Blue Cedar Homes Limited

Castle Street, Deddington

Phase 1 Geo-environmental Site Assessment

314228

DECEMBER 2018

RSK GENERAL NOTES

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1 INTRODUCTION

1.1 Commissioning

RSK Environment Limited (RSK) was commissioned by Blue Cedar Homes Limited to carry out a Phase 1 Geo-environmental Site Assessment of the land off Castle Street, Deddington. The project was carried out to an agreed brief as set out in RSK's proposal (Ref. T314228 L01 (01), dated 15/11/2018).

This report is subject to the RSK service constraints given in **Appendix A** and limitations that may be described through this document.

1.2 Proposed development

The Site in question is being considered for development for residential end use. At the time of reporting no proposed development plan had been provided to RSK.

1.3 Objectives

The objective of the work is:

- Examine whether there have been potentially contaminative uses on the site or nearby land;
- Develop an initial conceptual model;
- Use desk-based information regarding ground conditions to qualitatively assess risks to end-users and the environment in relation to the proposals;
- Make recommendations, where appropriate, for the proposed scope of Phase II intrusive site works.

1.4 Scope of works

The scope of this assessment has been developed in accordance with relevant British Standards and authoritative technical guidance as referenced through the report. The assessment of the contamination status of the site is in line with the technical approach presented in CLR 11 Model Procedures for the Management of Land Contamination (Environment Agency, 2004) and in general accordance with BS 10175: 2011 + A2 2017 (BSI, 2017). It is also compliant with relevant planning policy and guidance.

The scope of the intrusive investigation has been designed in line with the recommendations of BS5930: 2015 Code of practice for ground investigations (BSi, 2016), which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. It has also been developed in general accordance with BS 10175: 2011 + A2 2017.

A brief summary of relevant legislation and policy relating to contaminated land is given in **Appendix B**.

The scope of works for the assessment has included the following:

Desk Study:

- A site walkover inspection, including the identification of surrounding land use and location of possible sensitive environmental receptors in the site vicinity.
- A review of the geology and hydrogeology of the site to enable assessments to be made on the migration potential for contaminants that may be present on the site or in and around adjacent properties.
- A review of a commercially available environmental database to determine:

  Records of past pollution or other incidents relevant to the site

  Information regarding the location of recorded landfill sites within the site vicinity

  Details of groundwater abstractions (location, water use, source strata)

  Details of surface water quality classifications

  Information relating to ground stability

  A review of historical maps included with the database report to identify historical uses of the site and surrounding area.
- The identification of potential geological hazards, including radon.
- Preliminary UXO assessment.
- Production of an initial conceptual site model identifying potentially complete contaminant linkages and qualitative risk assessment to identify the linkages for which further work may be necessary, e.g. site investigation.
- Recommended scope of Phase II intrusive investigations.

1.5 Existing reports

No existing reports relevant to the site assessment have been provided to RSK.

1.6 Limitations

The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

This report should be considered in the light of any changes in legislation, statutory requirement or industry practices that have occurred subsequent to the date of issue.

The "vicinity" of the site for the purposes of this report is defined as locations situated within an approximate 250m radius of the site, although certain sources and/or sensitive targets further than 250m may also have been considered.

2 SITE DETAILS

2.1 Site location

Site location details are presented in **Table 1** and a site location plan is provided on **Figure 1**.

Table 1 Site location details

Site name	Castle Street, Deddington
Full site address and postcode	Land south of Castle Street, Deddington OX15 0TE
National Grid reference (centre of site)	447115, 231706

2.2 Site description

The Site boundary and current site layout are shown on **Figure 2**. The Site covers an area of c. 1.62 hectares. It is currently generally flat and occupied by a single open undeveloped field.

The Site is roughly square in shape bordered by Castle Street / Clifton Road to the north, residential development to the east and west and open agricultural land to the south. The Site is covered by rough grassland showing no signs of agricultural working. Large mature trees line the north and south boundaries of the site with occasional mature trees along the east and west boundaries.

2.3 Site Reconnaissance

A site reconnaissance survey was completed on 4th December 2018 by RSK. The characteristics of the site observed during the walkover and from current Ordnance Survey maps are summarised in **Table 2**.

A site plan is provided in **Figure 2** with photographic records included in **Appendix E** detailing the main features identified below.

Whilst the walkover summary includes consideration of current operations and housekeeping on the site as potential sources of contamination, it does not constitute a comprehensive environmental audit of the site, as covered under ISO 14001.

Table 2 Site reconnaissance findings

Feature	Description
Physical characteristics	
Access constraints	Site entrance is shared with neighbouring properties. Entrance is barred by a standard farm gate. The entrance road is made up of hardcore material.
Site topography	Site is generally level with no evidence of subsidence or landslips.
Surface cover	Majority of the site is grassed, with mature trees along the site boundaries.
Site drainage	No evidence of the site flooding and no surface water accumulation observed. Surface water assumed to exit the site via the drainage ditch along the northern boundary.
Surface water	Overgrown drainage ditch noted along the northern boundary. No evidence of water being present.
Trees and hedges	Mature evergreen trees line the western and southern boundaries of the site, with occasional mature trees along the eastern boundary. The northern boundary is covered by thick evergreen trees and hedging.
Invasive species	Based upon the walkover survey obvious evidence of Japanese Knotweed or other invasive species has not been identified on-site. However, it should be noted that a detailed survey of the possible presence or absence of invasive species is outside of the scope of investigation and consideration should be given to commissioning a specialist survey, as necessary. Due to the survey taking place in December it is unlikely any invasive species would be immediately obvious due to the dieback of vegetation that occurs between October and April.
Existing buildings on-site	A small derelict corrugated iron shed was present in the west of the site.
Retaining walls and adjacent buildings on or close to site boundary	There are no such structures on or close to the site boundary.
Basements on-site	No evidence of existing or infilled basements was observed.
Made ground, earthworks and quarrying	None observed.
Potentially unstable slopes on or close to site	None observed.
Buried and overhead services present	Overhead services were noted along the northern boundary.
Environmental characteristics	

Feature	Description
Underground/ above ground storage tanks and pipework	None observed.
Potentially hazardous materials storage and use	Various empty 25 L unlabelled containers were noted in the north western corner of the site.
Asbestos-containing materials	Hardcore making up the site entrance road has potential to contain asbestos although this is considered low.
Waste storage	None observed.
Fly-tipping	None observed.
Electricity sub-stations/ transformers	None observed on or close to site.
Evidence of possible land contamination on-site	None observed.
Potential off-site sources of ground contamination	None observed. (Upon review of historical maps potential sources were identified comprising former Gas Works and an Old Quarry (potentially infilled) which had been redeveloped at the time of the walkover)

No potentially significant land contamination or geotechnical issues were identified during the site reconnaissance survey.

2.4 Surrounding land uses

The Site is located in Deddington, within a predominantly residential setting. Immediate surrounding land uses are described in **Table 3**.

Table 3 Surrounding land uses

North	Large mature trees line the boundary with Castle Street / Clifton Road immediately north farm buildings and open agricultural farmland beyond.
East	Residential housing along the northern portion of the boundary with open undeveloped land beyond and along the southern portion.
South	Large mature trees line the boundary with open undeveloped partly agricultural land, beyond. The site of Deddington Castle is present immediately south of the site.
West	Residential housing along western boundary with the village of Deddington beyond.

2.5 Development plans

The Site is being proposed for residential development. At the time of preparing this report no proposed layout design had been provided to RSK for use in this report.

No details of the proposed ground levels have been provided therefore for the purpose of this report it has been assumed that the current levels will remain unchanged.

3 DESK-BASED ASSESSMENT

3.1 Site history

3.1.1 Historical development record

The development history of the site and surrounding area based upon assessment of historical plans and records is detailed in **Table 4**. The historical maps reviewed are shown within the environmental database report in **Appendix C**.

Table 4 Summary of historical development

Historical Land Use (on-site)	Area of site	Date from	Date to
Open undeveloped land	All	1880 - 1881	Present
Historical Land Use (off-site)	**Distance (m) and orientation**	**Date from**	**Date to**
Gas Works, including 2 No. Tanks	10 m north	1863	Pre 1919
Site of Deddington Castle, including extensive embanked land	10 m south	Pre 1880	Present
Allotment Gardens	75 m north east	1880 - 1881	1971 - 1972
Old Quarry - Potentially infilled by 1919	130 m north east	1800 - 1881	1919
Timber Yard	210 m south west	1800 - 1881	1919
Residential development	Adjacent east	1949	Present
Rifle Club	30 m south east	1971 - 1972	2010
Electrical Substation	220 m south west	1971 - 1972	Present
Relevant information sources: Historical OS maps ☒ Town plans ☒ Information from the Local Planning Authority ☒ Aerial photography ☒			
Note: Reference to published historical maps provides invaluable information regarding the land use history of the site, but historical evidence may be incomplete for the period pre-dating the first edition and between successive maps.			

3.1.2 Unexploded ordnance

A review of publicly available unexploded ordnance (UXO) risk maps indicates that the site is located in a low risk area with respect to wartime bombing, with no historical targets within 1km of the site (Zetica, 2018).

3.2 Information from environmental database report

Relevant environmental permits and incidents detailed within the environmental database report (see **Appendix C**) are summarised below in **Table 5**.

Table 5 Summary of environmental permits, landfills and incidents

Data type	Entries on-site	Entries <250m or >250m from site of relevance	Details
Agency and Hydrological			
Environmental permits – incorporating Integrated Pollution Prevention and Control, Integrated Pollution Controls, Local Authority Integrated Pollution Prevention and Control	0	0	
Enforcement and prohibition notices	0	0	
Pollution incidents to controlled waters	0	0	
Prosecutions relating to controlled waters	0	0	
Substantiated pollution incident register	0	0	
Water Industry Act referrals	0	0	
Discharge consents			
Registered radioactive substances	0	0	
Landfill and Waste			
Active landfills	0	0	
Historic / closed landfills	0	1	Potentially infilled quarry ~130 m north east. No longer noted on mapping by 1919.
Other waste management licences	0	0	
Hazardous Substances			
Control of Major Accident Hazards (COMAH) sites	0	0	
Explosives sites	0	0	

Data type	Entries on-site	Entries <250m or >250m from site of relevance	Details
Notification of Installations Handling Hazardous Substances (NIHHS)	0	0	
Planning hazardous substance consents/ enforcements	0	0	
Industrial Land Uses			
Contaminated land Part 2A register entries and notices	0	0	
Contemporary trade directory entries	0	8	215 m south west - Electrical Substation; 223 m east - Construction and Tool Hire, Distribution and Haulage, Access Equipment, Container Storage and Lifting and Handling Equipment; 225 m north east - Lubricants and lubrication equipment; 233 m north east - Works or factories.
Fuel station entries	0	0	
Note: Entries have only been included within the table where they are located within a 250m radius of the site or, where they fall outside of this radius but are considered to comprise a significant entry.			

In summary, items that have been identified to represent an on-going potential source of contamination that could affect the site comprise:

- Gas Works - 10 m north; and,
- Old Quarry (potentially infilled), 130 m north east.

These entries have been carried forward for consideration within the initial conceptual site model contained in **Section 5**.

3.3 Information from regulatory authorities

3.3.1 Planning records

No current or historic planning records are held by the Local Authority Planning Department pertaining to the site.

3.3.2 Site services

Buried utility services and their backfill can provide preferential pathways for gas, vapour or groundwater to migrate along to another part of the site or to a receptor. They can also represent significant constraints to development.

Service plans obtained from utility companies either by RSK or the client are contained in **Appendix E**; these are dated August to November 2018. Buried services present on-site or located adjacent to site boundaries that could represent a pathway for migration of groundwater and gases/ vapours comprise:

- SGN - Low Pressure Mains, running along the north and west boundaries; and,
- Scottish & Southern Electricity Networks - High Voltage Mains, single point adjacent to the northern boundary.

3.4 Site geology

3.4.1 Anticipated and encountered geological sequence

A trial pit investigation was undertaken to facilitate infiltration testing on the 4th December 2018, published records (British Geological Survey, 2018) for the area and the trial pit logs indicate the geology of the site to be characterised by the succession recorded in **Appendix G Table 6**.

