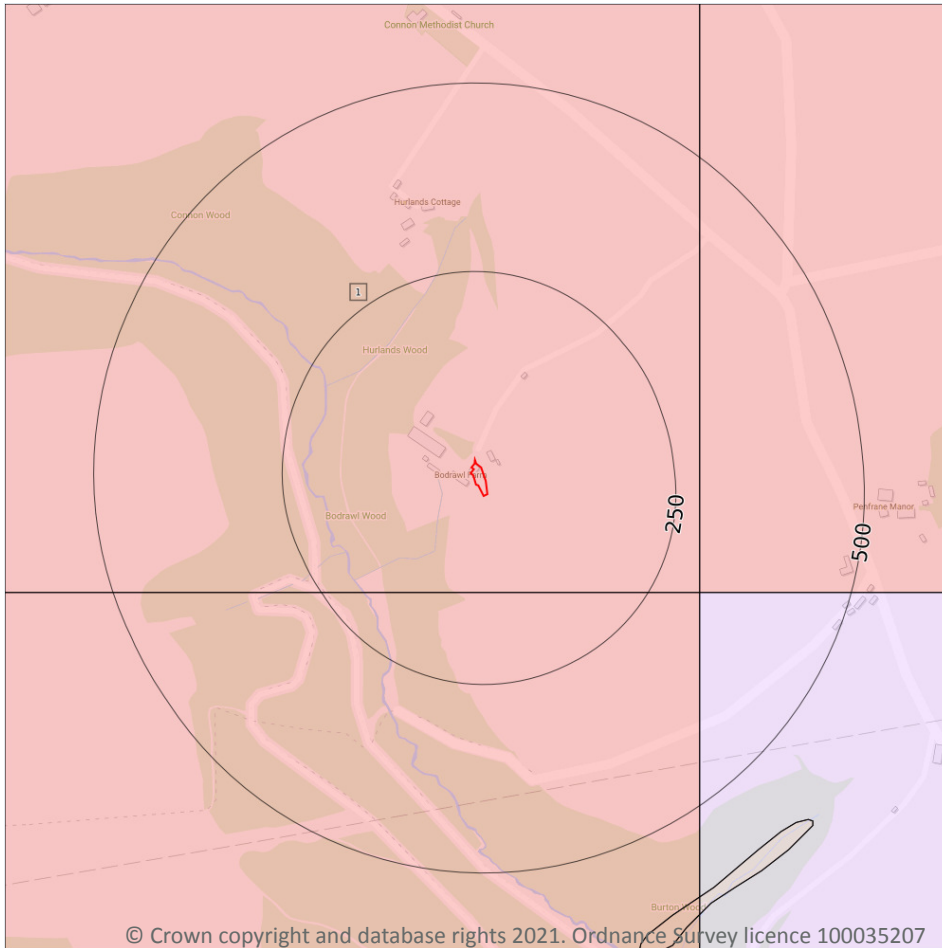
ID	Location	Designation	Description
1	On site	Secondary A	<b>Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers</b>
2	282m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers



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



## Groundwater vulnerability



### 5.3 Groundwater vulnerability

Records within 50m

1

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

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

Features are displayed on the Groundwater vulnerability map on **page 30**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	<b>Summary Classification:</b> Secondary bedrock aquifer - High Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, No Superficial Aquifer	<b>Leaching class:</b> Intermediate <b>Infiltration value:</b> 40- 70% <b>Dilution value:</b> >550mm/year	<b>Vulnerability:</b> - <b>Aquifer type:</b> - <b>Thickness:</b> <3m <b>Patchiness value:</b> <90% <b>Recharge potential:</b> No Data	<b>Vulnerability:</b> High <b>Aquifer type:</b> Secondary <b>Flow mechanism:</b> Well connected fractures

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

## 5.4 Groundwater vulnerability- soluble rock risk

<b>Records on site</b>	<b>0</b>
------------------------	----------

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

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

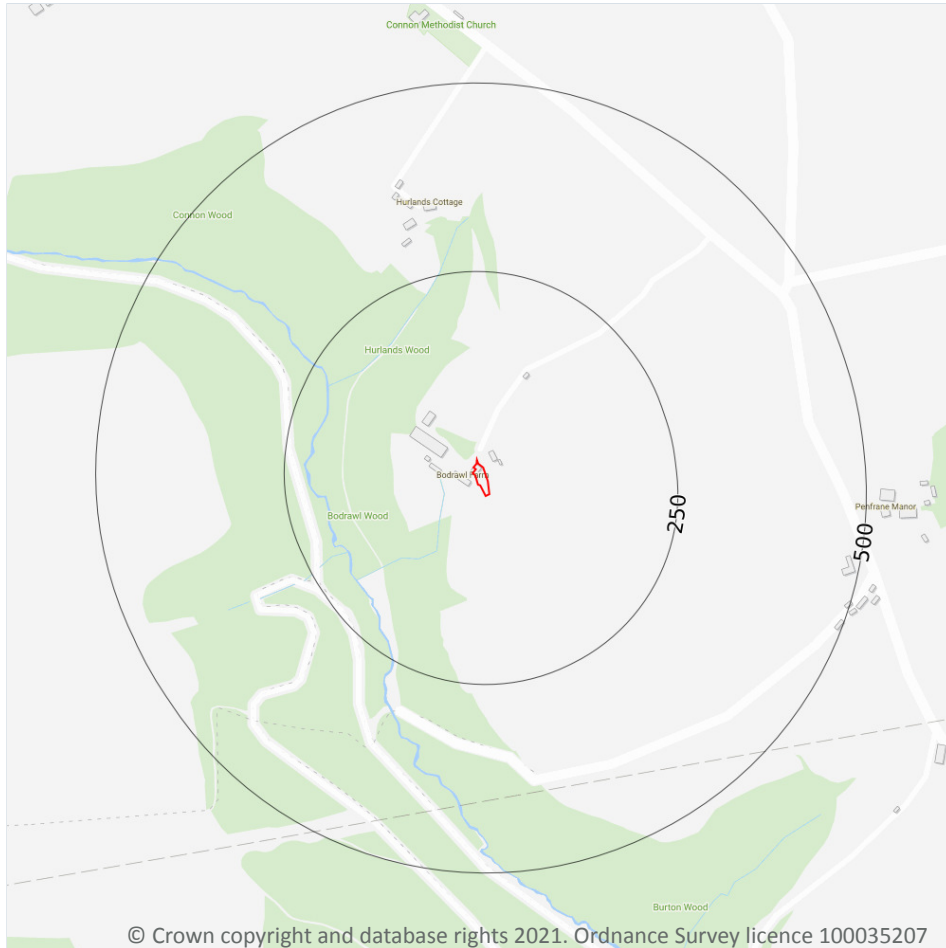
## 5.5 Groundwater vulnerability- local information

<b>Records on site</b>	<b>0</b>
------------------------	----------

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

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

## Abstractions and Source Protection Zones



### 5.6 Groundwater abstractions

Records within 2000m

23

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 32**

ID	Location	Details	
-	1139m E	Status: Historical Licence No: 15/48/173/G/062 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - Fresh Point: SPRING CATCHPIT AT BOTURNELL FARM, ST PINNOCK Data Type: Point Name: Jewell Easting: 220830 Northing: 61880	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 10/11/2003 Expiry Date: - Issue No: 101 Version Start Date: 10/11/2003 Version End Date: -
-	1139m E	Status: Historical Licence No: 15/48/173/G/062 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: SPRING CATCHPIT AT BOTURNELL FARM, ST PINNOCK Data Type: Point Name: Jewell Easting: 220830 Northing: 61880	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 10/11/2003 Expiry Date: - Issue No: 101 Version Start Date: 10/11/2003 Version End Date: -
-	1139m E	Status: Historical Licence No: 15/48/173/G/062 Details: Process water Direct Source: Ground Water - Fresh Point: SPRING CATCHPIT AT BOTURNELL FARM, ST PINNOCK Data Type: Point Name: Jewell Easting: 220830 Northing: 61880	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 10/11/2003 Expiry Date: - Issue No: 101 Version Start Date: 10/11/2003 Version End Date: -
-	1213m NE	Status: Historical Licence No: 15/48/173/G/048 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "EAST TREVELMOND FARM, DOBWALLS - SPRING A" Data Type: Point Name: Pendray Farms Easting: 220800 Northing: 62700	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 19/07/1984 Expiry Date: - Issue No: 100 Version Start Date: 02/04/1992 Version End Date: -

ID	Location	Details	
-	1213m NE	Status: Historical Licence No: 15/48/173/G/048 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: EAST TRELVELMOND FARM, DOBWALLS - SPRING A Data Type: Point Name: Pendray Farms Easting: 220800 Northing: 62700	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 19/07/1984 Expiry Date: - Issue No: 100 Version Start Date: 02/04/1992 Version End Date: -
-	1405m W	Status: Historical Licence No: 15/48/173/G/051 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: WEST TREVILLIS - SPRING Data Type: Point Name: Cornwall County Council Easting: 218300 Northing: 62000	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 14/04/1988 Expiry Date: - Issue No: 100 Version Start Date: 30/09/1991 Version End Date: -
-	1405m W	Status: Historical Licence No: 15/48/173/G/051 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: WEST TREVILLIS - SPRING Data Type: Point Name: Cornwall County Council Easting: 218300 Northing: 62000	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 14/04/1988 Expiry Date: - Issue No: 100 Version Start Date: 30/09/1991 Version End Date: -
-	1405m W	Status: Historical Licence No: 15/48/173/G/051 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - Fresh Point: WEST TREVILLIS - SPRING Data Type: Point Name: Cornwall County Council Easting: 218300 Northing: 62000	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 14/04/1988 Expiry Date: - Issue No: 100 Version Start Date: 30/09/1991 Version End Date: -

ID	Location	Details	
-	1557m SW	Status: Historical Licence No: 15/48/173/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: "WOODLAY FARM, LANREATH - TAPPED SPRING" Data Type: Point Name: Hawke Easting: 218900 Northing: 60800	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 08/01/1980 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1980 Version End Date: -
-	1557m SW	Status: Historical Licence No: 15/48/173/G/029 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "WOODLAY FARM, LANREATH - TAPPED SPRING" Data Type: Point Name: Hawke Easting: 218900 Northing: 60800	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 08/01/1980 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1980 Version End Date: -
-	1557m SW	Status: Historical Licence No: 15/48/173/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: WOODLAY FARM, LANREATH - TAPPED SPRING Data Type: Point Name: Hawke Easting: 218900 Northing: 60800	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 08/01/1980 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1980 Version End Date: -
-	1557m SW	Status: Historical Licence No: 15/48/173/G/029 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: WOODLAY FARM, LANREATH - TAPPED SPRING Data Type: Point Name: Hawke Easting: 218900 Northing: 60800	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 08/01/1980 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1980 Version End Date: -

ID	Location	Details	
-	1798m SW	Status: Historical Licence No: 15/48/173/G/043 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "WILTON FARM, ST. PINNOCK - BOREHOLE A" Data Type: Point Name: Tamblyn Bros Easting: 218400 Northing: 60900	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 21/08/1978 Expiry Date: - Issue No: 100 Version Start Date: 10/03/1993 Version End Date: -
-	1798m SW	Status: Historical Licence No: 15/48/173/G/043 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: WILTON FARM, ST. PINNOCK - BOREHOLE A Data Type: Point Name: Bolitho Easting: 218400 Northing: 60900	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 21/08/1978 Expiry Date: - Issue No: 101 Version Start Date: 20/12/2002 Version End Date: -
-	1880m W	Status: Historical Licence No: 15/48/173/G/063 Details: Process Water Direct Source: Ground Water - Fresh Point: BOREHOLE AT CONNON BRIDGE LANDFILL Data Type: Point Name: SITA Ltd Easting: 217820 Northing: 62030	Annual Volume (m <sup>3</sup> ): 16060 Max Daily Volume (m <sup>3</sup> ): 44 Original Application No: - Original Start Date: 22/05/2006 Expiry Date: 31/03/2016 Issue No: 102 Version Start Date: 01/04/2008 Version End Date: -
-	1906m NE	Status: Historical Licence No: 15/48/173/G/011 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "CADUSCOTT FARM, DOBWALLS - BOREHOLE" Data Type: Point Name: Pendray Farms Easting: 220700 Northing: 63800	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 31/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/03/2000 Version End Date: -
-	1906m NE	Status: Historical Licence No: 15/48/173/G/011 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: CADUSCOTT FARM, DOBWALLS - BOREHOLE Data Type: Point Name: Pendray Farms Easting: 220700 Northing: 63800	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 31/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/03/2000 Version End Date: -





ID	Location	Details	
-	1906m NE	Status: Historical Licence No: 15/48/173/G/047 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - Fresh Point: CADUSCOTT FARM BOREHOLE Data Type: Point Name: Pendray Farms Easting: 220700 Northing: 63800	Annual Volume (m <sup>3</sup> ): 12282 Max Daily Volume (m <sup>3</sup> ): 1032.9 Original Application No: - Original Start Date: 19/07/1984 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2005 Version End Date: -
-	1906m NE	Status: Historical Licence No: 15/48/173/G/047 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: CADUSCOTT FARM BOREHOLE Data Type: Point Name: Pendray Farms Easting: 220700 Northing: 63800	Annual Volume (m <sup>3</sup> ): 12282 Max Daily Volume (m <sup>3</sup> ): 1032.9 Original Application No: - Original Start Date: 19/07/1984 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2005 Version End Date: -
-	1909m SW	Status: Historical Licence No: 15/48/173/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: "WOODLAY FARM, LANREATH - BOREHOLE" Data Type: Point Name: Hawke Easting: 218900 Northing: 60400	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 08/01/1980 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1980 Version End Date: -
-	1909m SW	Status: Historical Licence No: 15/48/173/G/029 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "WOODLAY FARM, LANREATH - BOREHOLE" Data Type: Point Name: Hawke Easting: 218900 Northing: 60400	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 08/01/1980 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1980 Version End Date: -
-	1909m SW	Status: Historical Licence No: 15/48/173/G/029 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: WOODLAY FARM, LANREATH - BOREHOLE Data Type: Point Name: Hawke Easting: 218900 Northing: 60400	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 08/01/1980 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1980 Version End Date: -