Table 6 Site geology

Strata	BGS Description	In-situ description	Estimated thickness	Aquifer designation*
Topsoil	N/A	Brown slightly sandy slightly gravelly silty CLAY.	0.30 m (proved)	N/A
Marlstone Rock Formation	Ferruginous Limestone and Ironstone	Orangish brown slightly sandy slightly gravelly silty CLAY over strong brownish grey LIMESTONE	10 m	Secondary (A) Aquifer
Relevant information sources: BGS Geoindex ☒ BGS borehole logs ☒				

No Made Ground or visual or olfactory evidence of contamination was encountered during the intrusive investigation.

3.4.2 Radon

The environmental database report provides an assessment of site-specific radon risk. The report indicates that between 10 and 30 % of properties are above the Action Level of 200 Bq m^{-3} and that full radon protective measures are required within new dwellings at the site.

The site-specific assessment within the environmental database report is at a higher resolution and therefore provides greater detail than that publicly available in the indicative radon atlas at www.ukradon.org.

3.5 Mining and quarrying

Evidence has been sought to identify any mining, quarrying, landfilling and land reclamation operations, past and present, which have taken place within 500m of the site.

3.5.1 Coal mining area

No evidence of coal mining was found within 500 m of the site.

3.5.2 Areas of other (rock or mineral) mining

Johnson Poole and Bloomer (JPB), have evidence that mining activities have occurred within 1 km of the site. This mining area is not represented on mapping and is not held by The Coal Authority.

3.5.3 Brine

Records for the area of the site, presented within the environmental database, have confirmed that the site is not within an area affected by brine subsidence.

3.5.4 Quarrying

Historical mapping provided evidence that quarrying has occurred within 250 m of the site. An old quarry, ~130 m north east, was noted on mapping from 1880 - 1881, no evidence of the quarry was present within mapping from 1919, suggesting that the quarry was infilled between these dates. The quarry has since been redeveloped with residential housing.

3.6 Hydrogeology

A summary of the hydrogeological setting of the site, with respect to the anticipated geological sequence set out in **Section 3.4** is presented below in **Table 7**.

Table 7 Summary of hydrogeological setting

Condition	Description
Aquifer characteristics	The site is underlain by a secondary (A) aquifer relating to the Marlstone Rock Formation. The presence of low permeability clay at relatively shallow depths beneath the site, while restricting downwards migration, may increase the potential for lateral migration of shallow groundwater (and therefore mobile contamination, if present).
Depth to groundwater and flow	The anticipated depth to the groundwater table is in the order of 3 - 3.5 m below ground level estimated from BGS logs. Shallow groundwater in the site area is anticipated to flow in a south easterly direction, i.e. towards and in the direction of flow of the River Cherwell.
Rising groundwater levels	Not applicable

Condition	Description
Groundwater recharge/ attenuation	Most of the site is currently unsurfaced and will therefore drain to ground.
Historical implications for hydrogeology	It is assumed that surface water from the site runs off to the south east.
Licensed groundwater abstractions	The environmental database report indicates that there 5 No. currently licensed groundwater abstractions within a 2km radius of the site, none of which are public water supply boreholes.
Source protection zones	Information available on the MAGIC website indicates that the site does not lie within a currently designated groundwater Source Protection Zone (SPZ).

3.7 Hydrology

A summary of the hydrology within the site area is summarised in **Table 8**.

Table 8 Summary of hydrology in site area

Condition	Description
Surface watercourses/ features	The nearest identified surface features to the site are the 2 No. drainage ditches located approximately 244 m to the south east and south west of the site.
Surface water abstractions	There are no surface water abstractions identified by the environmental database, within a 2km radius of the site.
Site drainage	It is assumed that surface water from the site runs off to the south east.
Preliminary flood risk assessment	The indicative floodplain map for the area, shows that the site lies within Flood Zone 1. The risk of flooding each year has been assessed by the EA as very low – i.e. less than 0.1%. A flood risk assessment (FRA) is not required for the site.

3.8 Sensitive land uses

Table 9 provides a summary of any environmentally sensitive areas identified within the vicinity of the site based on the environmental database report.

Table 9 Environmentally sensitive areas

Feature	Present within 500m of site?	Details	Likely pathways from site?
International designations – Ramsar wetland, Special Area of Conservation (SAC), Special Protection Area (SPA)	No	-	No
National designations – Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR), ancient woodland	No	-	No
Local designations – Local Nature Reserve, Site of Importance for Nature Conservation (SINC)	No	-	No
Nearest high sensitivity development, e.g. residential	n/a	Residential development immediately east and west of the site.	Yes

4 INITIAL CONCEPTUAL SITE MODEL

In line with CLR11 (Environment Agency, 2004) and BS 10175: 2011 + A2 2017 (BSI, 2017), RSK has used information in the preceding sections to identify sources of contaminants, receptors that may be impacted and plausible linking pathways. Where all three are present this is termed a potentially complete contaminant linkage and a qualitative risk estimation is made.

4.1 Potential soil, soil vapour and groundwater linkages

4.1.1 Potential sources of contamination

Potential sources of soil and groundwater contamination identified from current activities and the history of the site and surrounding area are presented in **Table 10**. Ground gas sources are addressed in the next section.

Table 10 Potential sources of soil and groundwater contamination

Potential sources	Contaminants of concern	Current or historical?
Off-site		
Gasworks, 10m north	Coal tars, PAHs, toxic and phytotoxic metals, inorganics e.g. cyanide, sulphide., sulphate, ammonia, volatile organic compounds e.g. BTEX, semi-volatile organic compounds (SVOCs) e.g. phenols, asbestos	Historical
Old Quarry - potentially infilled, 130 m north east	Ground gases	Current/ historical

4.1.2 Sensitive receptors and linking pathways

Sensitive receptors identified at or in the vicinity of the site that could be affected by the potential sources identified above comprise:

- future site users – residential users [Inhalation exposure with soil vapour]
- future site users – public open space users [Inhalation exposure with soil vapour]
- future buildings and services [direct contact with contaminated groundwater and chemical attack]
- existing / future vegetation [direct contact with contaminated groundwater and root uptake leading to phytotoxicity]
- groundwater in secondary (A) aquifer bedrock deposits [leaching from soils/ percolation to aquifer/ lateral migration of dissolved phase]

Potential linking pathways are show in brackets for each item above.

Please note that construction workers and future maintenance workers have not been identified in the conceptual model as receptors because risks are considered to be managed through health and safety procedures according to the CDM Regulations.

4.2 Potential ground gas linkages

4.2.1 Ground gas generation potential

Potential ground gas sources identified for the site and surrounding are shown in **Table 11**.

Table 11 Potential ground gas sources

Potential sources	Ground gas generation potential *	Additional information
On-site		
Natural carbonate soil and strata such as chalk and limestone	Very low	Limestone geology present on site
Natural soil with a high degradable organic content	Low	Site is agricultural land
Off-site		
Potentially infilled Quarry, 130 m north east	Low	Unknown infill, if present, could produce harmful ground gases
Note: * ground gas generation potential in accordance with BS8576 Figure 6		

Given the anticipated ground conditions set out above, no significant potential sources of ground gas generation have been identified within 250 m of the site.

4.2.2 Preferential pathways for ground gas migration

Credible preferential pathways potentially connecting the source and receptor through vertical and lateral migration are:

- geology of the Marlstone Rock Formation which is likely to be permeable, due to fractures in the ironstone and limestone;
- building foundations, piled foundations and vibro-stone columns;
- construction joints and cracks within building structure; and,
- utility routes and service penetrations into buildings.

4.2.3 Sensitive receptors and linking pathways

Sensitive receptors identified at or in the vicinity of the site that could be affected by the potential ground gas sources identified above comprise:

- future site users – residential users [migration and ingress of ground gases into buildings, build-up in confined spaces and explosion/ asphyxiation]

- current / adjacent site users – residential users [migration and ingress of ground gases into buildings, build-up in confined spaces and explosion/ asphyxiation]
- future buildings and services [migration and ingress of ground gases into buildings, build-up in confined spaces and explosion].

The assessment has identified receptors to include building structures and proposed end-users.

Construction workers have not been identified as receptors for the purposes of this assessment. Risks may still be present to construction workers especially where works include the entry into excavations within the ground. Construction workers should undertake appropriate risk assessments and risks should be managed through health and safety procedures and the use of PPE.

4.3 Preliminary risk assessment

The preliminary risk assessment findings and potentially complete contaminant linkages are shown in **Table 12** overleaf. The risk classification based on the combination of hazard consequence and probability using a risk matrix from CIRIA C552 (Rudland et al., 2001), a summary of which is included in **Appendix G**.

Table 12 Risk estimation for potentially complete contaminant linkages

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
Off site						
Gasworks, 10m north (*c.*1880 - 1919)	Future site occupants	Inhalation of soil vapour	Unlikely	Medium	Low	Due to the age of the source the likelihood of contaminants, such as ground gas and VOCs, being generated is considered low. No evidence of fill being imported to site during demolition or redevelopment of Gas Works.
Old Quarry, 130 m north east (*c.*1880 - 1919)	Future site occupants	Inhalation of soil vapour	Unlikely	Medium	Low	Quarry was excavated before the date of the first historic map. Quarry was no longer noted by 1919 and is assumed to have been infilled. Quarry is not up likely migration gradient. Development of Quarry by 1971 - 1972 suggests the area was not infilled with unstable or detrital matter.

Risk matrix		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low

No potentially complete contaminant linkages with a potential risk of moderate to low or higher have been identified within the initial CSM.

4.4 Data gaps and uncertainties

Key data gaps and uncertainties identified in the CSM at desk study stage include:

- gaps in available historical OS maps: 1900 - 1919, 1923 - 1949 and 1949 - 1971;
- there are no previous investigations available for the site, however, the trial pit investigation carried out by RSK did not encountered any Made Ground deposits;
- no information on actual concentrations of contaminants in soil and groundwater or ground gas at this stage; and,
- groundwater depth and flow direction are conceptual at this stage.

5 CONCLUSIONS

5.1 Geo-environmental assessment

The results of the preliminary risk assessment suggest that relevant contaminant linkages appear to be absent based on the data available.

The potential for ground gas production on site is considered low, with a low potential for lateral migration from sources in the surrounding area.

The limited soakaway investigation, although not targeted towards a full site assessment, did not encounter any localised sources of contamination. While contamination was not encountered, due to the limited scope of the site investigation a more comprehensive site investigation is recommended if the site to be considered for residential development.

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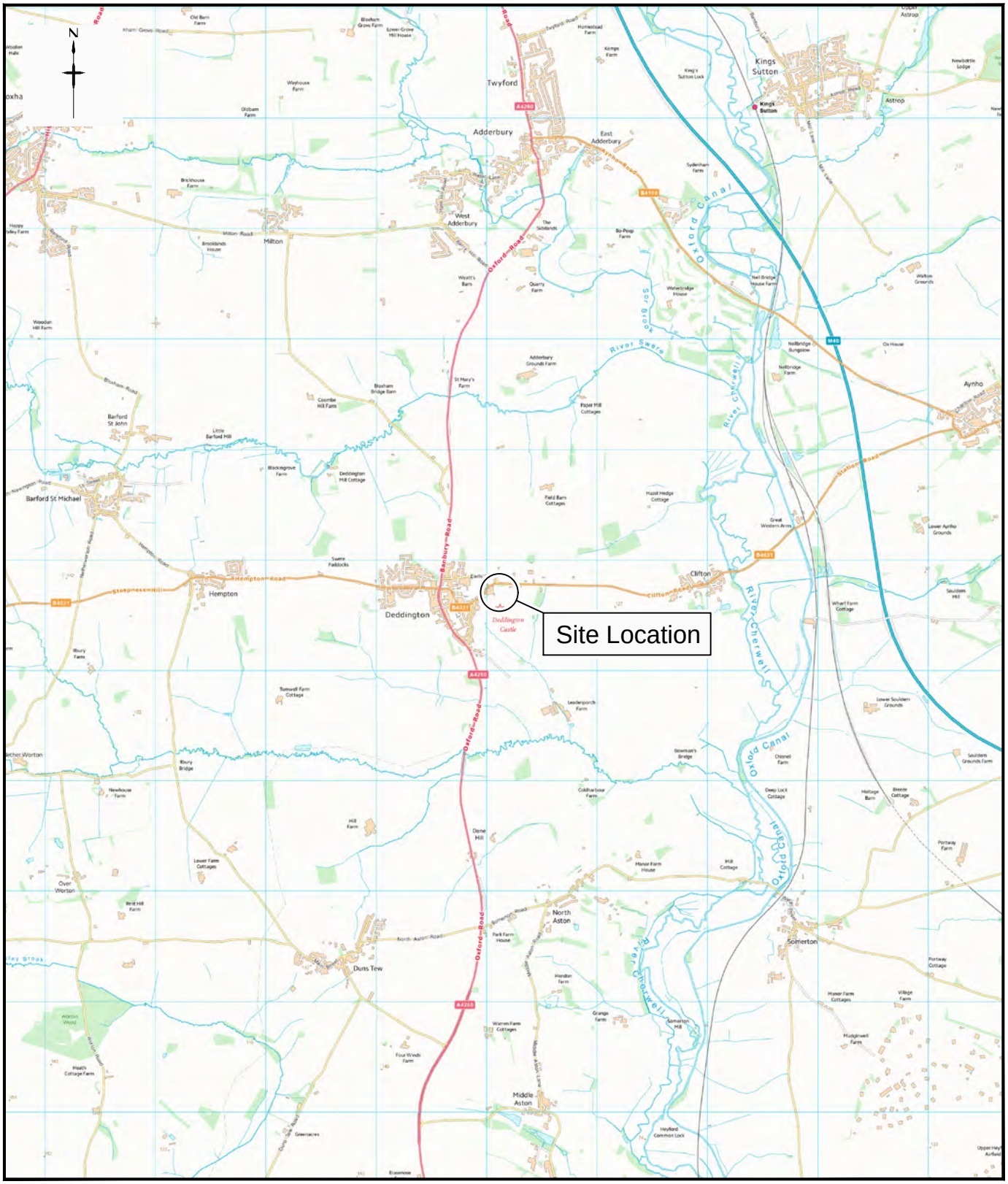
FIGURES



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Client: BLUE CEDAR HOMES LIMITED

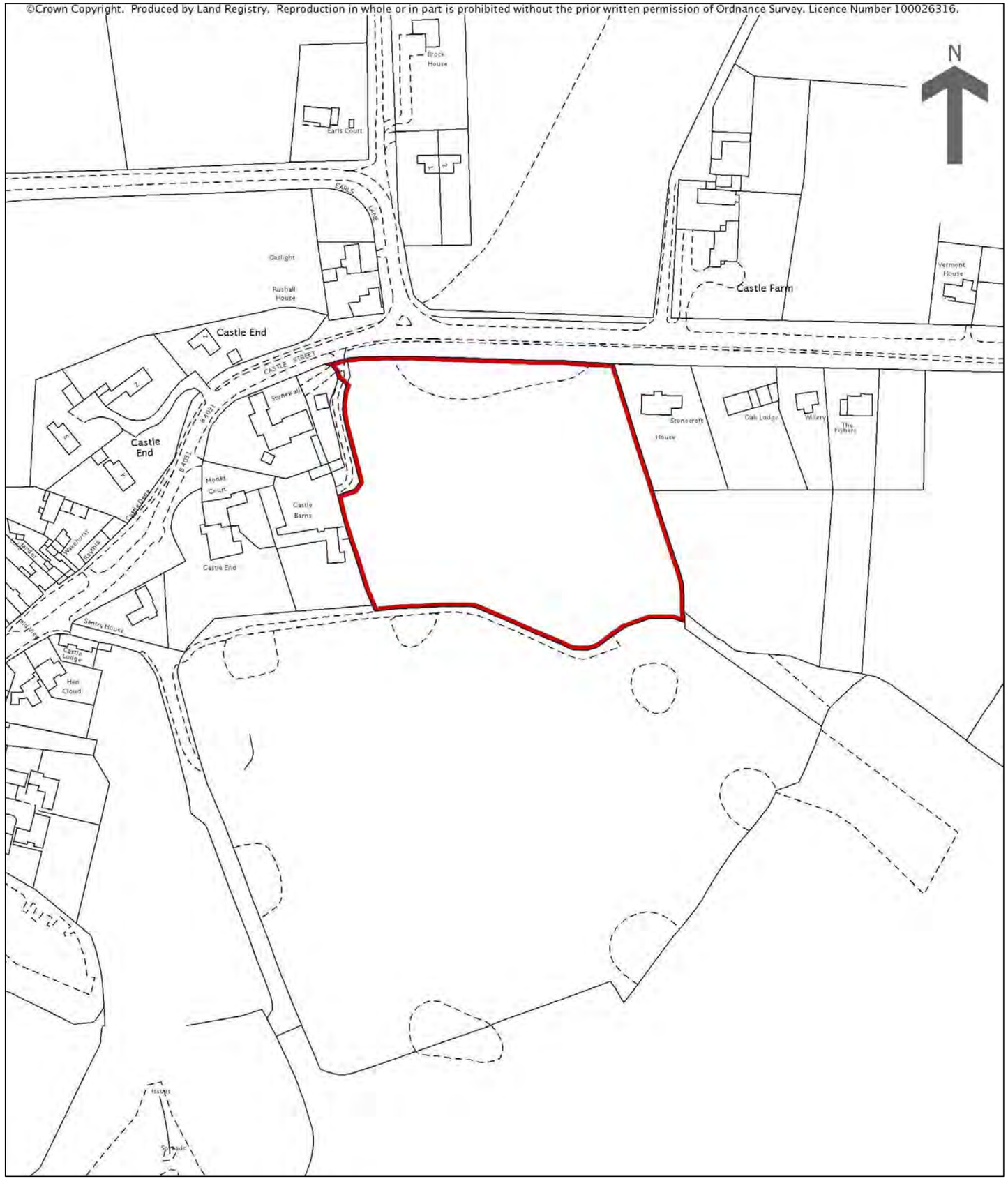
Project Title: CASTLE STREET, DEBBINGTON

Drawing Title: SITE LOCATION MAP

Rev	Drawn	Date	Checked	Date	Approved	Date
00	AP	13.12.18	AD	13.12.18	KF	13.12.18

Dimensions	Scale	Original Size
m	1:50,000	A4

Project Number	Drawing File	Drawing Number
314228 - R01 (00)	314228 - SLP.dwg	FIGURE 1



LEGEND

Site Boundary

Rev.	Date	Amendment	Drawn	Chkd.	Appd.

RSK

18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
United Kingdom

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Client

BLUE CEDAR HOMES LIMITED

Project Title

CASTLE STREET, DEBBINGTON

Drawing Title

SITE LAYOUT PLAN

Drawn	Date	Checked	Date	Approved	Date
AP	13.12.18	AD	13.12.18	KF	13.12.18

Scale	Orig Size	Dimensions
NTS	A3	m

Project No.	Drawing File
314228 - R01(00)	314228 (R01-00) Fig 2.dwg

Drawing No.	Rev.
FIGURE 2	P1

APPENDIX A
SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Blue Cedar Homes Limited (the "client") in accordance with the terms of a contract [RSK Group Standard Terms and Conditions] between RSK and the "client", dated December 2018. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.
2. Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.
4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials, unless specifically identified in the Services.
7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of information, including documentation, obtained from third parties and from the client on the history and usage of the site, unless specifically identified in the Services or accreditation system (such as UKAS ISO 17020:2012 clause 7.1.6):

    a. the Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely

    b. the Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection

    c. the Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services.

    RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and

including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on-site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on-site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

APPENDIX B
SUMMARY OF LEGISLATION AND POLICY RELATING TO CONTAMINATED LAND

Part IIA of the Environmental Protection Act 1990

Part IIA of the Environmental Protection Act 1990 (Part IIA) and its associated Contaminated Land Regulations 2000 (SI 2000/227), which came into force in England on 1 April 2000, formed the basis for the current regulatory framework and the statutory regime for the identification and remediation of contaminated land. Part IIA of the EPA 1990 defines contaminated land as '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 significant harm is being caused, or that there is significant possibility of significant harm being caused, or that pollution of controlled waters is being or is likely to be caused'. Controlled waters are considered to include all groundwater, inland waters and estuaries.

In August 2006, the Contaminated Land (England) Regulations 2006 (SI 2006/1380) were implemented, which extended the statutory regime to include Part IIA of the EPA as originally introduced on 1 April 2000, together with changes intended chiefly to address land that is contaminated by virtue of radioactivity. These have been replaced subsequently by the Contaminated Land (England) (Amendment) Regulations 2012, which now exclude land that is contaminated by virtue of radioactivity.

The intention of Part IIA is to deal with contaminated land issues that are considered to cause significant harm on land that is not undergoing development (see Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, April 2012). This document replaces Annex III of Defra Circular 01/2006, published in September 2006 (the remainder of this document is now obsolete).

Planning Policy

Contaminated land is often dealt with through planning because of land redevelopment. This approach was documented in Planning Policy Statement: Planning and Pollution Control PPS23, which states that it remains the responsibility of the landowner and developer to identify land affected by contamination and carry out sufficient remediation to render the land suitable for use. PPS23 was withdrawn early in 2012 and has been replaced by much reduced guidance within the National Planning Policy Framework (NPPF), reference ISBN: 978-1-4098-5302-2, July 2018.

The new framework has only limited guidance on contaminated land, as follows:

- *"planning policies and decisions should also ensure that:*
    - *the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;*
    - *after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and*

- *adequate site investigation information, prepared by a competent person, is presented".*

Water Resources Act (WRA)

The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 updated the Water Resources Act 1991, which introduced the offence of causing or knowingly permitting pollution of controlled waters. The Act provides the Environment Agency with powers to implement remediation necessary to protect controlled waters and recover all reasonable costs of doing so.

Water Framework Directive (WFD)

The Water Framework Directive 2000/60/EC is designed to:

- enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands that depend on the aquatic ecosystems
- promote the sustainable use of water
- reduce pollution of water, especially by 'priority' and 'priority hazardous' substances
- ensure progressive reduction of groundwater pollution.

The WFD requires a management plan for each river basin be developed every six years.

Groundwater Directive (GWD)

The 1980 Groundwater Directive 80/68/EEC and the 2006 Groundwater Daughter Directive 2006/118/EC of the WFD are the main European legislation in place to protect groundwater. The 1980 Directive is due to be repealed in December 2013. The European legislation has been transposed into national legislation by regulations and directions to the Environment Agency.

Priority Substances Directive (PSD)

The Priority Substances Directive 2008/105/EC is a 'Daughter' Directive of the WFD, which sets out a priority list of substances posing a threat to or via the aquatic environment. The PSD establishes environmental quality standards for priority substances, which have been set at concentrations that are safe for the aquatic environment and for human health. In addition, there is a further aim of reducing (or eliminating) pollution of surface water (rivers, lakes, estuaries and coastal waters) by pollutants on the list. The WFD requires that countries establish a list of dangerous substances that are being discharged and EQS for them. In England and Wales, this list is provided in the River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions 2010. In order to achieve the objectives of the WFD, classification schemes are used to describe where the water environment is of good quality and where it may require improvement.

Environmental Permitting Regulations (EPR)

The Environmental Permitting (England and Wales) Regulations 2010 provide a single regulatory framework that streamlines and integrates waste management licensing, pollution prevention and control, water discharge consenting, groundwater authorisations, and radioactive substances regulation. Schedule 22, paragraph 6 of EPR 2010 states: 'the regulator must, in exercising its

relevant functions, take all necessary measures - (a) to prevent the input of any hazardous substance to groundwater; and (b) to limit the input of non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater.'