ID	Location	Details	
-	1909m SW	Status: Historical Licence No: 15/48/173/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: WOODLAY FARM, LANREATH - BOREHOLE Data Type: Point Name: Hawke Easting: 218900 Northing: 60400	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 08/01/1980 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1980 Version End Date: -

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

## 5.7 Surface water abstractions

<b>Records within 2000m</b>	<b>5</b>
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Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 32**

ID	Location	Details	
-	1163m SE	Status: Active Licence No: 15/48/173/S/013/R01 Details: Lake & Pond Throughflow Direct Source: Surface Water - Fresh Point: CONNON STREAM AT DEERPARK FOREST Data Type: Point Name: Forest Holidays Ltd Easting: 220289 Northing: 61116	Annual Volume (m <sup>3</sup> ): 409,968 Max Daily Volume (m <sup>3</sup> ): 1,123.20 Original Application No: - Original Start Date: 01/04/2016 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/04/2016 Version End Date: -
-	1174m SE	Status: Historical Licence No: 15/48/173/S/013 Details: Lake & Pond Throughflow Direct Source: Surface Water - Fresh Point: "INLAND WATER KNOWN AS CONNON STREAM, DEERPARK FOREST" Data Type: Point Name: Forest Enterprise Easting: 220300 Northing: 61110	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 27/09/2002 Expiry Date: 31/03/2016 Issue No: 100 Version Start Date: 09/05/2003 Version End Date: -

ID	Location	Details	
-	1174m SE	Status: Historical Licence No: 15/48/173/S/013 Details: Lake & Pond Throughflow Direct Source: Surface Water - Fresh Point: INLAND WATER KNOWN AS CONNON STREAM, DEERPARK FOREST Data Type: Point Name: Forest Enterprise Easting: 220300 Northing: 61110	Annual Volume (m <sup>3</sup> ): 409968 Max Daily Volume (m <sup>3</sup> ): 1123.2 Original Application No: - Original Start Date: 27/09/2002 Expiry Date: 31/03/2016 Issue No: 100 Version Start Date: 09/05/2003 Version End Date: -
-	1174m SE	Status: Historical Licence No: 15/48/173/S/013 Details: Lake & Pond Throughflow Direct Source: Surface Water - Fresh Point: CONNON STREAM AT DEERPARK FOREST Data Type: Point Name: Forest Holidays LLP Easting: 220300 Northing: 61110	Annual Volume (m <sup>3</sup> ): 409968 Max Daily Volume (m <sup>3</sup> ): 1123.2 Original Application No: - Original Start Date: 27/09/2002 Expiry Date: 31/03/2016 Issue No: 102 Version Start Date: 16/11/2011 Version End Date: -
-	1900m E	Status: Historical Licence No: 15/48/173/S/008 Details: Spray Irrigation - Direct Direct Source: Surface Water - Fresh Point: CADUSCOTT FARM Data Type: Point Name: Pendray Farms Easting: 221600 Northing: 62400	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 11/01/1984 Expiry Date: - Issue No: 100 Version Start Date: 30/03/1992 Version End Date: -

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

## 5.8 Potable abstractions

### Records within 2000m

**3**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 32**

ID	Location	Details	
-	1139m E	Status: Historical Licence No: 15/48/173/G/062 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - Fresh Point: SPRING CATCHPIT AT BOTURNELL FARM, ST PINNOCK Data Type: Point Name: Jewell Easting: 220830 Northing: 61880	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 10/11/2003 Expiry Date: - Issue No: 101 Version Start Date: 10/11/2003 Version End Date: -
-	1405m W	Status: Historical Licence No: 15/48/173/G/051 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - Fresh Point: WEST TREVILLIS - SPRING Data Type: Point Name: Cornwall County Council Easting: 218300 Northing: 62000	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 14/04/1988 Expiry Date: - Issue No: 100 Version Start Date: 30/09/1991 Version End Date: -
-	1906m NE	Status: Historical Licence No: 15/48/173/G/047 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Ground Water - Fresh Point: CADUSCOTT FARM BOREHOLE Data Type: Point Name: Pendray Farms Easting: 220700 Northing: 63800	Annual Volume (m <sup>3</sup> ): 12282 Max Daily Volume (m <sup>3</sup> ): 1032.9 Original Application No: - Original Start Date: 19/07/1984 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2005 Version End Date: -

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

## 5.9 Source Protection Zones

**Records within 500m**

**0**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

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



## 5.10 Source Protection Zones (confined aquifer)

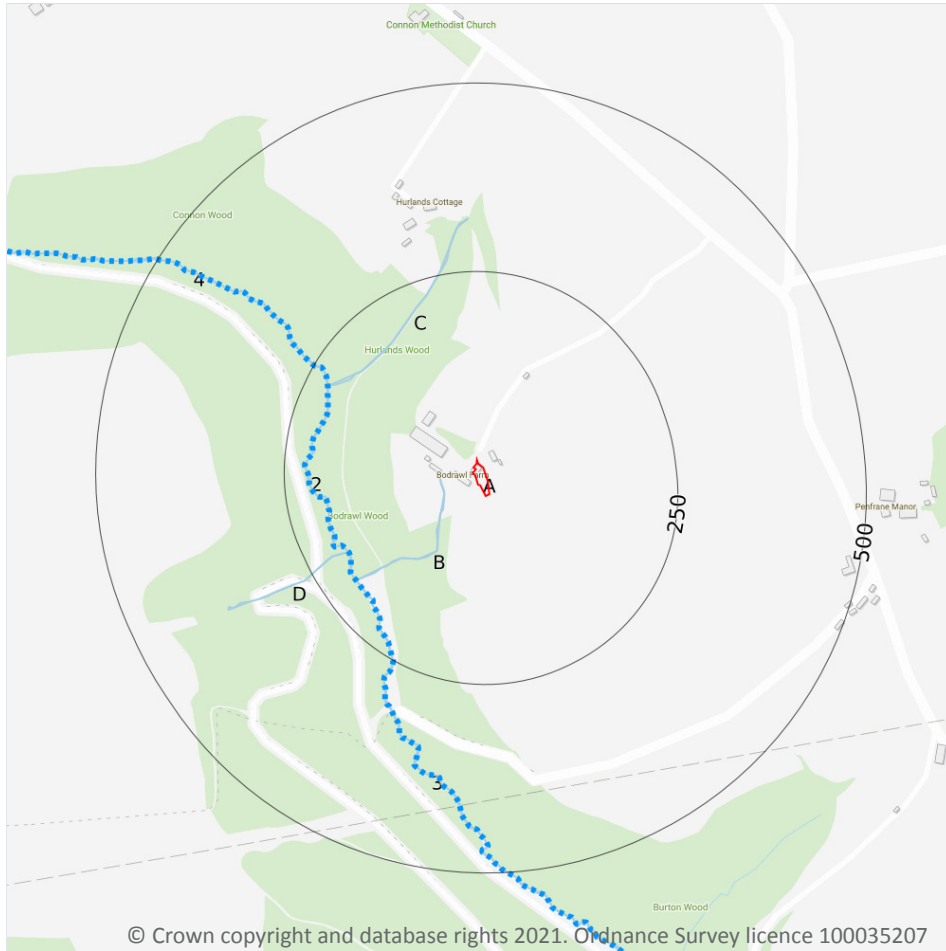
Records within 500m

0

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

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

## 6 Hydrology



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

### 6.1 Water Network (OS MasterMap)

Records within 250m

7

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	43m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
C	189m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
2	193m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	193m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	193m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
3	203m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	221m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

*This data is sourced from the Ordnance Survey.*

## 6.2 Surface water features

**Records within 250m**

**4**

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

Features are displayed on the Hydrology map on **page 42**

*This data is sourced from the Ordnance Survey.*

## 6.3 WFD Surface water body catchments

**Records on site**

**1**

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

Features are displayed on the Hydrology map on **page 42**



ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River WB catchment	West Looe River	GB108048002000	Seaton, Looe and Polperro	North Cornwall, Seaton, Looe and Fowey

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

## 6.4 WFD Surface water bodies

<b>Records identified</b>	<b>1</b>
---------------------------	----------

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
1	193m SW	River	West Looe River	<a href="#">GB108048002000</a>	Poor	Good	Poor	2016

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

## 6.5 WFD Groundwater bodies

<b>Records on site</b>	<b>1</b>
------------------------	----------

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Looe and Fowey	<a href="#">GB40802G806600</a>	Poor	Poor	Good	2015

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

## 7 River and coastal flooding

### 7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

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

### 7.2 Historical Flood Events

Records within 250m

0

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

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

### 7.3 Flood Defences

Records within 250m

0

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

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

### 7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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



## 7.5 Flood Storage Areas

Records within 250m

0

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

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



## River and coastal flooding - Flood Zones

### 7.6 Flood Zone 2

Records within 50m

0

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

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

### 7.7 Flood Zone 3

Records within 50m

0

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

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





## 8 Surface water flooding

### 8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

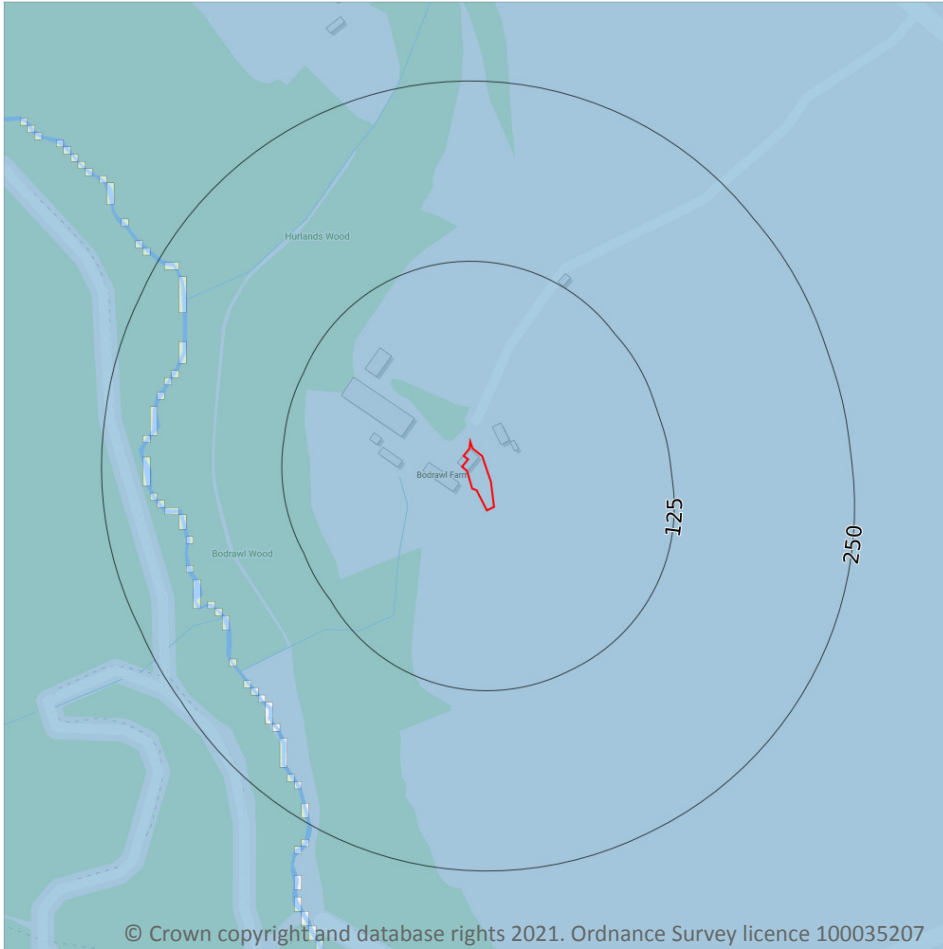
Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year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

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

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

*This data is sourced from Ambiental Risk Analytics.*

## 9 Groundwater flooding



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### 9.1 Groundwater flooding