APPENDIX C
ENVIRONMENTAL DATABASE REPORT

RSK

RSK, THE OLD SCHOOL, STILLHOUSE LANE,
BEDMINSTER,
BRISTOL, BS3 4EB

Groundsure Reference:	GS-5639749
Your Reference:	314228_Castle_Street_Deddington
Report Date	22 Nov 2018
Report Delivery Method:	Email - pdf

Enviro Insight

Address: 4, CASTLE STREET, DEDDINGTON, OX15 0TE

Dear Sir/ Madam,

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

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

Yours faithfully,

[redacted]

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**4, CASTLE STREET, DEDDINGTON, OX15 0TE**
Date:	**22 Nov 2018**
Reference:	**GS-5639749**
Client:	**RSK**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	05-May-2016
Grid Reference:	447155,231706
Site Size:	1.62ha

Report Reference: GS-5639749
Client Reference: 314228_Castle_Street_Deddington

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Overview of Findings

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Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	6	11	14
1.2 Additional Information – Historical Tank Database	0	4	0	2
1.3 Additional Information – Historical Energy Features Database	0	6	8	24
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	5
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	10	11

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

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

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	8	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

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

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	None identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	1	1	3
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	#250GWV#	#500GWV#	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	4	12	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

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

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	2

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

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Very Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Negligible
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	Full radon protective measures are necessary.

Section 10: Mining

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

Using this report

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

1. Historical Industrial Sites

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

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

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

9. Natural Hazards

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

10. Mining

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

11. Contacts

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

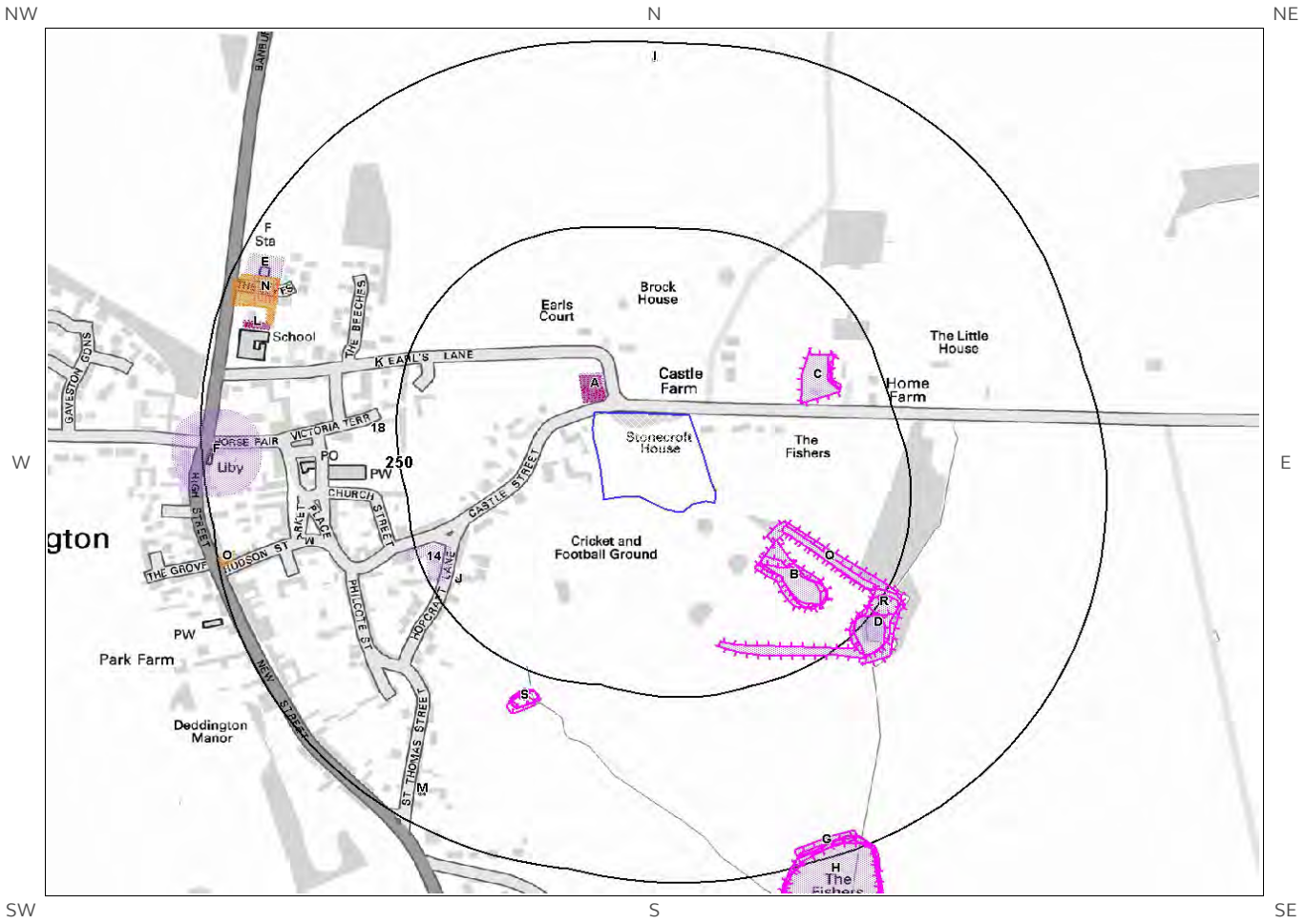
Note: Maps

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

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

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

1. Historical Land Use



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

Site Outline

Industrial Land Use

Potentially Infilled Land

250
500
Search Buffers (m)

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

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 31

ID	Distance [m]	Direction	Use	Date
1A	17	N	Gas Works	1900
2A	19	N	Gas Works	1881
3A	19	N	Gasometer	1900
4A	29	N	Gasometer	1900
5A	30	N	Gasometer	1881
6A	48	N	Unspecified Tank	1881
7P	81	SE	Unspecified Pits	1923
8B	93	SE	Unspecified Pit	1880
9Q	94	SE	Unspecified Pit	1880
10B	96	SE	Unspecified Ground Workings	1923
11B	99	SE	Unspecified Ground Workings	1949
12C	141	E	Unspecified Quarry	1881
13C	184	E	Unspecified Ground Workings	1900
14	207	W	Timber Yard	1880
15D	237	SE	Unspecified Ground Workings	1880
16R	238	SE	Unspecified Pit	1949
17D	239	SE	Unspecified Pit	1949
18	271	W	Unspecified Tank	1881
19F	424	W	Police Station	1881
20N	431	W	Garage	1982
21E	440	NW	Fire Station	1993
22E	452	NW	Fire Station	1982
23F	456	W	Unspecified Tank	1881
24G	472	S	Unspecified Pits	1993
25G	472	S	Unspecified Pits	1982
26H	480	S	Unspecified Ground Workings	1923
27H	481	S	Unspecified Ground Workings	1923
28H	485	S	Unspecified Ground Workings	1880
29H	487	S	Unspecified Ground Workings	1993

30H	487	S	Unspecified Ground Workings	1982
31H	487	S	Unspecified Ground Workings	1949

1.2 Additional Information – Historical Tank Database

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

Records of historical tanks within 500m of the search boundary: 6

ID	Distance (m)	Direction	Use	Date
32A	15	N	Gas Works	1898
33A	15	N	Gas Works	1880
34A	19	NW	Gasometers	1898
35A	30	N	Gasometer	1880
36I	474	N	Unspecified Tank	1972
37I	475	N	Unspecified Tank	1994

1.3 Additional Information – Historical Energy Features Database

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

Records of historical energy features within 500m of the search boundary: 38

ID	Distance (m)	Direction	Use	Date
38A	15	N	Gas Works	1898
39A	15	N	Gas Works	1880
40A	19	NW	Gasometers	1898
41A	19	N	Old Gas House	1994
42A	23	N	Old Gas House	1971
43A	30	N	Gasometer	1880
44J	214	SW	Electricity Substation	1971
45J	214	SW	Electricity Substation	1978
46J	214	SW	Electricity Substation	1995
47J	214	SW	Electricity Substation	1994
48J	214	SW	Electricity Substation	1996
49J	214	SW	Electricity Substation	1995
50J	215	SW	Electricity Substation	1991
51J	215	SW	Electricity Substation	1987
52K	279	W	Electricity Substation	1995

53K	279	W	Electricity Substation	1994
54K	279	W	Electricity Substation	1996
55K	279	W	Electricity Substation	1995
56K	279	W	Electricity Substation	1978
57K	279	W	Electricity Substation	1971
58K	282	W	Electricity Substation	1987
59K	282	W	Electricity Substation	1991
60L	429	W	Electricity Substation	1987
61L	429	W	Electricity Substation	1991
62L	453	W	Electricity Substation	1978
63L	453	W	Electricity Substation	1971
64L	454	W	Electricity Substation	1995
65L	454	W	Electricity Substation	1994
66L	454	W	Electricity Substation	1996
67L	454	W	Electricity Substation	1995
68M	455	SW	Electricity Substation	1995
69M	455	SW	Electricity Substation	1994
70M	455	SW	Electricity Substation	1996
71M	455	SW	Electricity Substation	1995
72M	456	SW	Electricity Substation	1971
73M	456	SW	Electricity Substation	1978
74M	458	SW	Electricity Substation	1991
75M	458	SW	Electricity Substation	1987

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

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

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 5

ID	Distance (m)	Direction	Use	Date
76N	428	W	Garage	1978
77N	431	W	Garage	1971
78N	434	W	Garage	1987

79O	476	W	Garage	1995
80O	477	W	Garage	1995

1.6 Historical military sites

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

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

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 21

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

ID	Distance(m)	Direction	Use	Date
81P	81	SE	Unspecified Pits	1923
82B	93	SE	Unspecified Pit	1880
83Q	94	SE	Unspecified Pit	1880
84B	96	SE	Unspecified Ground Workings	1923
85B	99	SE	Unspecified Ground Workings	1949
86C	141	E	Unspecified Quarry	1881
87C	184	E	Unspecified Ground Workings	1900
88D	237	SE	Unspecified Ground Workings	1880
89R	238	SE	Unspecified Pit	1949
90D	239	SE	Unspecified Pit	1949
91S	273	S	Pond	1923
92S	275	S	Pond	1923
93S	283	S	Pond	1949
94G	472	S	Unspecified Pits	1993
95G	472	S	Unspecified Pits	1982
96H	480	S	Unspecified Ground Workings	1923
97H	481	S	Unspecified Ground Workings	1923
98H	485	S	Unspecified Ground Workings	1880
99H	487	S	Unspecified Ground Workings	1982
100H	487	S	Unspecified Ground	1993

			Workings	
101H	487	S	Unspecified Ground Workings	1949

2. Environmental Permits, Incidents and Registers Map

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

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site: 0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations: 0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site: 0

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site: 0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: 0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

3

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

ID	Distance (m)	Direction	NGR	Details	
1A	195	W	446880 231810	Incident Date: 05-Apr-2002 Incident Identification: 69229 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Damage to Buildings Vehicles and Vegetation	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
2A	195	W	446880 231810	Incident Date: 05-Apr-2002 Incident Identification: 69229 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Damage to Buildings, Vehicles and Vegetation	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
3A	195	W	446880 231810	Incident Date: 05-Apr-2002 Incident Identification: 69229 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: "Damage to Buildings, Vehicles and Vegetation"	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

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

0

Database searched and no data found.