**Highest risk on site**

**Negligible**

**Highest risk within 50m**

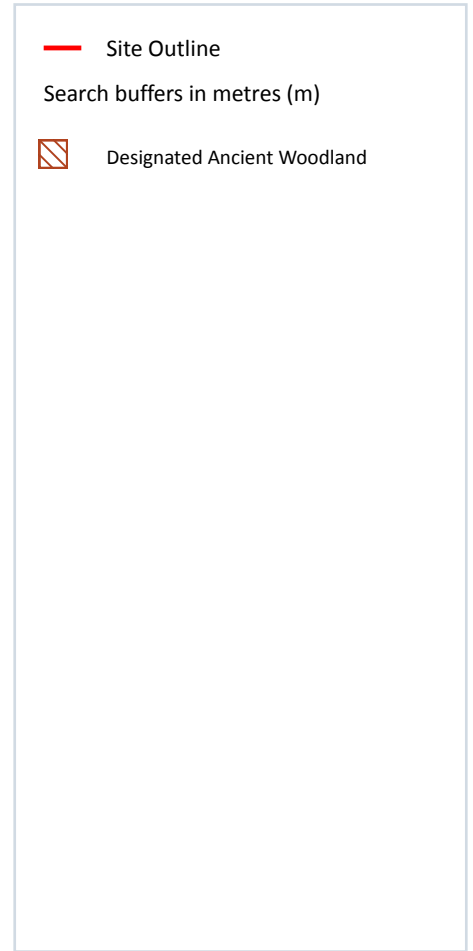
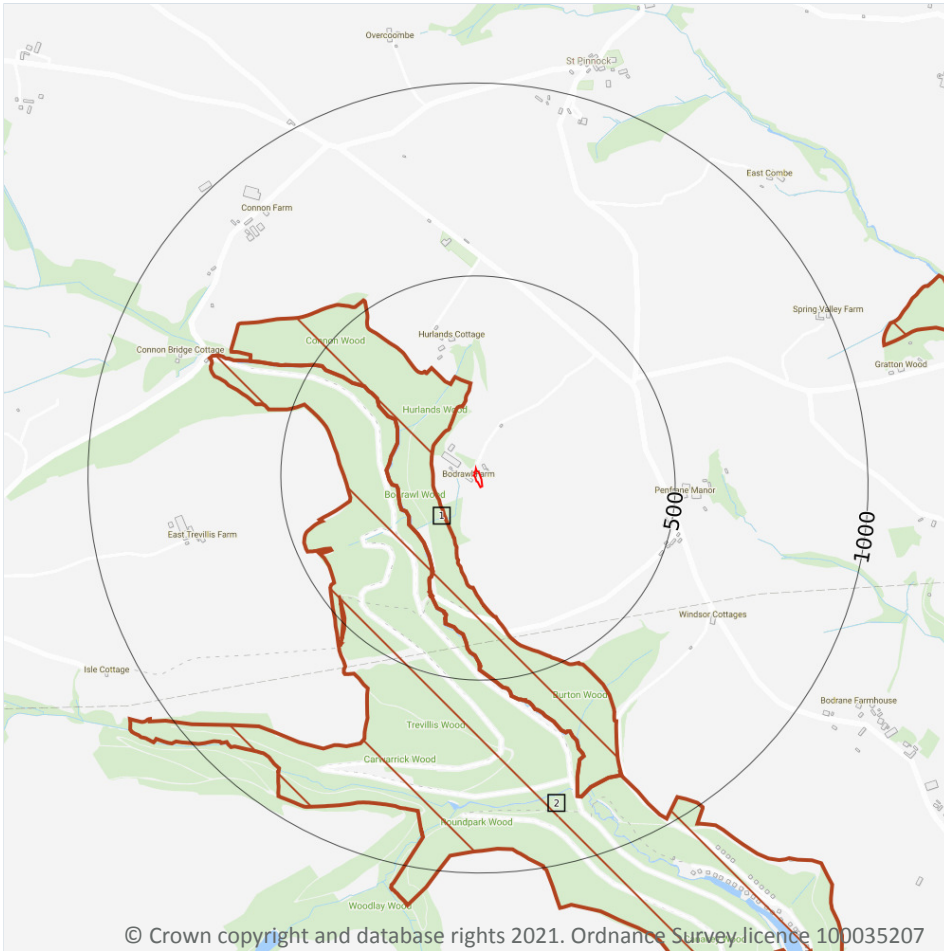
**Negligible**

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

Features are displayed on the Groundwater flooding map on **page 49**

*This data is sourced from Ambient Risk Analytics.*

## 10 Environmental designations



### 10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

## 10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

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

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

## 10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

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

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

## 10.4 Special Protection Areas (SPA)

Records within 2000m

0

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

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

## 10.5 National Nature Reserves (NNR)

Records within 2000m

0

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

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



## 10.6 Local Nature Reserves (LNR)

Records within 2000m

0

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

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

## 10.7 Designated Ancient Woodland

Records within 2000m

8

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

Features are displayed on the Environmental designations map on **page 50**

ID	Location	Name	Woodland Type
1	105m W	Glasshouse/hartswell Wood	Ancient & Semi-Natural Woodland
2	197m SW	Glasshouse/hartswell Wood	Ancient Replanted Woodland
3	1100m E	Coppice Wood	Ancient & Semi-Natural Woodland
-	1501m E	Coppice Wood	Ancient Replanted Woodland
-	1659m E	Unknown	Ancient & Semi-Natural Woodland
-	1659m S	Glasshouse/hartswell Wood	Ancient Replanted Woodland
-	1751m E	Unknown	Ancient & Semi-Natural Woodland
-	1817m SE	Pennington/leewoods	Ancient Replanted Woodland

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

## 10.8 Biosphere Reserves

Records within 2000m

0

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

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



## 10.9 Forest Parks

Records within 2000m

0

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

*This data is sourced from the Forestry Commission.*

## 10.10 Marine Conservation Zones

Records within 2000m

0

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

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

## 10.11 Green Belt

Records within 2000m

0

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

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

## 10.12 Proposed Ramsar sites

Records within 2000m

0

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

*This data is sourced from Natural England.*

## 10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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



## 10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

*This data is sourced from Natural England.*

## 10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

*This data is sourced from Natural England.*

## 10.16 Nitrate Vulnerable Zones

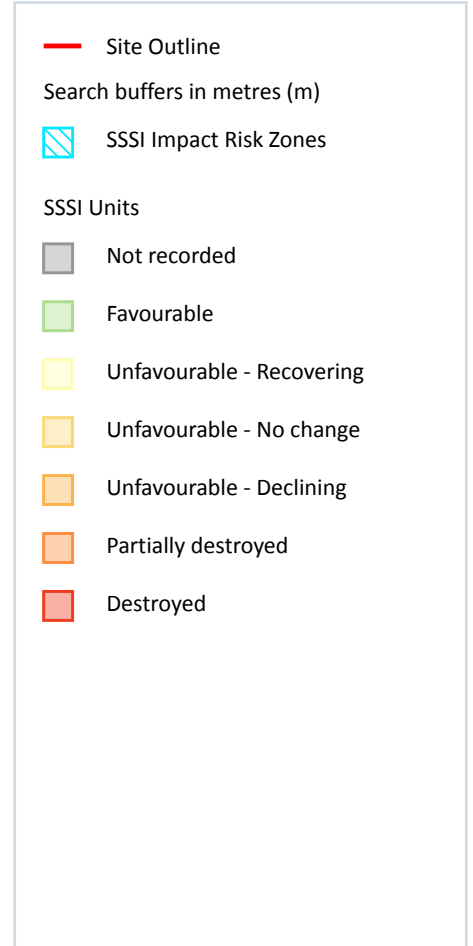
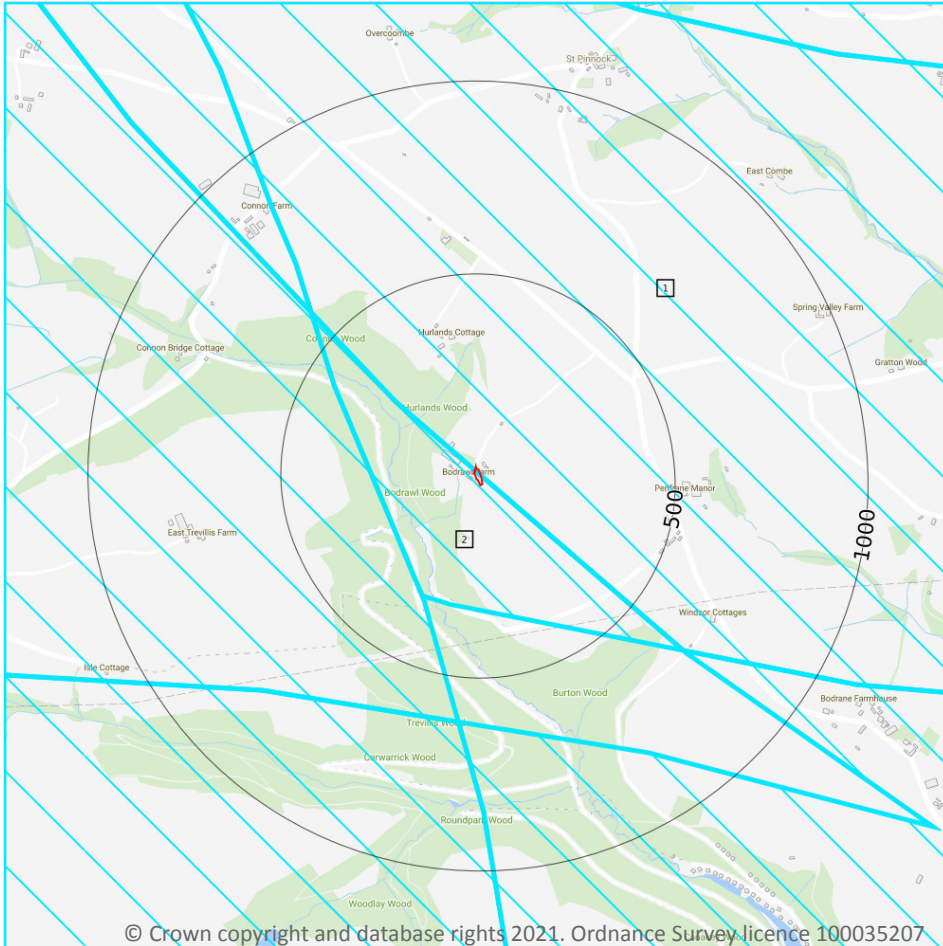
Records within 2000m

0

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

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

## SSSI Impact Zones and Units



### 10.17 SSSI Impact Risk Zones

Records on site

2

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

Features are displayed on the SSSI Impact Zones and Units map on **page 55**

ID	Location	Type of developments requiring consultation
1	On site	<b>Infrastructure - Airports, helipads and other aviation proposals.</b> <b>Air pollution - Livestock &amp; poultry units with floorspace &gt; 500m<sup>2</sup>, slurry lagoons &gt; 4000m<sup>2</sup>.</b> <b>Combustion - General combustion processes &gt;50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion</b>

ID	Location	Type of developments requiring consultation
2	On site	Infrastructure - Airports, helipads and other aviation proposals.

*This data is sourced from Natural England.*

## 10.18 SSSI Units

Records within 2000m	0
----------------------	---

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

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

## 11 Visual and cultural designations

### 11.1 World Heritage Sites

Records within 250m

0

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

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

### 11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

### 11.3 National Parks

Records within 250m

0

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

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

### 11.4 Listed Buildings

Records within 250m

0

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



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

## 11.5 Conservation Areas

**Records within 250m**

**0**

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

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

## 11.6 Scheduled Ancient Monuments

**Records within 250m**

**0**

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

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

## 11.7 Registered Parks and Gardens

**Records within 250m**

**0**

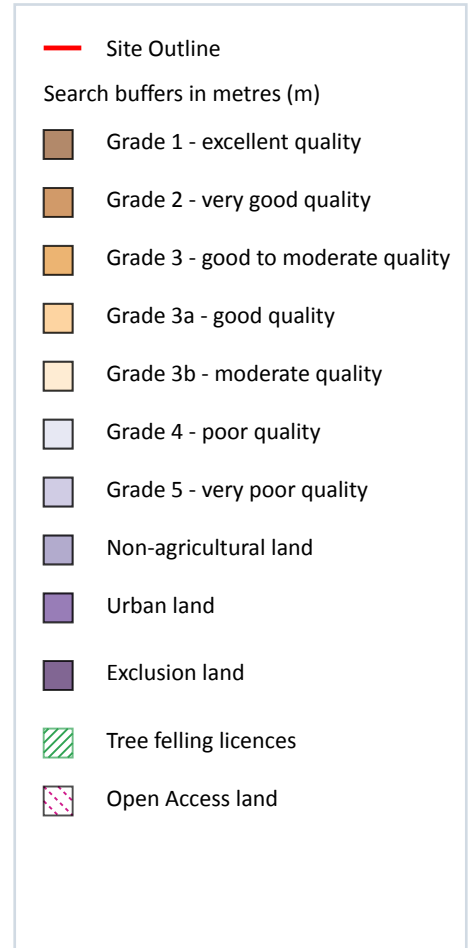
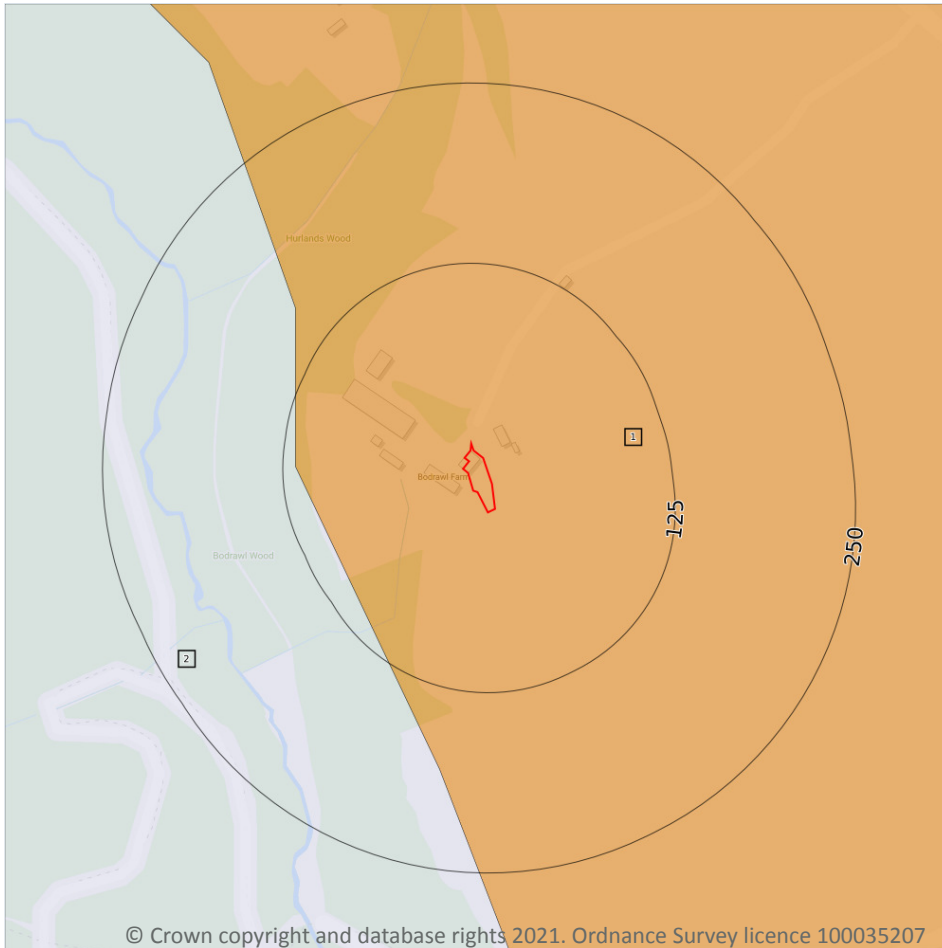
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