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

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map

Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

3.2 Other Waste Sites

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

0

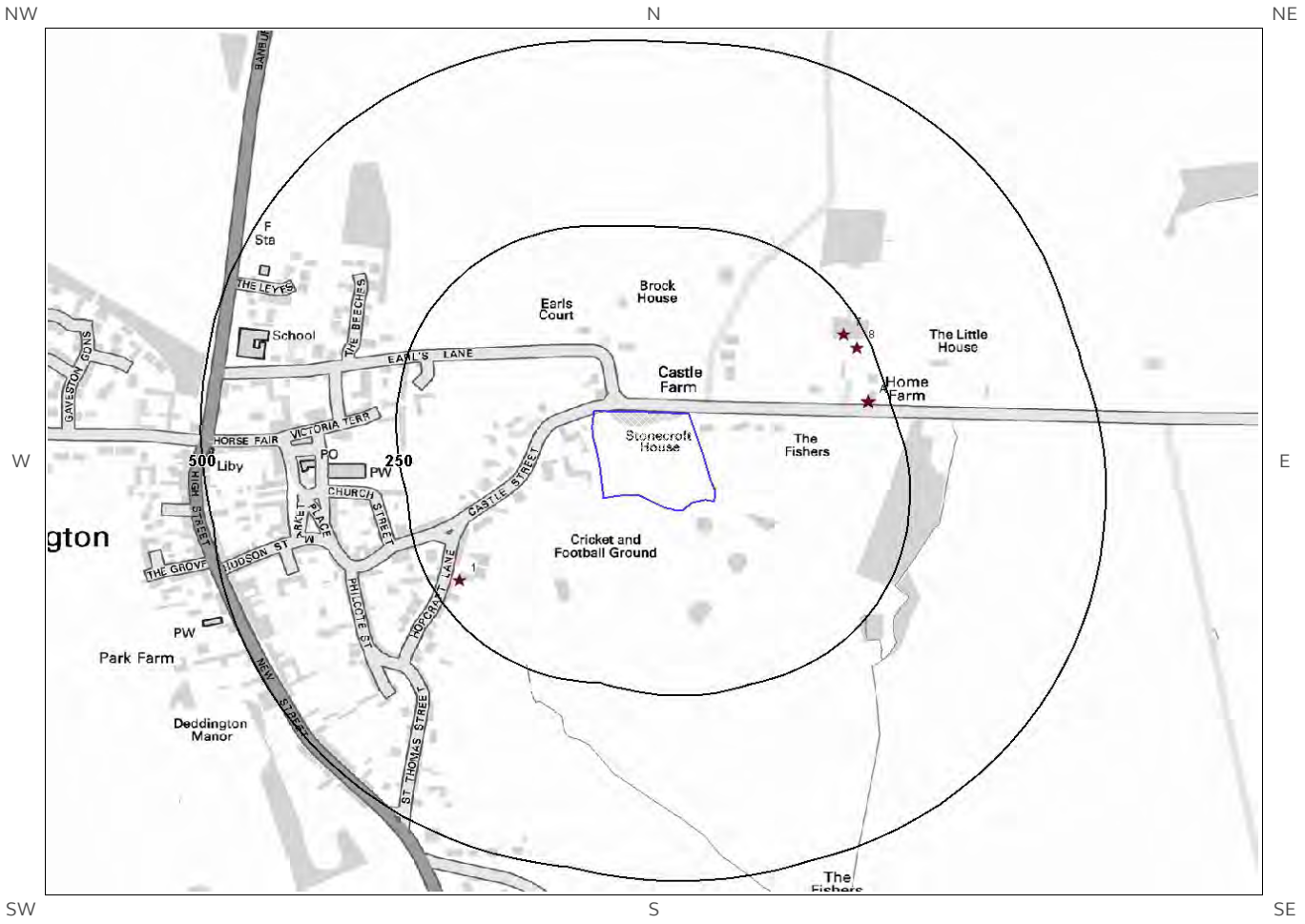
Database searched and no data found.

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

0

Database searched and no data found.

4. Current Land Use Map



Site Outline

Search Buffers (m)
250
500

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 8

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	215	SW	Electricity Sub Station	446901 231550	Oxfordshire, OX15	Electrical Features	Infrastructure and Facilities
2A	223	E	M G Scaffolding Oxford Ltd	447423 231791	Home Farm, Clifton Road, Deddington, Banbury, Oxfordshire, OX15 0TP	Construction and Tool Hire	Hire Services
3A	223	E	Border Shipping	447423 231791	Home Farm, Clifton Road, Deddington, Banbury, Oxfordshire, OX15 0TP	Distribution and Haulage	Transport, Storage and Delivery
4A	223	E	E S C A UK Services Ltd	447423 231791	Home Farm Works, Clifton Road, Deddington, Banbury, Oxfordshire, OX15 0TP	Access Equipment	Industrial Products
5A	223	E	Containanstor	447423 231791	Home Farm Works, Clifton Road, Deddington, Banbury, Oxfordshire, OX15 0TP	Container and Storage	Transport, Storage and Delivery
6A	223	E	A & R Handling	447423 231791	Home Farm Works, Clifton Road, Deddington, Banbury, Oxfordshire, OX15 0TP	Lifting and Handling Equipment	Industrial Products
7	225	NE	Kanady	447392 231882	Homefarm Works, Clifton Road, Deddington, Banbury, Oxfordshire, OX15 0TP	Lubricants and Lubricating Equipment	Industrial Products
8	233	NE	Works	447409 231864	Oxfordshire, OX15	Unspecified Works Or Factories	Industrial Features

4.2 Petrol and Fuel Sites

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

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

---

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

5.3 Bedrock and Solid Geology

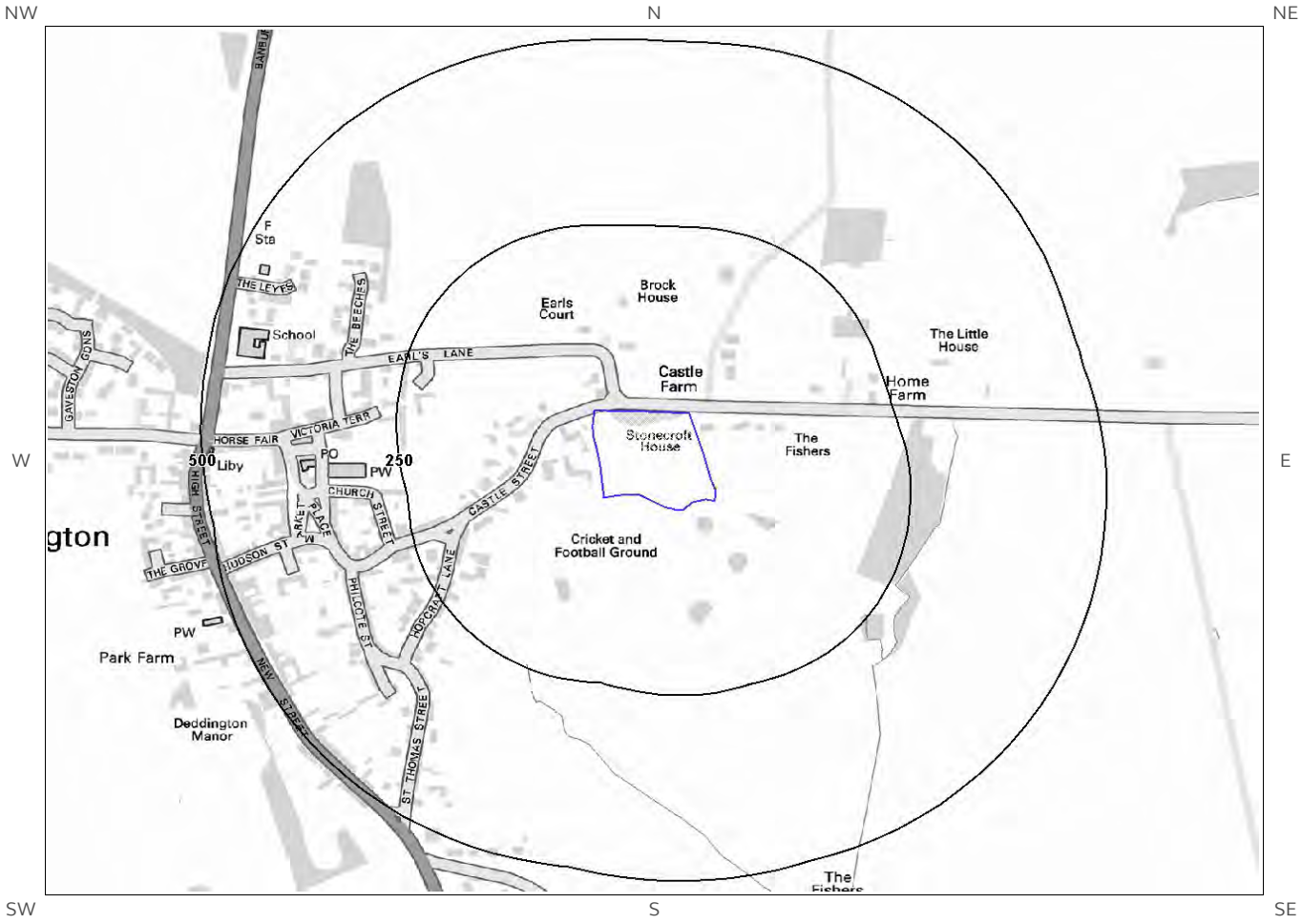
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
MRB-FLIR	MARLSTONE ROCK FORMATION	FERRUGINOUS LIMESTONE AND IRONSTONE

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

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



Site Outline

250 — Search Buffers (m)
500 —

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

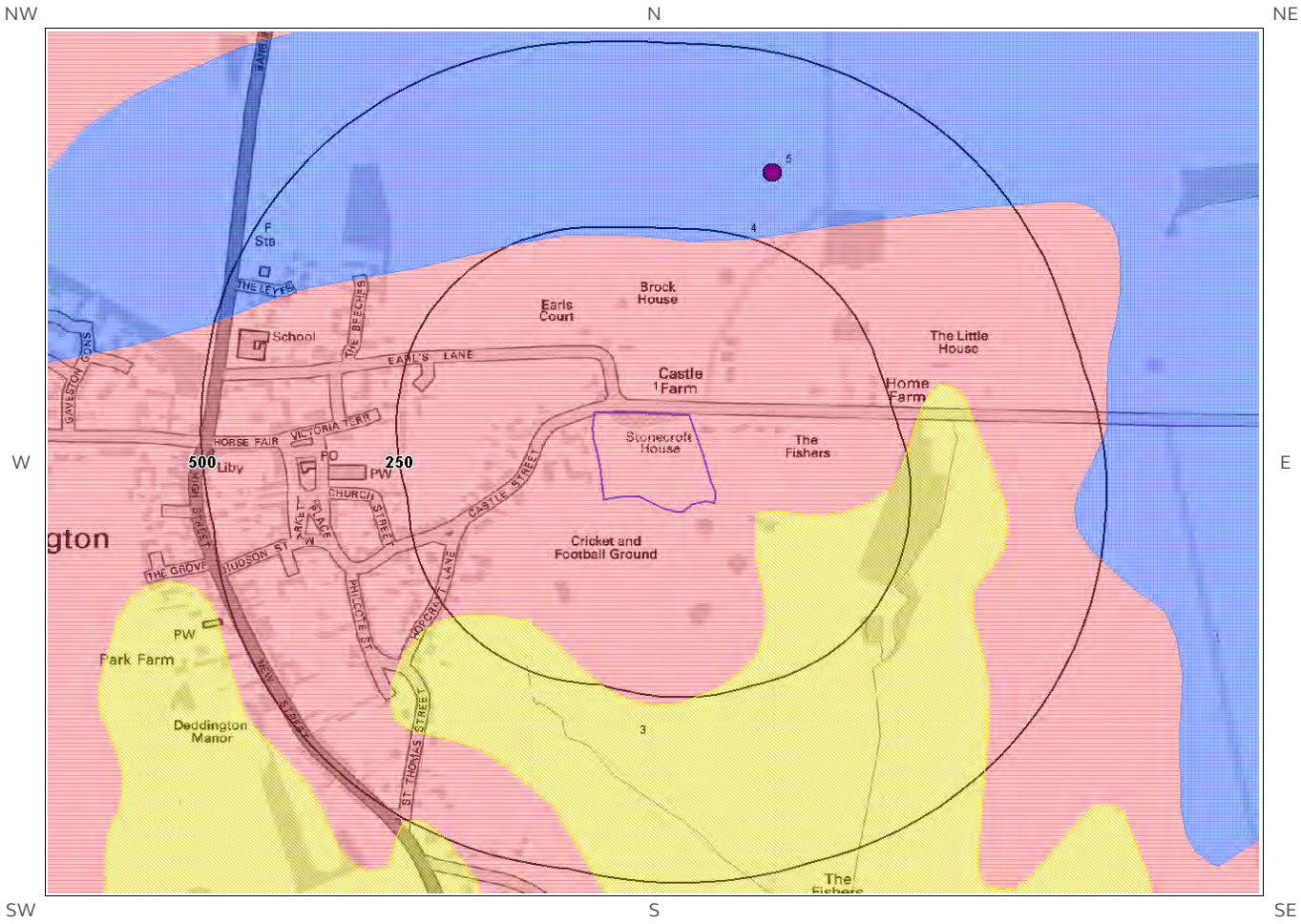
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