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





## 12 Agricultural designations



### 12.1 Agricultural Land Classification

Records within 250m

2

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

Features are displayed on the Agricultural designations map on **page 59**

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

ID	Location	Classification	Description
2	104m SW	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

*This data is sourced from Natural England.*

## 12.2 Open Access Land

**Records within 250m**

**0**

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

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

## 12.3 Tree Felling Licences

**Records within 250m**

**0**

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

*This data is sourced from the Forestry Commission.*

## 12.4 Environmental Stewardship Schemes

**Records within 250m**

**0**

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

*This data is sourced from Natural England.*



## 12.5 Countryside Stewardship Schemes

**Records within 250m****2**

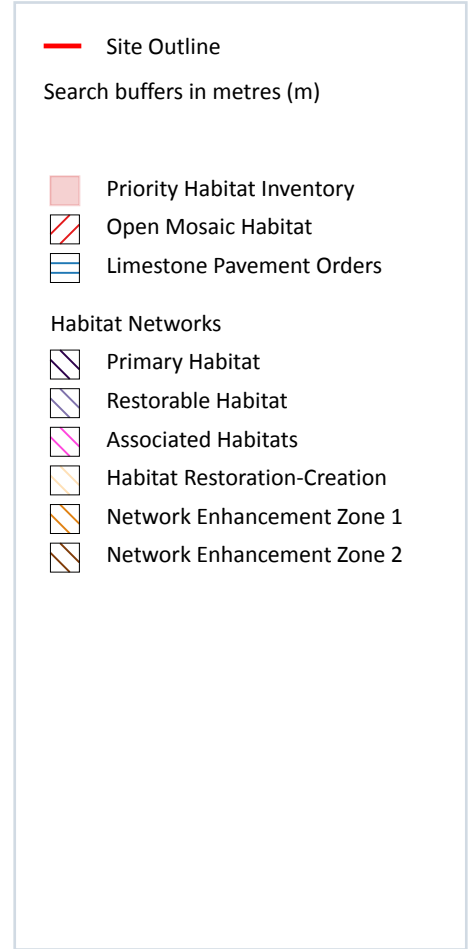
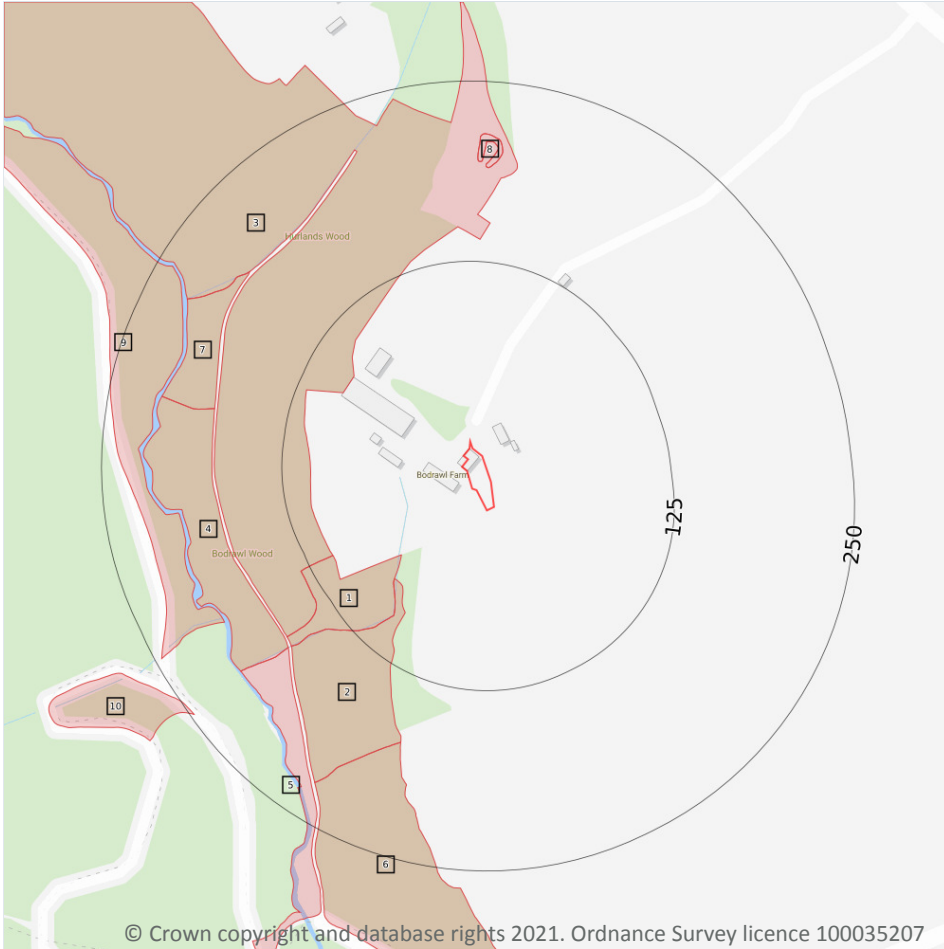
Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

Location	Reference	Scheme	Start Date	End Date
10m NE	99668	Countryside Stewardship (Middle Tier)	01/01/2016	31/12/2020
96m E	99668	Countryside Stewardship (Middle Tier)	01/01/2016	31/12/2020

*This data is sourced from Natural England.*



## 13 Habitat designations



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### 13.1 Priority Habitat Inventory

Records within 250m

10

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

Features are displayed on the Habitat designations map on **page 62**

ID	Location	Main Habitat	Other habitats
1	67m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	78m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	92m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	165m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	167m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	172m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	176m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	190m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	195m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
10	247m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

*This data is sourced from Natural England.*

## 13.2 Habitat Networks

<b>Records within 250m</b>	<b>0</b>
----------------------------	----------

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

*This data is sourced from Natural England.*

## 13.3 Open Mosaic Habitat

<b>Records within 250m</b>	<b>0</b>
----------------------------	----------

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

*This data is sourced from Natural England.*

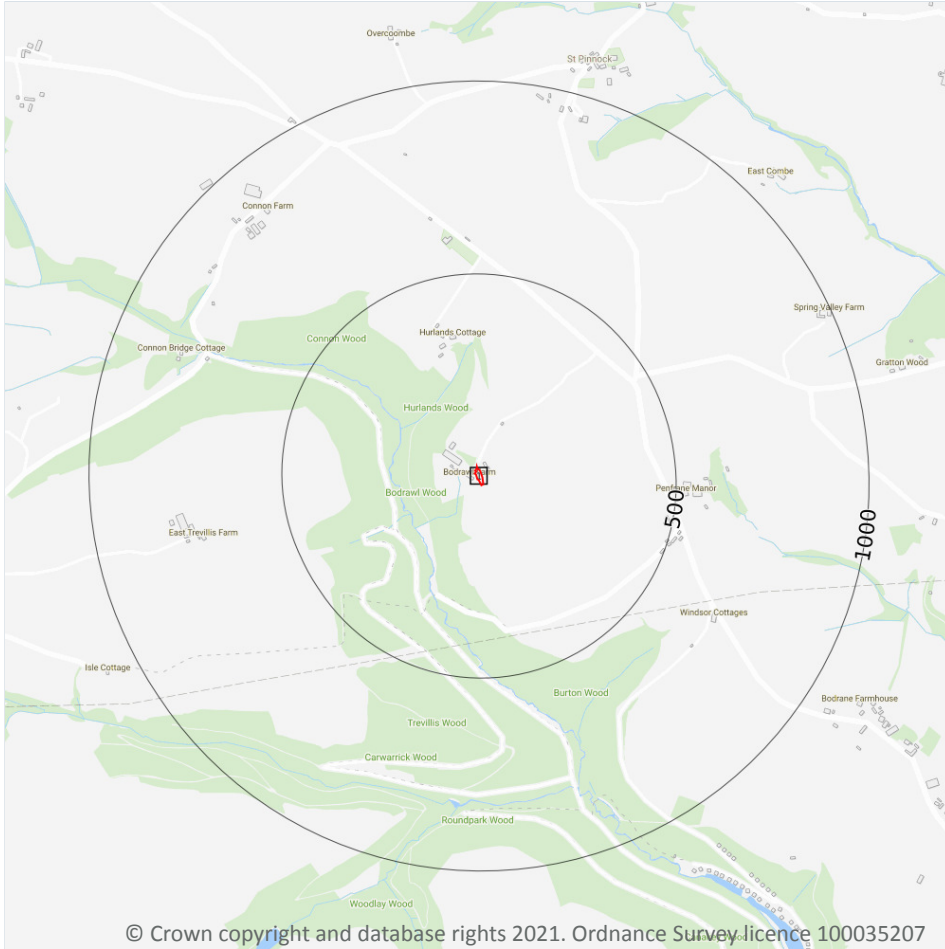
## 13.4 Limestone Pavement Orders

<b>Records within 250m</b>	<b>0</b>
----------------------------	----------

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

*This data is sourced from Natural England.*

## 14 Geology 1:10,000 scale - Availability



— Site Outline  
 Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

### 14.1 10k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 64**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	No coverage	No coverage	No coverage	NoCov

*This data is sourced from the British Geological Survey.*



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

### 14.2 Artificial and made ground (10k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

## Geology 1:10,000 scale - Superficial

### 14.3 Superficial geology (10k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

### 14.4 Landslip (10k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*



## Geology 1:10,000 scale - Bedrock

### 14.5 Bedrock geology (10k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

### 14.6 Bedrock faults and other linear features (10k)

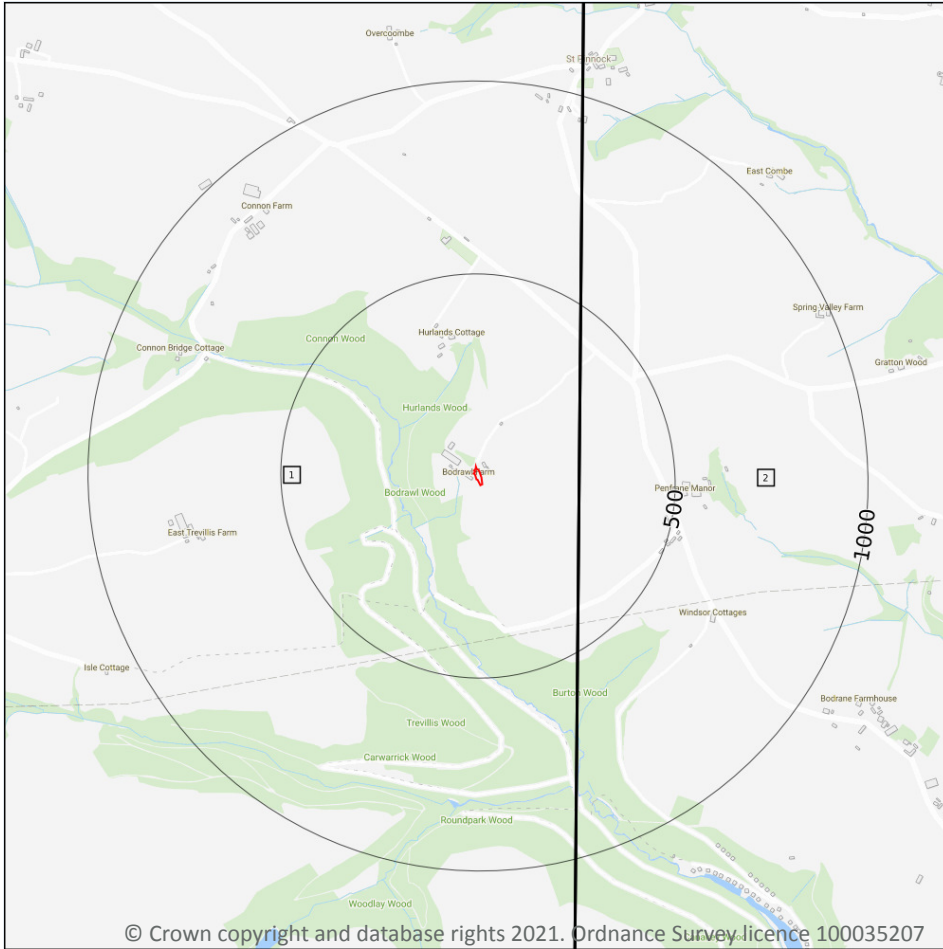
Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

## 15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

### 15.1 50k Availability

Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 68](#)

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW347_bodmin_v4
2	251m E	Full	Full	Full	Full	EW348_plymouth_v4

*This data is sourced from the British Geological Survey.*

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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

0

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

*This data is sourced from the British Geological Survey.*

## Geology 1:50,000 scale - Superficial

### 15.4 Superficial geology (50k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

### 15.5 Superficial permeability (50k)

Records within 50m

0

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

*This data is sourced from the British Geological Survey.*

### 15.6 Landslip (50k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

### 15.7 Landslip permeability (50k)

Records within 50m

0

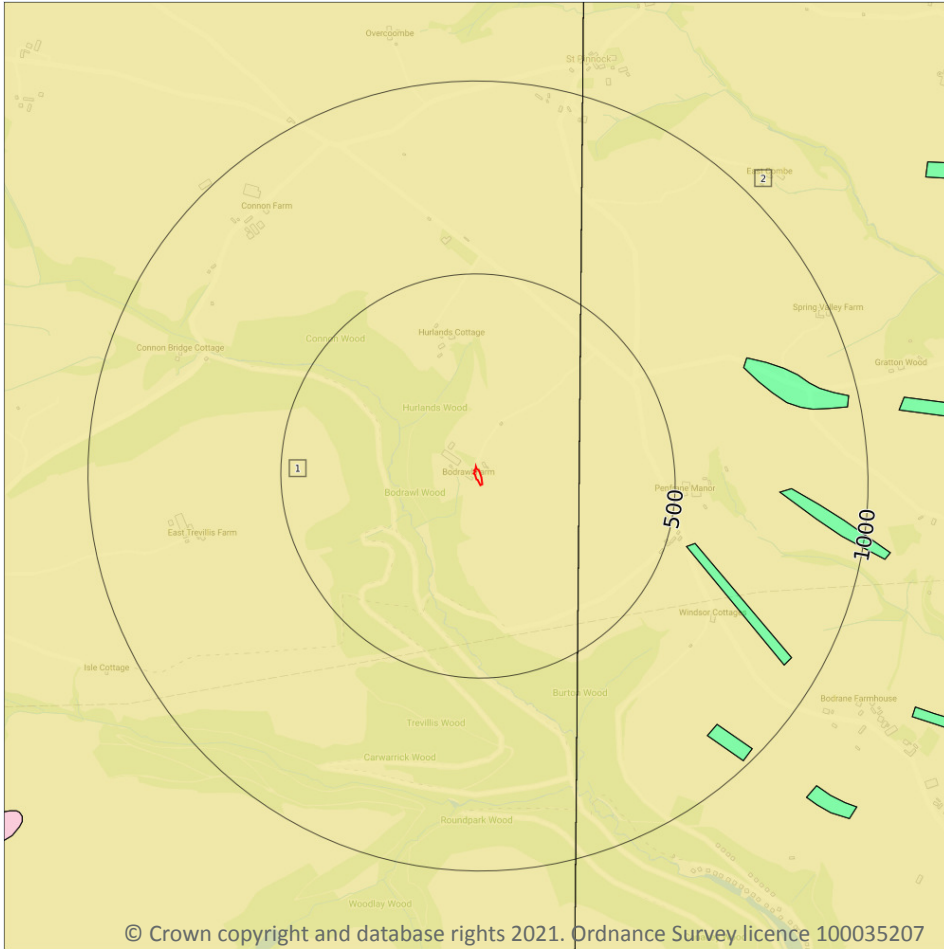
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- ..... Bedrock faults and other linear features (50k)
- Bedrock geology (50k)  
Please see table for more details.

### 15.8 Bedrock geology (50k)

Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 71**

ID	Location	LEX Code	Description	Rock age
1	On site	SAH-SLAS	SALTASH FORMATION - SLATE AND SILTSTONE	EMSIAN
2	251m E	SAH-SLAS	SALTASH FORMATION - SLATE AND SILTSTONE	EMSIAN

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

<b>Records within 50m</b>	<b>1</b>
---------------------------	----------

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Low	Low

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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

*This data is sourced from the British Geological Survey.*

## 16 Boreholes

### 16.1 BGS Boreholes

Records within 250m

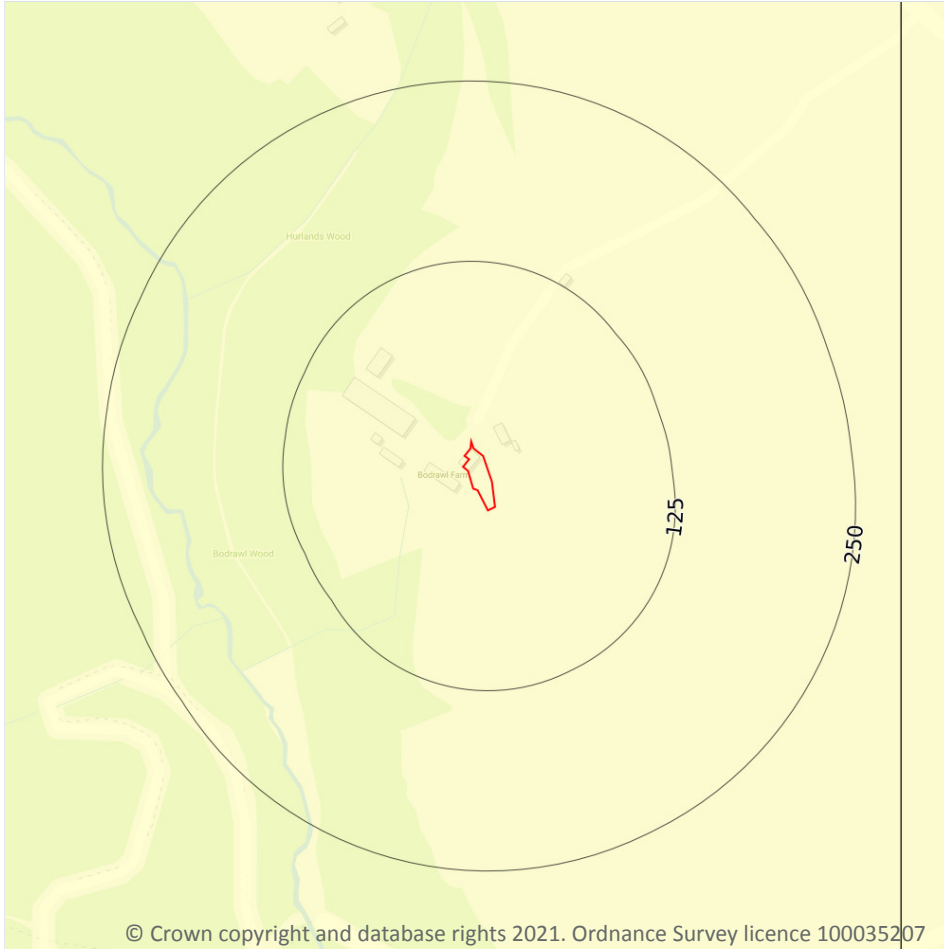
0

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

*This data is sourced from the British Geological Survey.*



## 17 Natural ground subsidence - Shrink swell clays



### 17.1 Shrink swell clays

Records within 50m

1

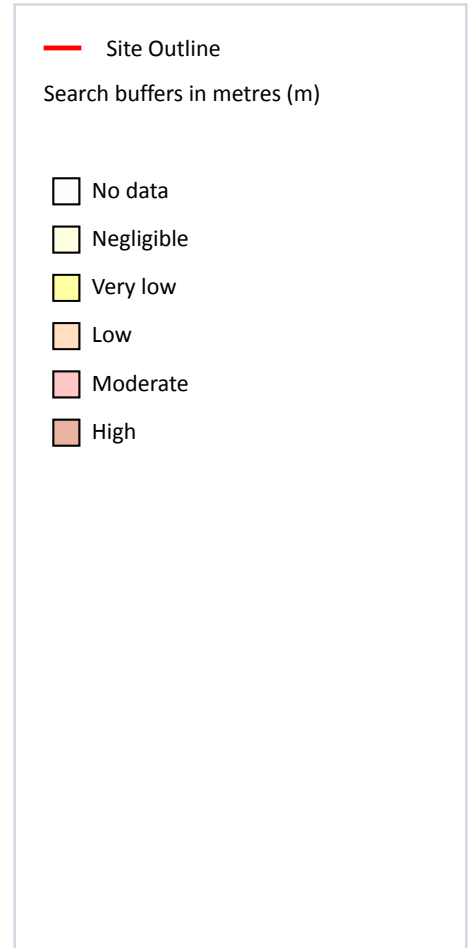
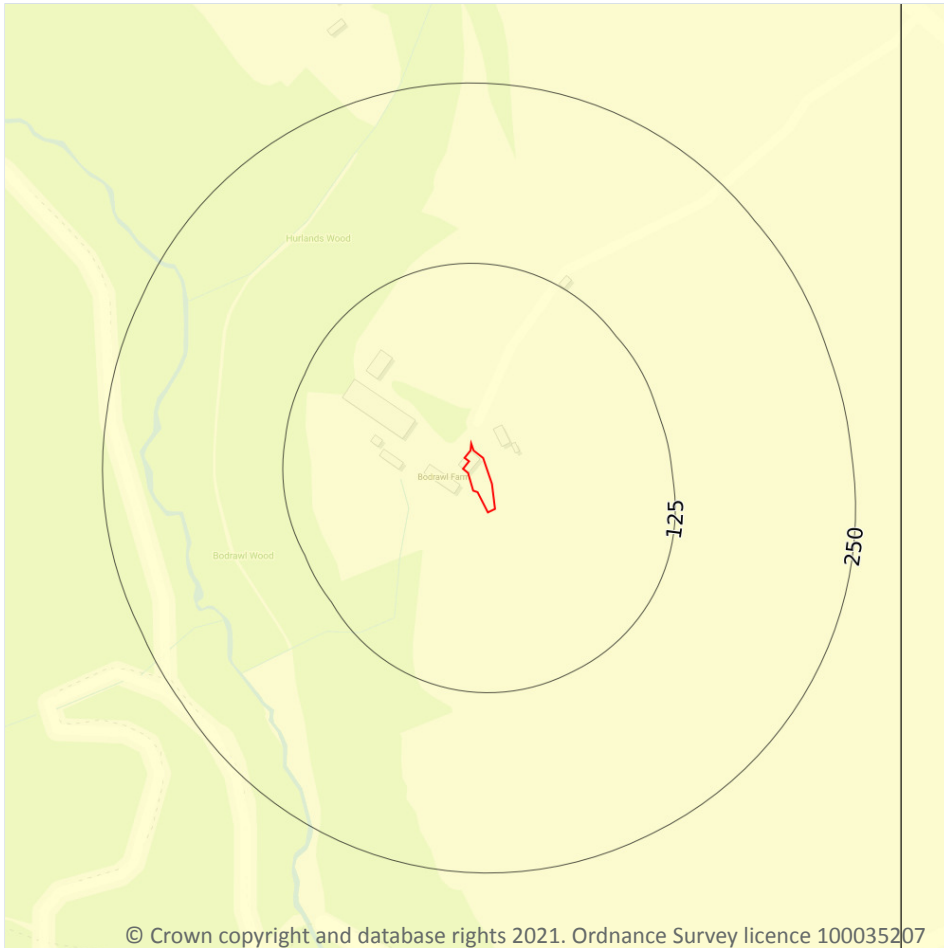
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 74**

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

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Running sands



### 17.2 Running sands

Records within 50m

1

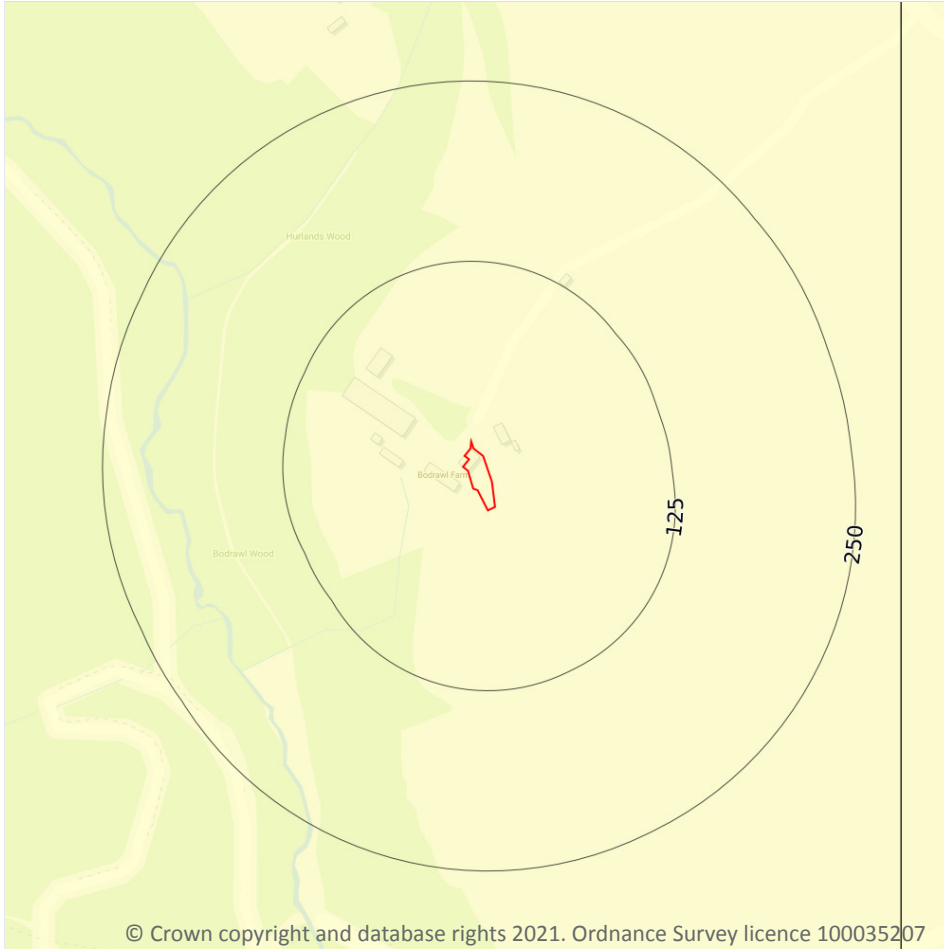
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 75**