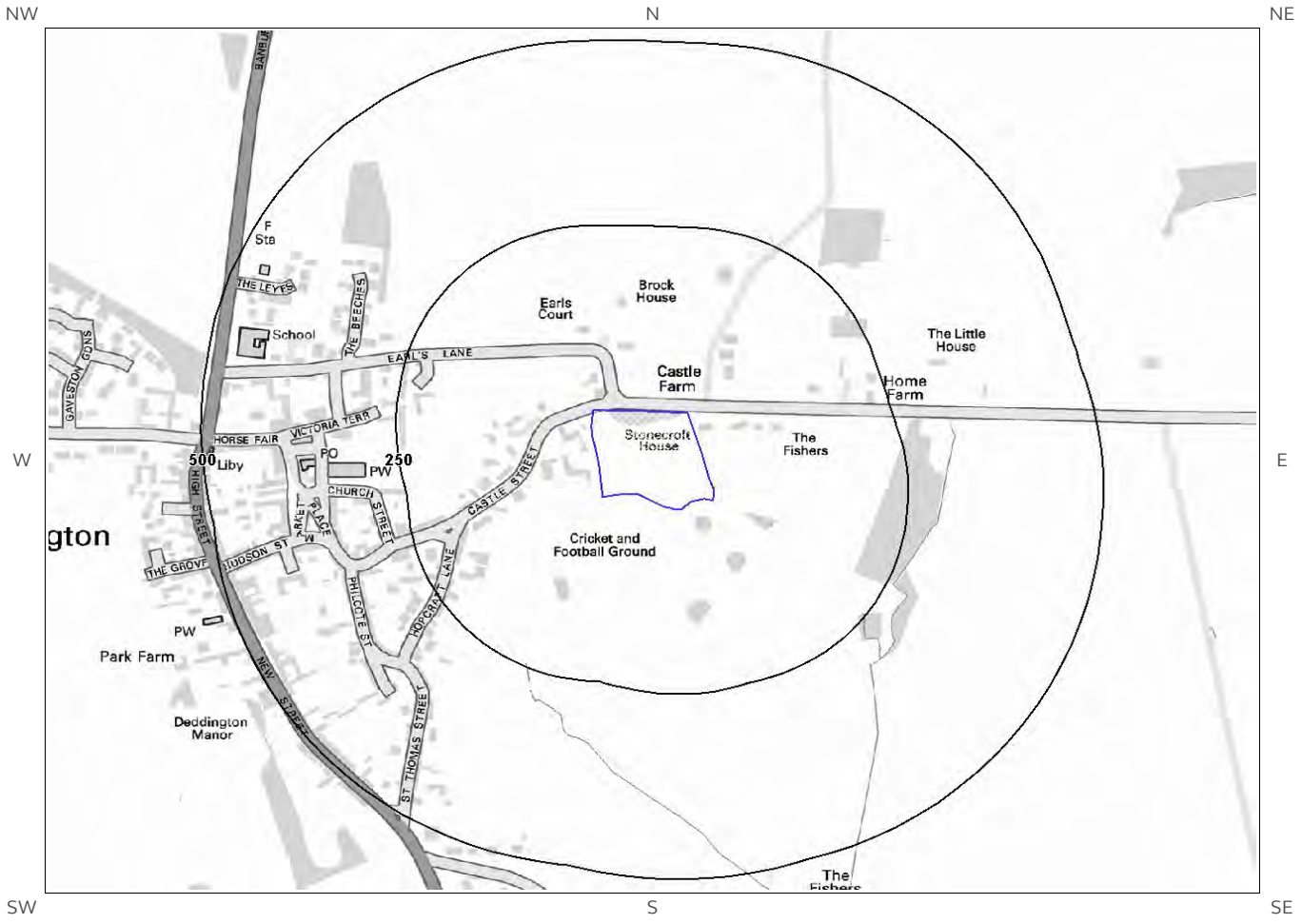
Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licences



Site Outline
250
500
Search Buffers (m)
Principal Aquifer
Secondary (A) Aquifer - Permeable Layers
Secondary (B) Aquifer - Lower Permeability Layers
Groundwater Abstraction Licence
Secondary Aquifer - Undifferentiated Layers
Unproductive
Unknown (lakes and landslip)
Surface Water Abstraction Licence

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



Site Outline

250 Search Buffers (m)
500

Source Protection Zone 1 - Inner Catchment

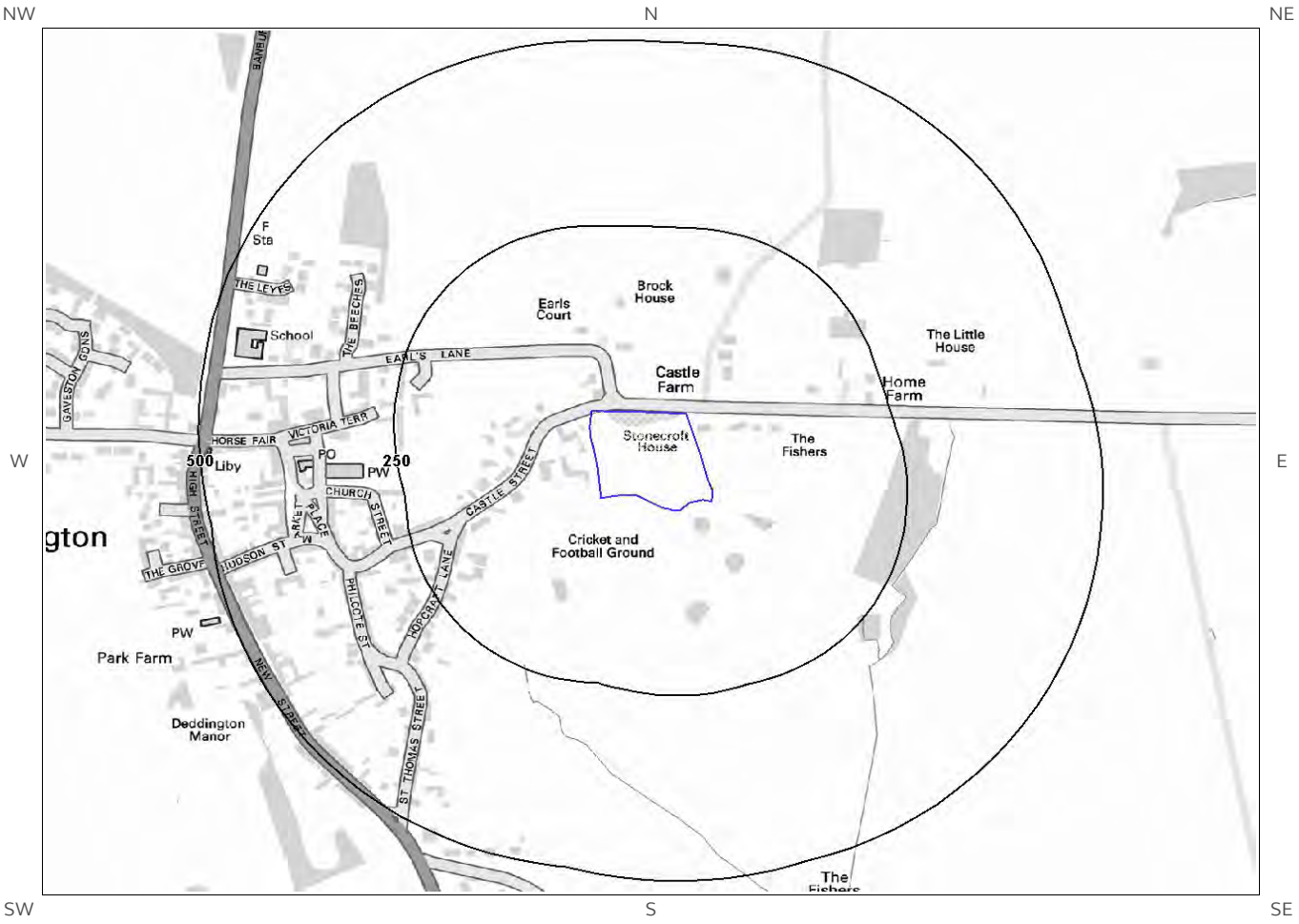
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Site Outline

Potable Water Abstraction Licence

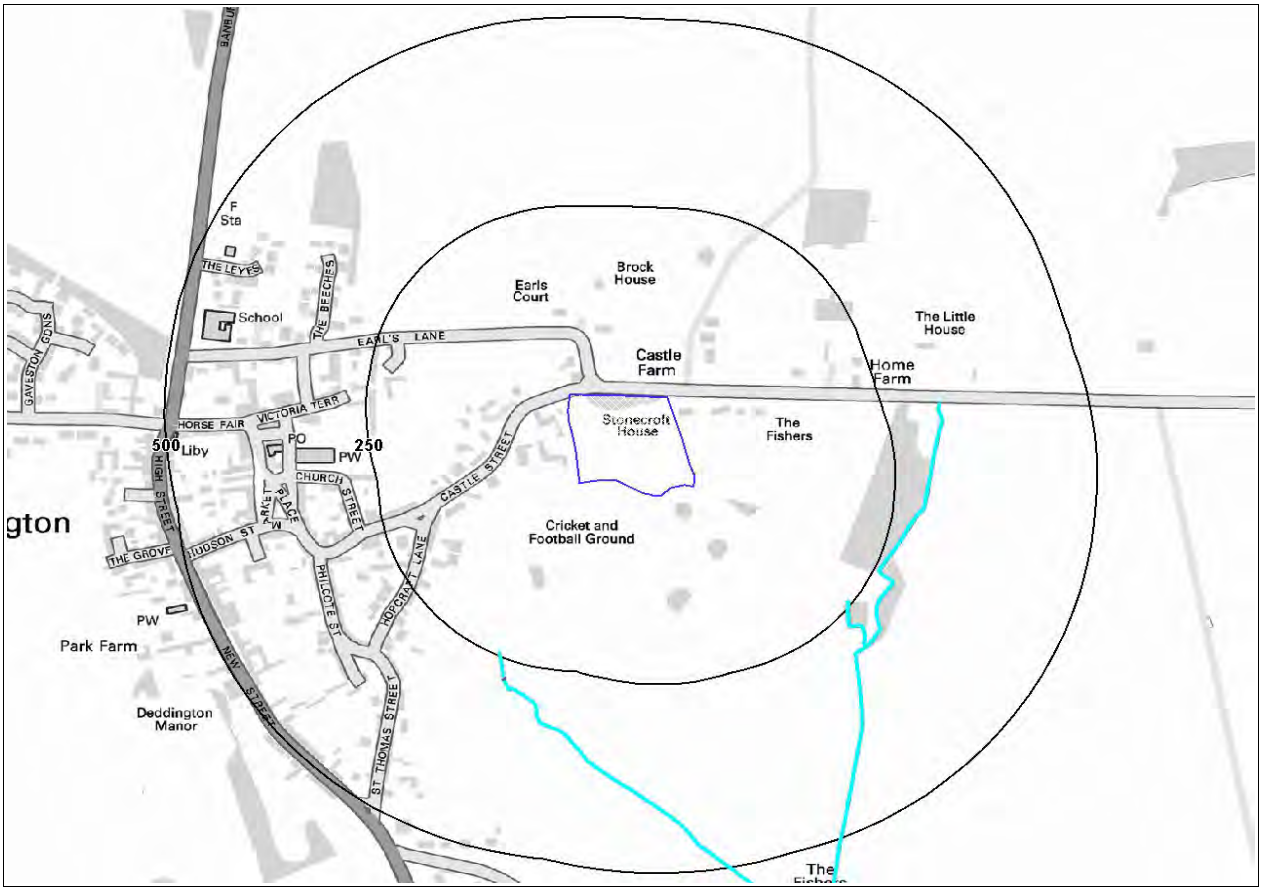
250
500
Search Buffers (m)

6e. Hydrology – Watercourse Network and River Quality

NW N NE

W E

SW S SE



Site Outline

250 500 Search Buffers (m)

Tidal River

Inland River

Underground or Elevated Tidal River

Underground or Elevated Inland River

Foreshore

General Quality Assessment: Chemistry

Canal

Underground or Elevated Canal

Lock or Flight of Locks

Lake, Reservoir, or Marsh

Drain or Transfer

General Quality Assessment: Biology

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

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

Database searched and no data found.

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

6.2 Aquifer within Bedrock Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
3	56	E	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	234	N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site — Identified

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

ID	Distance (m)	Direction	NGR	Details	
5	342	N	447300 232100	Status: Historical Licence No: 28/39/14/0080 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: CASTLE FARM, DEDDINGTON (A) Data Type: Point Name: NOBBS	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/11/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/03/1991 Version End Date:
Not shown	625	N	447200 232400	Status: Historical Licence No: 28/39/14/0054 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: EARLS FARM, DEDDINGTON Data Type: Point Name: C F FULLER & SON (DEDDINGTON) LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/02/1992 Version End Date:
Not shown	1629	N	447300 233400	Status: Historical Licence No: 28/39/14/0066 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: THE GROUNDS FAR, ADDERBURY (D) Data Type: Point Name: STILGOE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/09/1992 Version End Date:
Not shown	1928	N	447300 233700	Status: Historical Licence No: 28/39/14/0066 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: THE GROUNDS FARM, ADDERBURY (A) Data Type: Point Name: STILGOE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/09/1992 Version End Date:
Not shown	1936	N	447400 233700	Status: Historical Licence No: 28/39/14/0066 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: THE GROUNDS FARM, ADDERBURY (B) Data Type: Point Name: STILGOE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/09/1992 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.6 Source Protection Zones

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

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

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

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

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

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site — None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

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

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

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

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	244 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	244 SW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	244 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	244 SW	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	256 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	256 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
4	275 S	Not Specified	Lake, loch or reservoir.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
6	275 S	Not Specified	Lake, loch or reservoir.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
5	278 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	278 S	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	298 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	298 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	373 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	373 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	377 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	377 SE	Not Specified	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

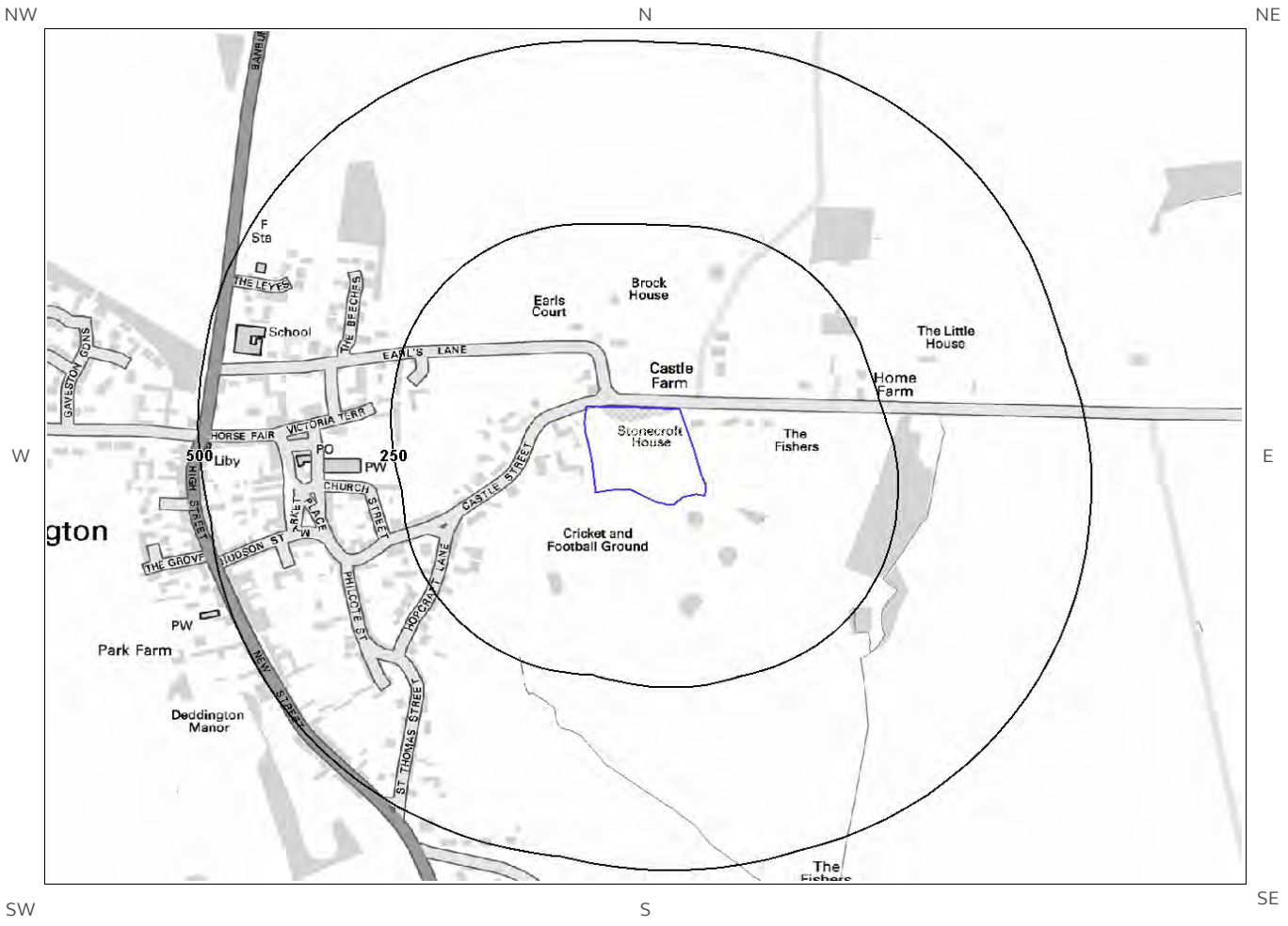
6.11 Surface Water Features

Surface water features within 250m of the study site | Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
244	SE
244	SW

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



Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

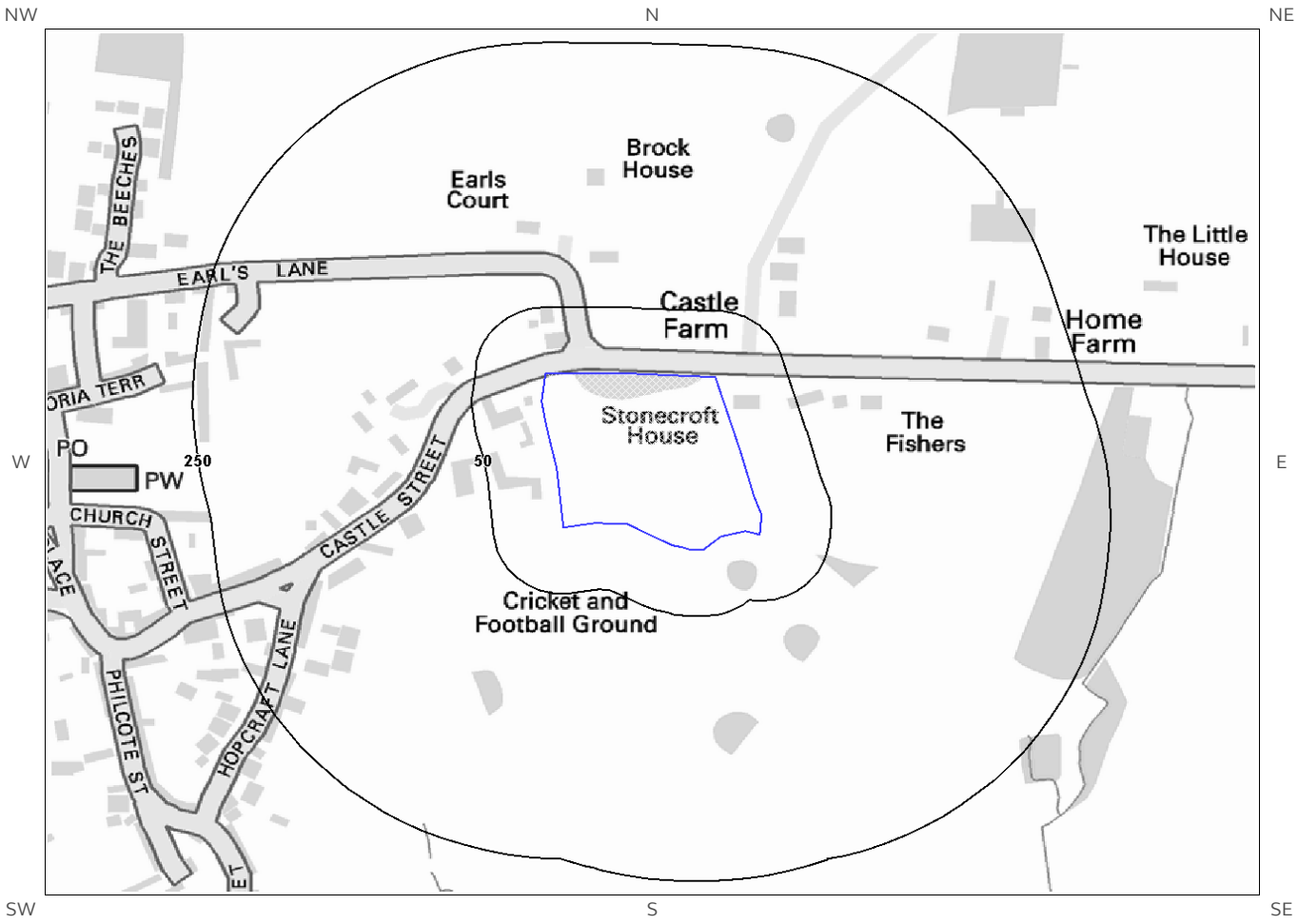
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

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



Site Outline

100 250 Search Buffers (m)

RoFRaS Rating

Very Low

Low

Medium

High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

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

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

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

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

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

Database searched and no data found.

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

Highest risk of flooding onsite — Very Low

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

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

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

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

7.6 Areas benefiting from Flood Storage

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

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site	Identified
Clearwater Flooding or Superficial Deposits Flooding	Clearwater Flooding

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

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

Potential below Surface

Where potential for groundwater flooding of property situated below ground level is indicated, this means that given the geological conditions there may be a groundwater flooding hazard to basements and other below surface infrastructure. Unless other relevant information, e.g. records of previous flooding, suggests groundwater flooding has occurred before in this area you need take no further action in relation to groundwater flooding hazard. If there are records of previous incidences of groundwater flooding, then is recommended that other information e.g. rainfall history, property type, and land drainage information in addition to previous records of flooding be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