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

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Compressible deposits



### 17.3 Compressible deposits

Records within 50m

1

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

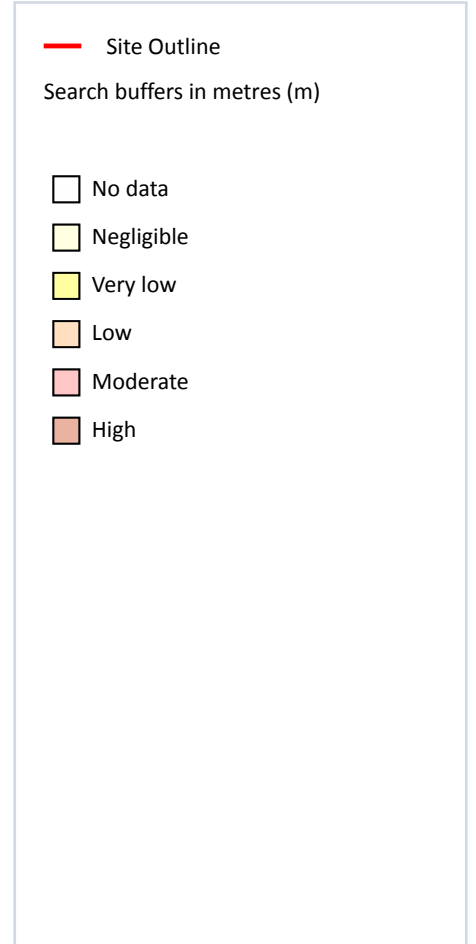
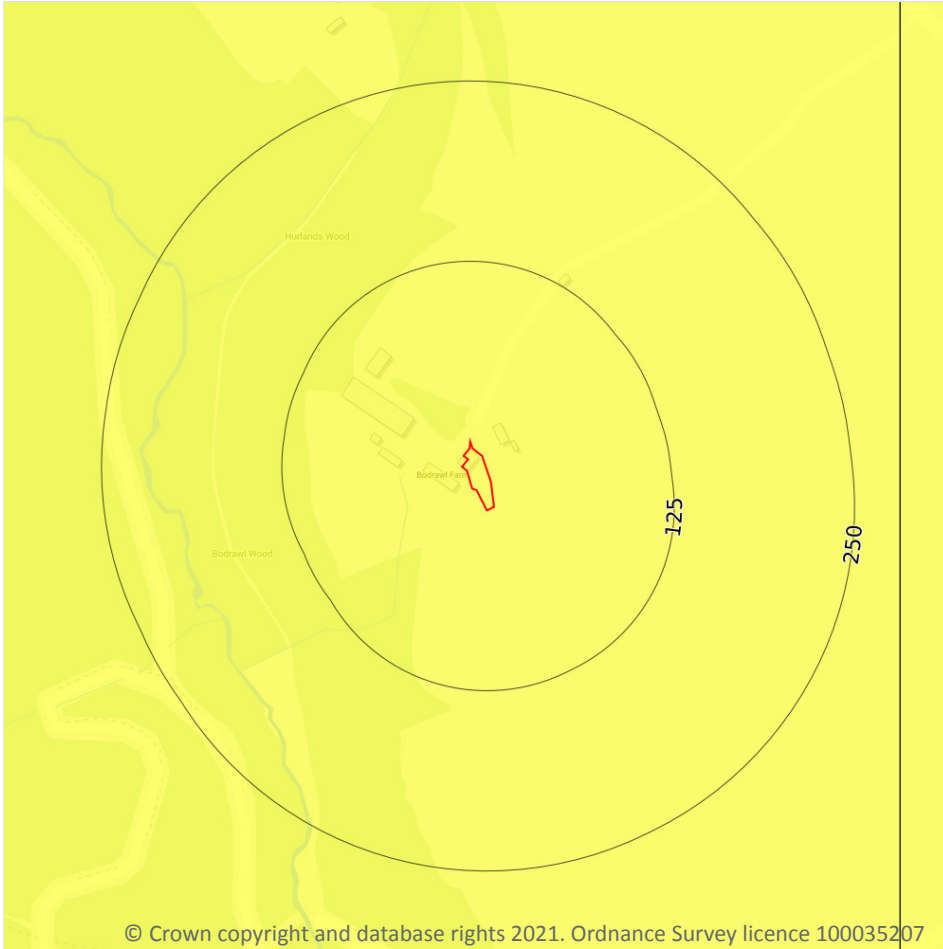
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 76**

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

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Collapsible deposits



### 17.4 Collapsible deposits

Records within 50m

1

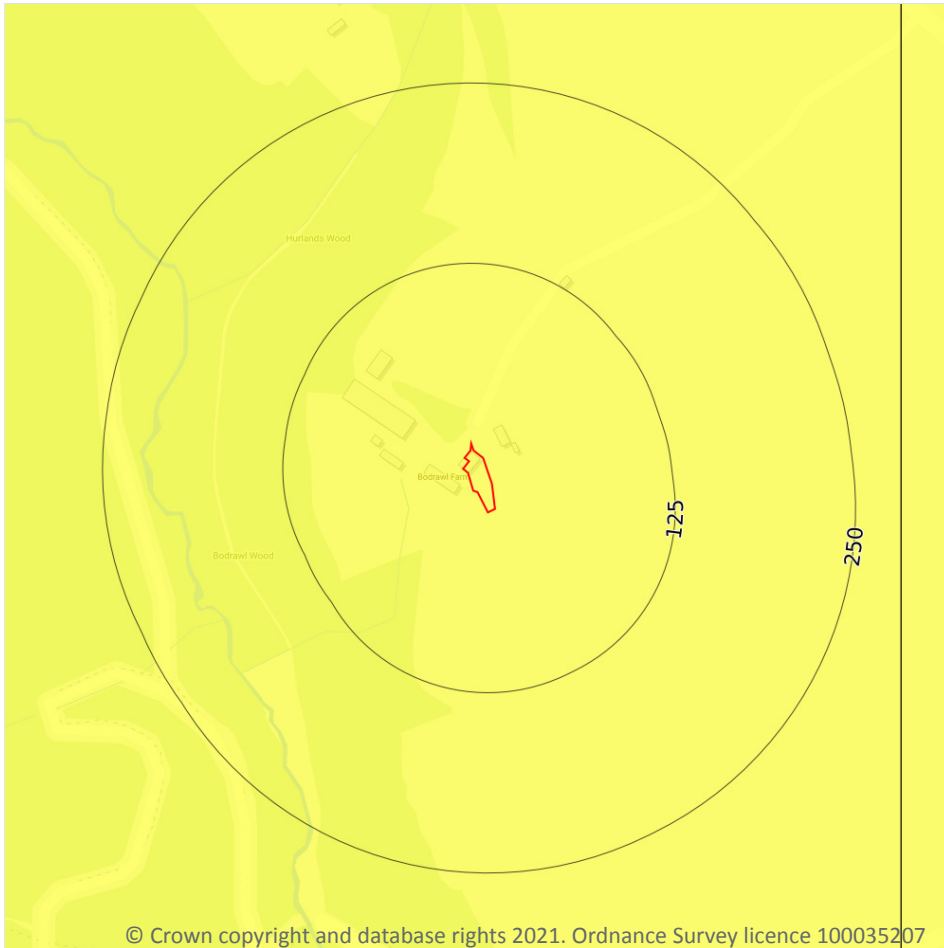
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 77**

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

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Landslides



### 17.5 Landslides

Records within 50m

1

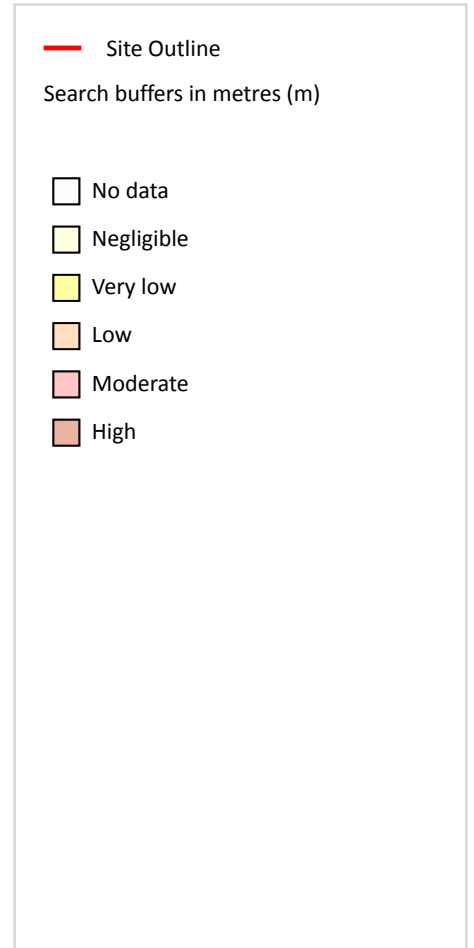
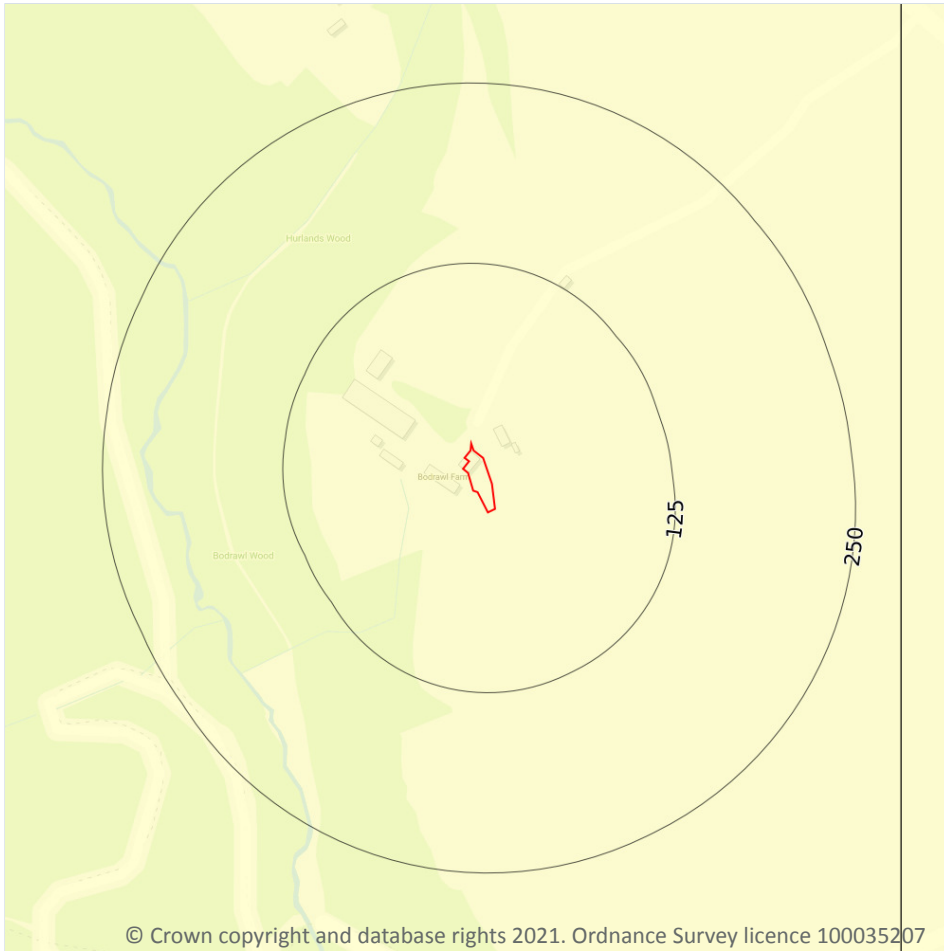
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 78**

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

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Ground dissolution of soluble rocks



### 17.6 Ground dissolution of soluble rocks

Records within 50m

1

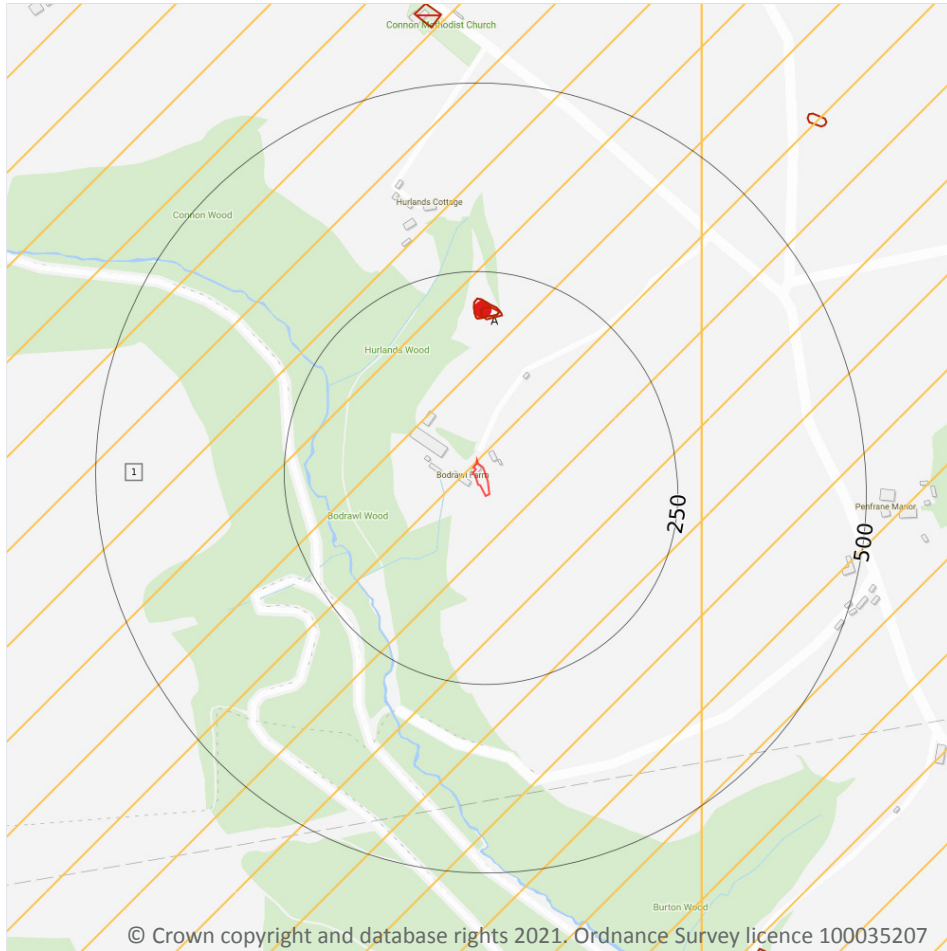
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 79**

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

*This data is sourced from the British Geological Survey.*

## 18 Mining, ground workings and natural cavities



### 18.1 Natural cavities

Records within 500m

0

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

*This data is sourced from Stantec UK Ltd.*

## 18.2 BritPits

Records within 500m

1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 80**

ID	Location	Details	Description
A	200m N	Name: Hurlands Address: St Pinnock, LISKEARD, Cornwall Commodity: Slate Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

*This data is sourced from the British Geological Survey.*

## 18.3 Surface ground workings

Records within 250m

3

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 80**

ID	Location	Land Use	Year of mapping	Mapping scale
A	187m N	Unspecified Old Quarry	1958	1:10560
A	188m N	Unspecified Quarry	1881	1:10560
A	188m N	Unspecified Old Quarry	1905	1:10560

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.4 Underground workings

Records within 1000m

0

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

*This is data is sourced from Ordnance Survey/Groundsure.*



## 18.5 Historical Mineral Planning Areas

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

## 18.6 Non-coal mining

Records within 1000m

2

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 80**

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Vein Mineral	B	<b>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</b>
2	282m E	Not available	Vein Mineral	B	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

*This data is sourced from the British Geological Survey.*

## 18.7 Mining cavities

Records within 1000m

0

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

*This data is sourced from Stantec UK Ltd.*





## 18.8 JPB mining areas

Records on site	0
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Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

*This data is sourced from Johnson Poole and Bloomer.*

## 18.9 Coal mining

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

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

*This data is sourced from the Coal Authority.*

## 18.10 Brine areas

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

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

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

## 18.11 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

*This data is sourced from British Gypsum.*

## 18.12 Tin mining

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

Generalised areas that may be affected by historical tin mining.

*This data is sourced from Mining Searches UK.*

## 18.13 Clay mining

Records on site

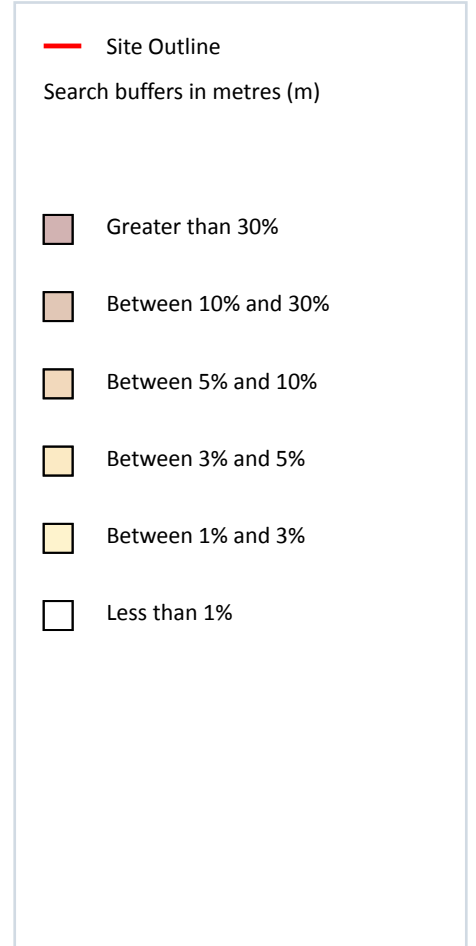
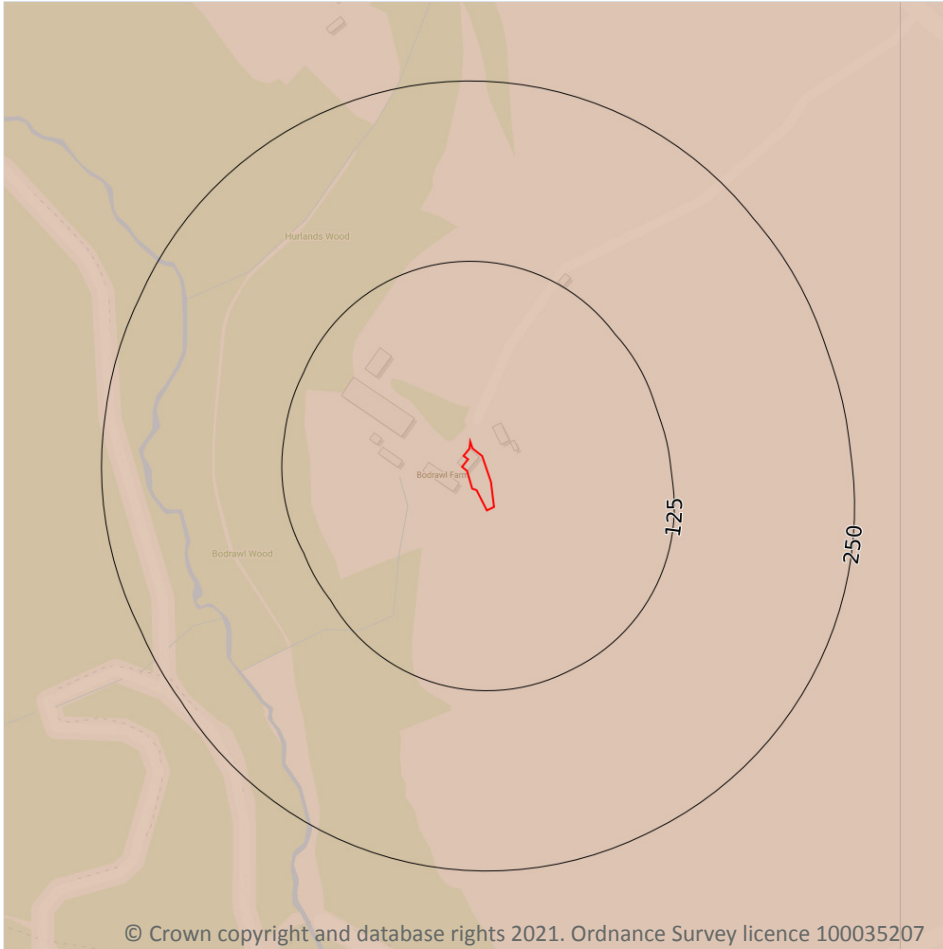
0

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

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



## 19 Radon



### 19.1 Radon

#### Records on site

1

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

Features are displayed on the Radon map on **page 85**

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 10% and 30%	Full

*This data is sourced from the British Geological Survey and Public Health England.*



## 20 Soil chemistry

### 20.1 BGS Estimated Background Soil Chemistry

Records within 50m

1

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

*This data is sourced from the British Geological Survey.*

### 20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km<sup>2</sup>).

*This data is sourced from the British Geological Survey.*

### 20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

*This data is sourced from the British Geological Survey.*



## 21 Railway infrastructure and projects

### 21.1 Underground railways (London)

Records within 250m 0

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

*This data is sourced from publicly available information by Groundsure.*

### 21.2 Underground railways (Non-London)

Records within 250m 0

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

*This data is sourced from publicly available information by Groundsure.*

### 21.3 Railway tunnels

Records within 250m 0

Railway tunnels taken from contemporary Ordnance Survey mapping.

*This data is sourced from the Ordnance Survey.*

### 21.4 Historical railway and tunnel features

Records within 250m 0

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

*This data is sourced from Ordnance Survey/Groundsure.*

### 21.5 Royal Mail tunnels

Records within 250m 0

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

*This data is sourced from Groundsure/the Postal Museum.*

## 21.6 Historical railways

**Records within 250m** **0**

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

*This data is sourced from OpenStreetMap.*

## 21.7 Railways

**Records within 250m** **0**

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

*This data is sourced from Ordnance Survey and OpenStreetMap.*

## 21.8 Crossrail 1

**Records within 500m** **0**

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

*This data is sourced from publicly available information by Groundsure.*

## 21.9 Crossrail 2

**Records within 500m** **0**

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

*This data is sourced from publicly available information by Groundsure.*

## 21.10 HS2

**Records within 500m** **0**

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

*This data is sourced from HS2 Ltd.*





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## Data providers

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

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**Appendix B**  
Groundsure MapInsight Report

**Site Details:**

Barn Adjacent to BODRAWL BUNGALOW, ROAD FROM JUNCTION WEST OF PENHALE TO GELLIS RISE, ST KEYNE, PL14 4QT

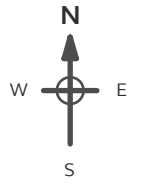
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**Report Ref:** GS-7925221  
**Grid Ref:** 219707, 62152

**Map Name:** County Series

**Map date:** 1882

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1882  
 Revised 1882  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

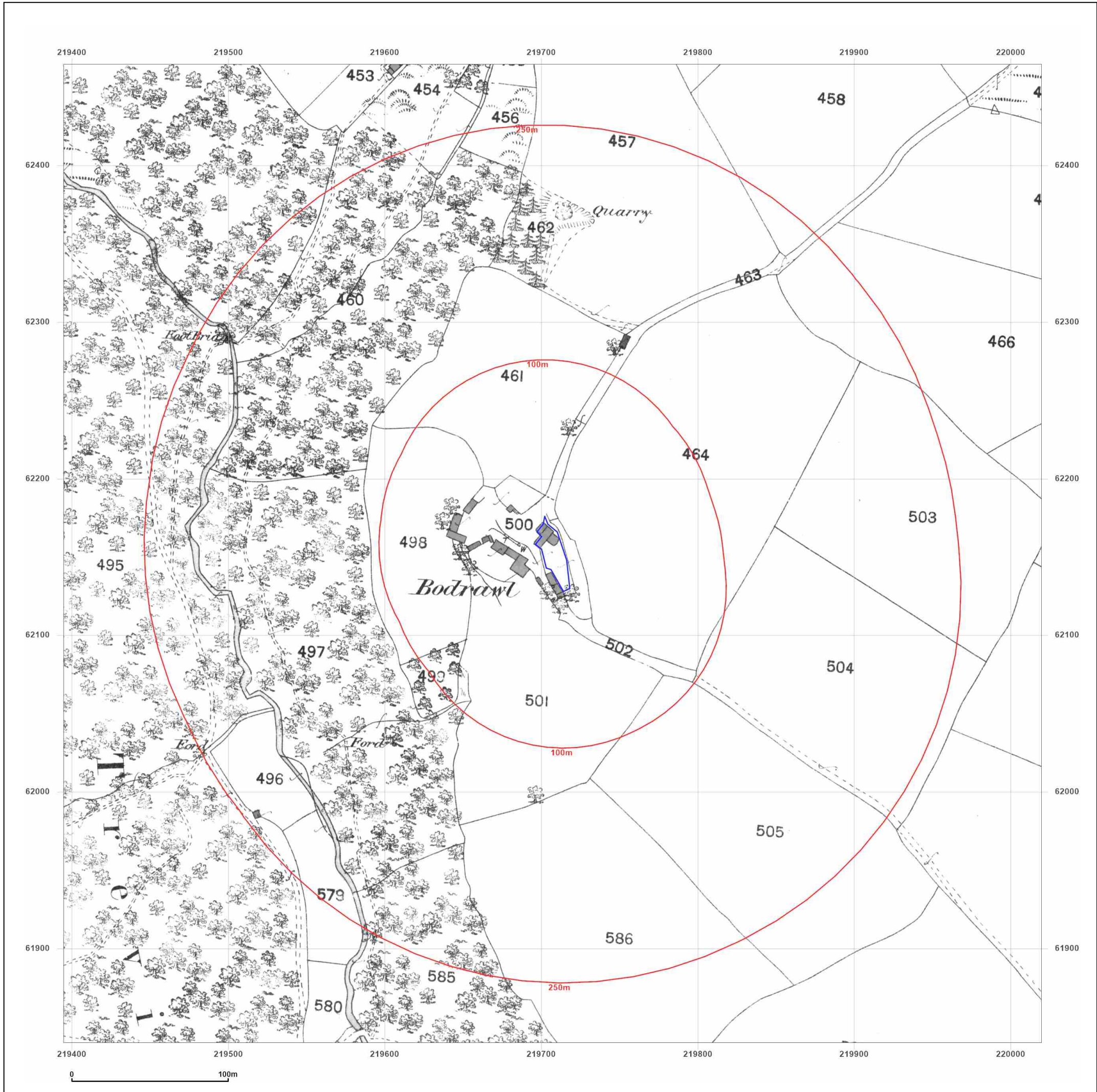


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Map legend available at: [www.groundsure.com/sites/default/files/groundsure\\_legend.pdf](http://www.groundsure.com/sites/default/files/groundsure_legend.pdf)





**Site Details:**

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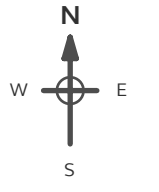
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**Map Name:** County Series

**Map date:** 1907

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1907  
 Revised 1907  
 Edition N/A  
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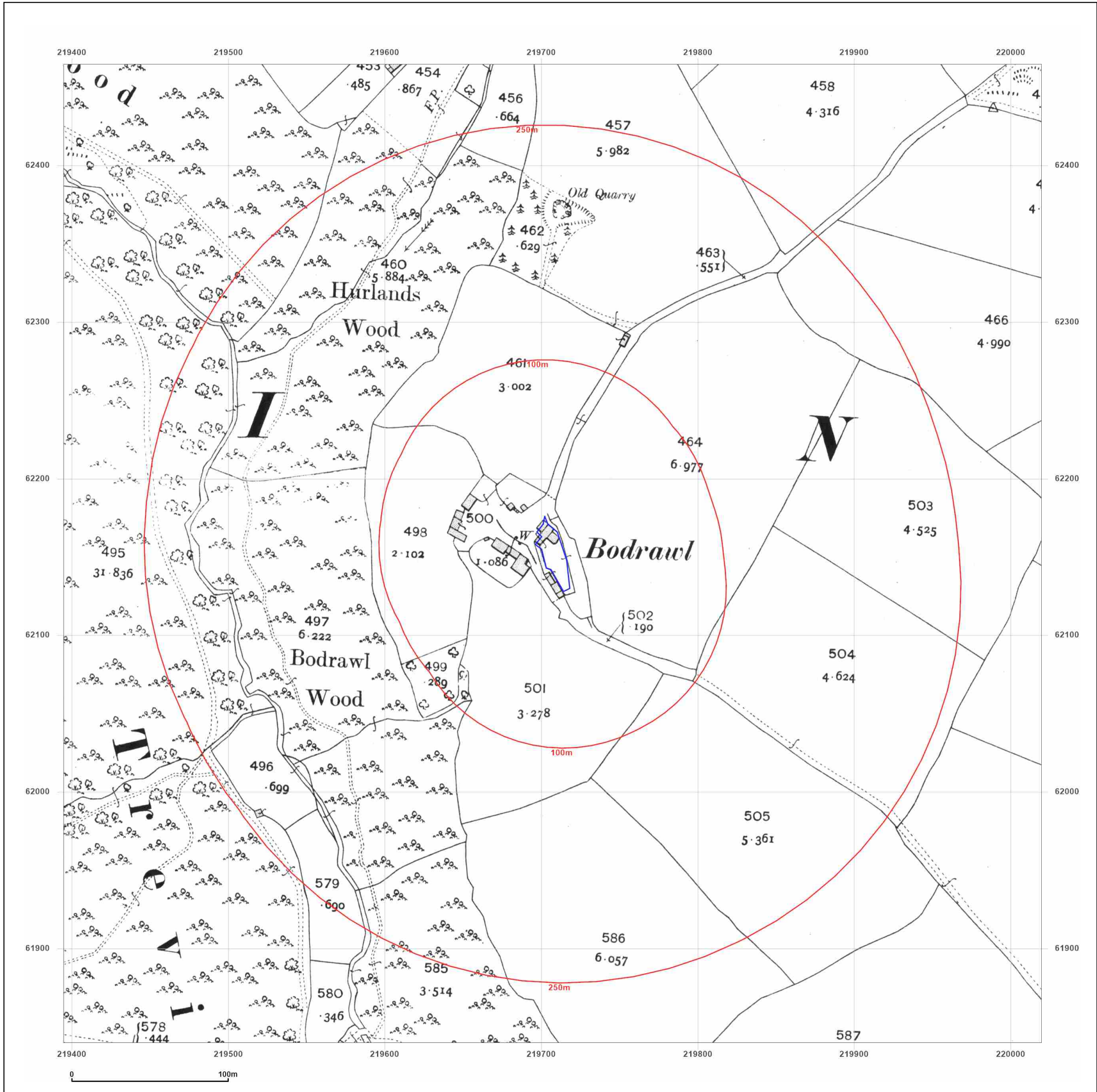


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**Map Name:** National Grid

**Map date:** 1973-1974

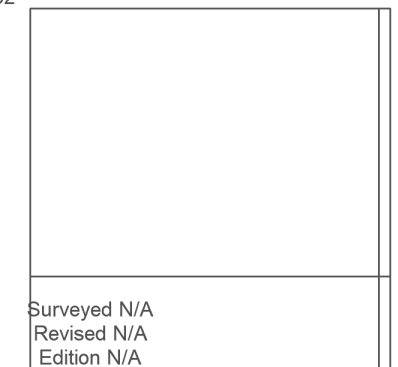
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**Printed at:** 1:2,500



Surveyed 1974  
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 Edition N/A  
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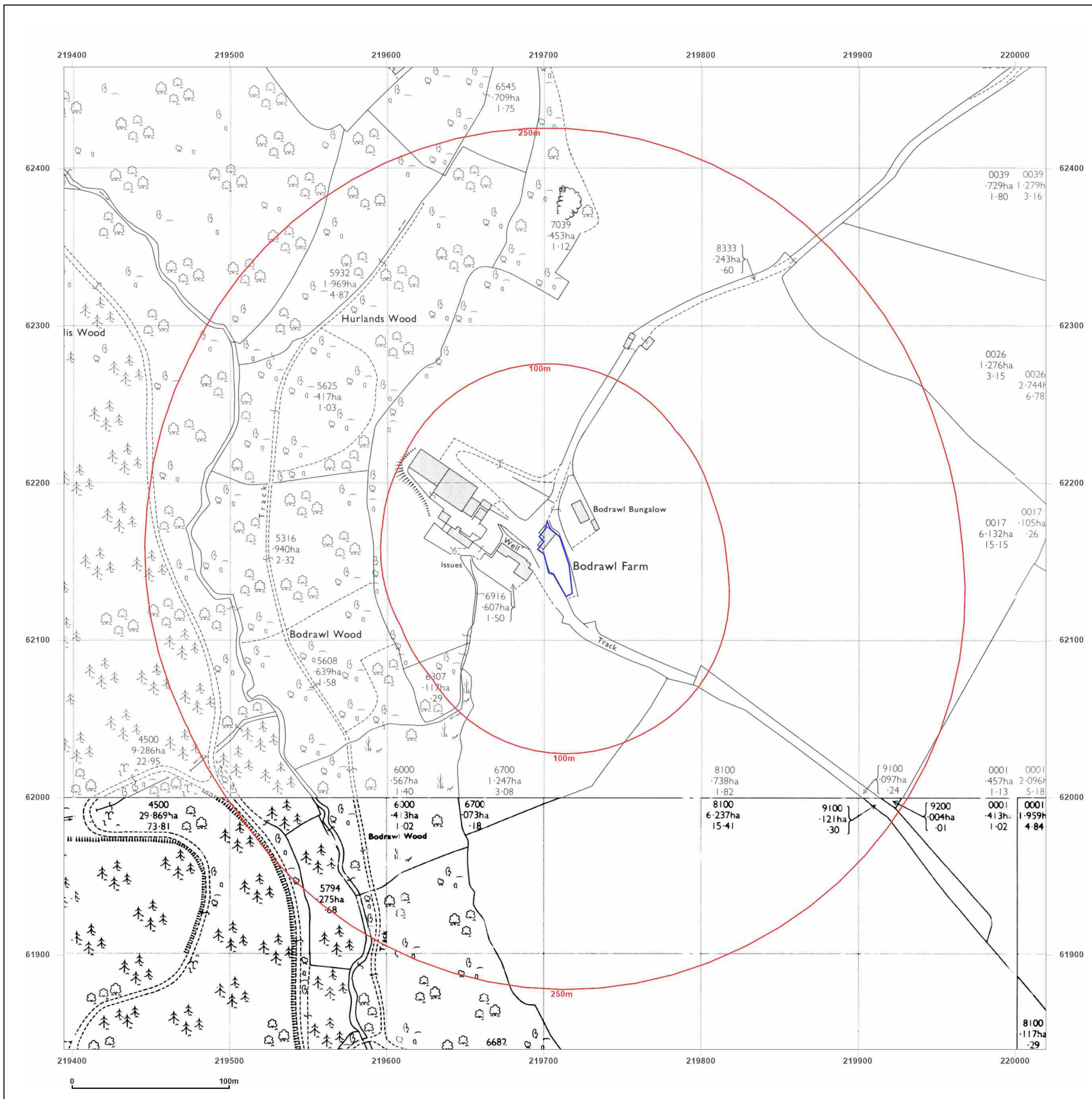


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**Map date:** 1973-1975

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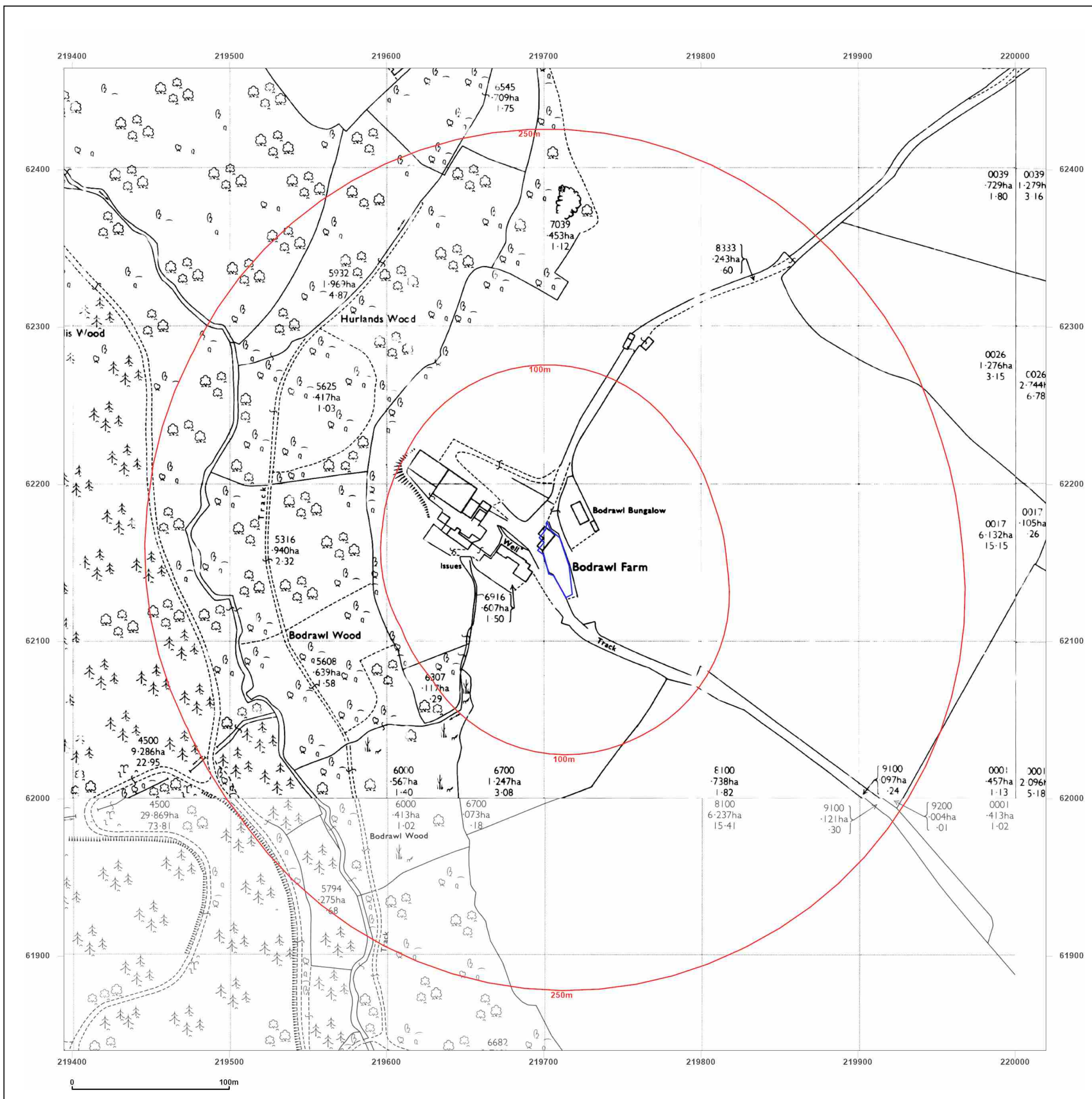


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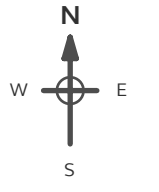
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**Map Name:** National Grid

**Map date:** 1994-1995

**Scale:** 1:2,500

**Printed at:** 1:2,500



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