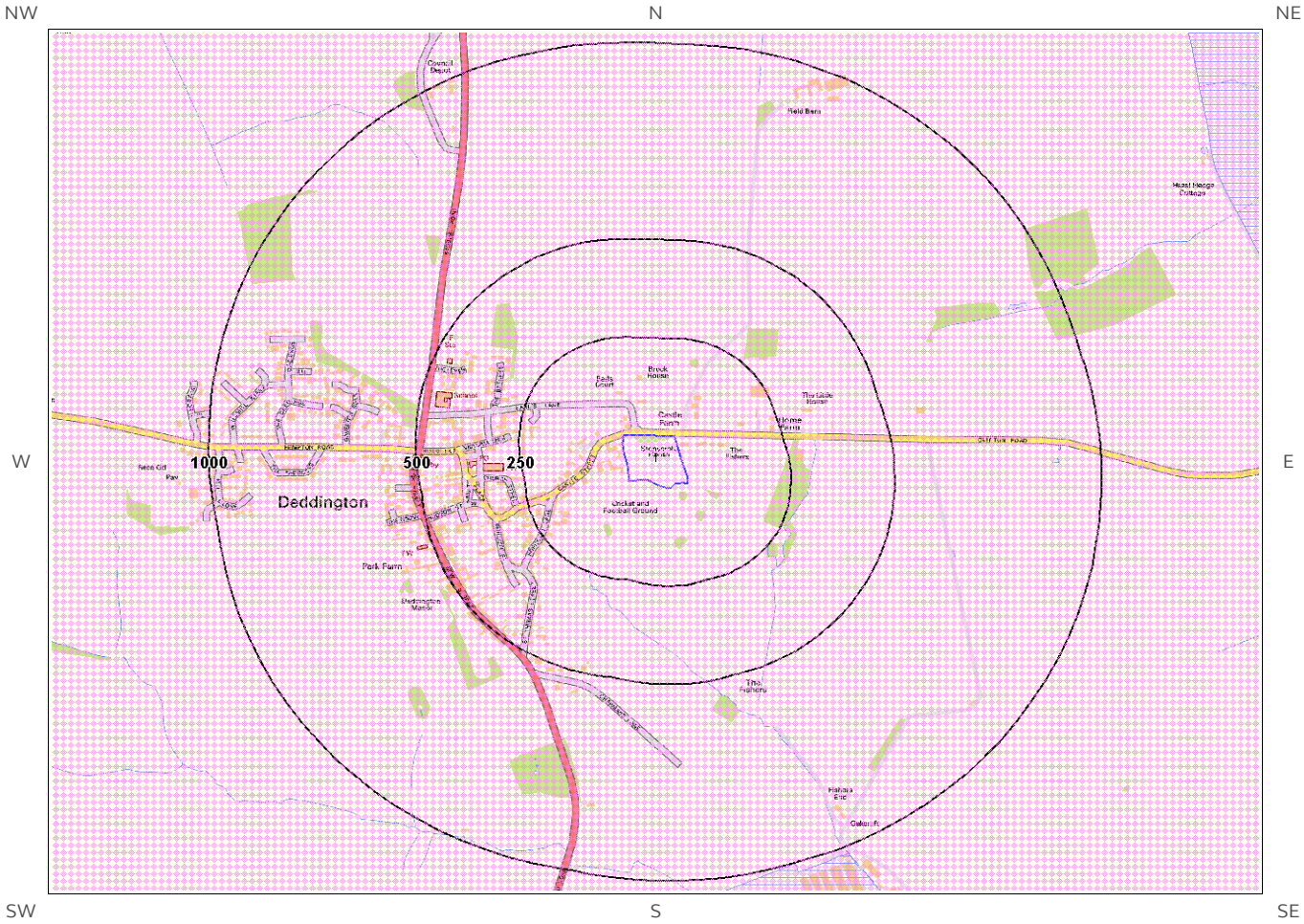
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result	Low

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

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

8. Designated Environmentally Sensitive Sites Map



Site Outline

100
250
Search Buffers (m)

AONB
National Park
SSSI
Special Protection Areas
Nitrate Vulnerable Zones
Green Belt
Environmentally Sensitive Areas
Special Areas of Conservation
World Heritage Sites
Nitrate Sensitive Areas
Ancient Woodland
National Nature Reserve
Local Nature Reserves
Ramsar Sites

8. Designated Environmentally Sensitive Sites

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

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

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

ID	Distance (m)	Direction	ESA Name	Data Source
3	1002	S	Upper Thames Tributaries	Natural England
Not shown	1660	S	Upper Thames Tributaries	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

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

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0	On Site	Existing	DEFRA
Not shown	1644	S	Existing	DEFRA

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

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

Maximum Shrink-Swell* hazard rating identified on the study site — Negligible

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

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

9.1.2 Landslides

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

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

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

9.1.3 Soluble Rocks

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

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

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

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

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Negligible

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

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

9.1.5 Collapsible Rocks

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

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

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

9.1.6 Running Sand

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

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

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

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

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary — None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site — None identified
Guidance: No Guidance Required.

Contact Details

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

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

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

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Cherwell District Council
Phone: 01295 252 535
Web: http://www.cherwell-dc.gov.uk/
Address: Bodicote House, Bodicote, Banbury, Oxfordshire, OX15 4AA

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

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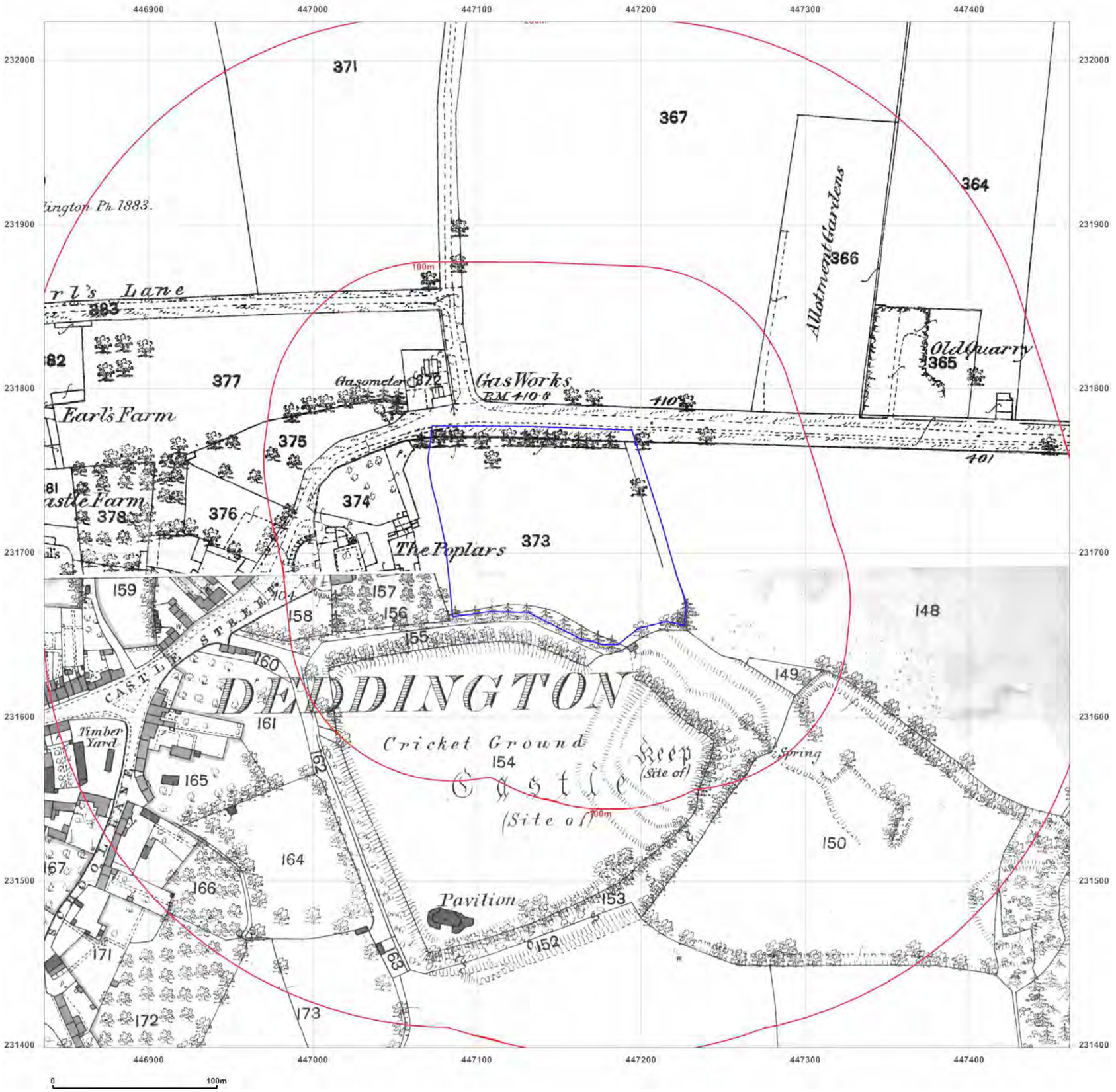

Groundsure INSIGHTS

Site Details:

4, CASTLE STREET,
DEDDINGTON, OX15 0TE

Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: County Series

Map date: **1880-1881**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1880
Revised 1880
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1881
Revised 1881
Edition N/A
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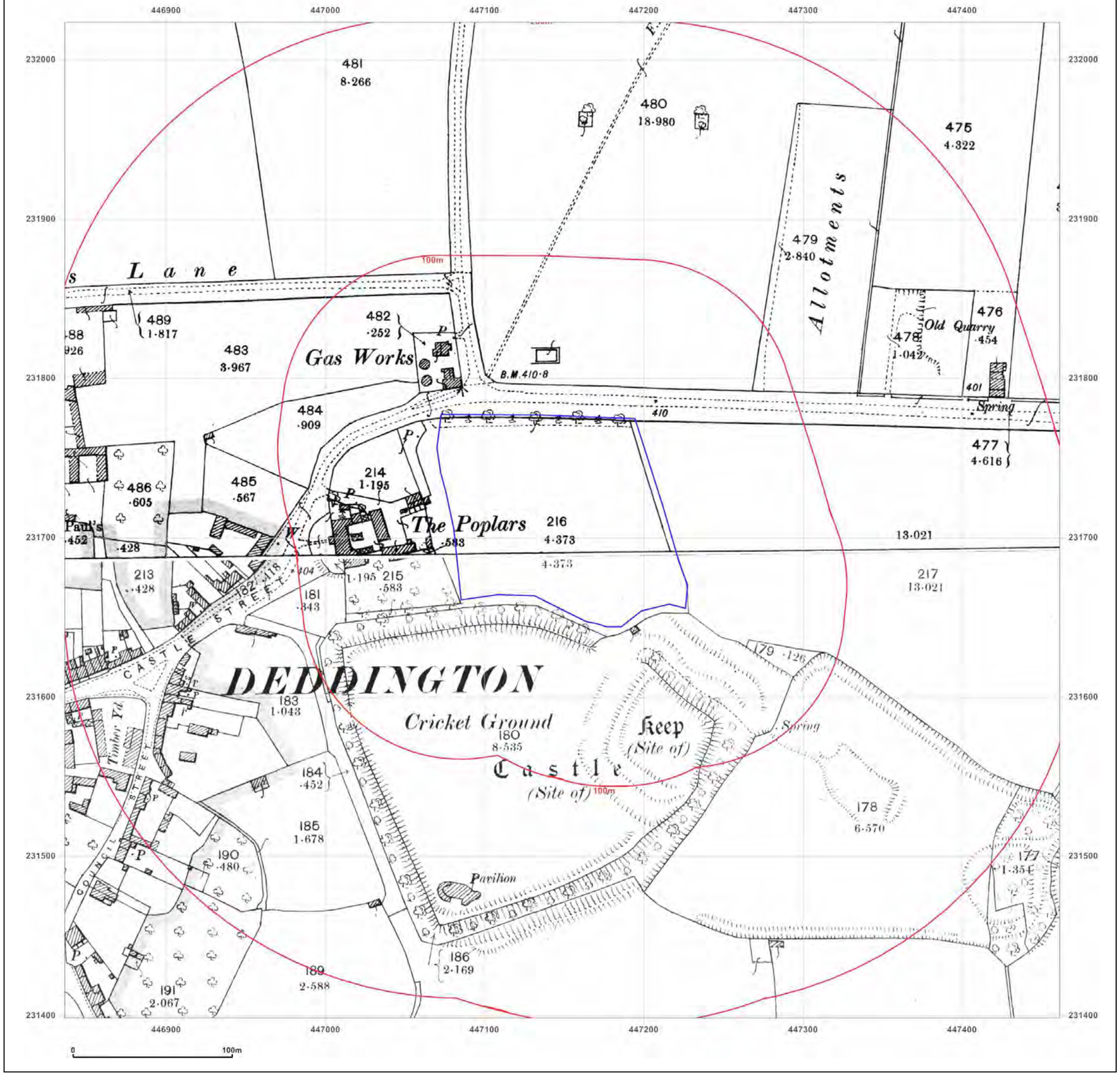

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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: County Series

Map date: **1898-1900**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1898
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Edition N/A
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Edition N/A
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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: County Series

Map date: **1922**

Scale: 1:2,500

Printed at: 1:2,500

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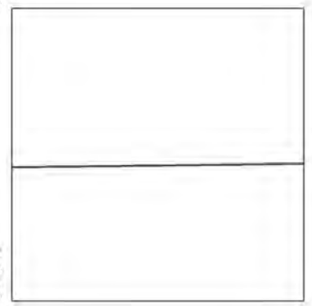
Surveyed 1922
Revised 1922
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1922
Revised 1922
Edition N/A
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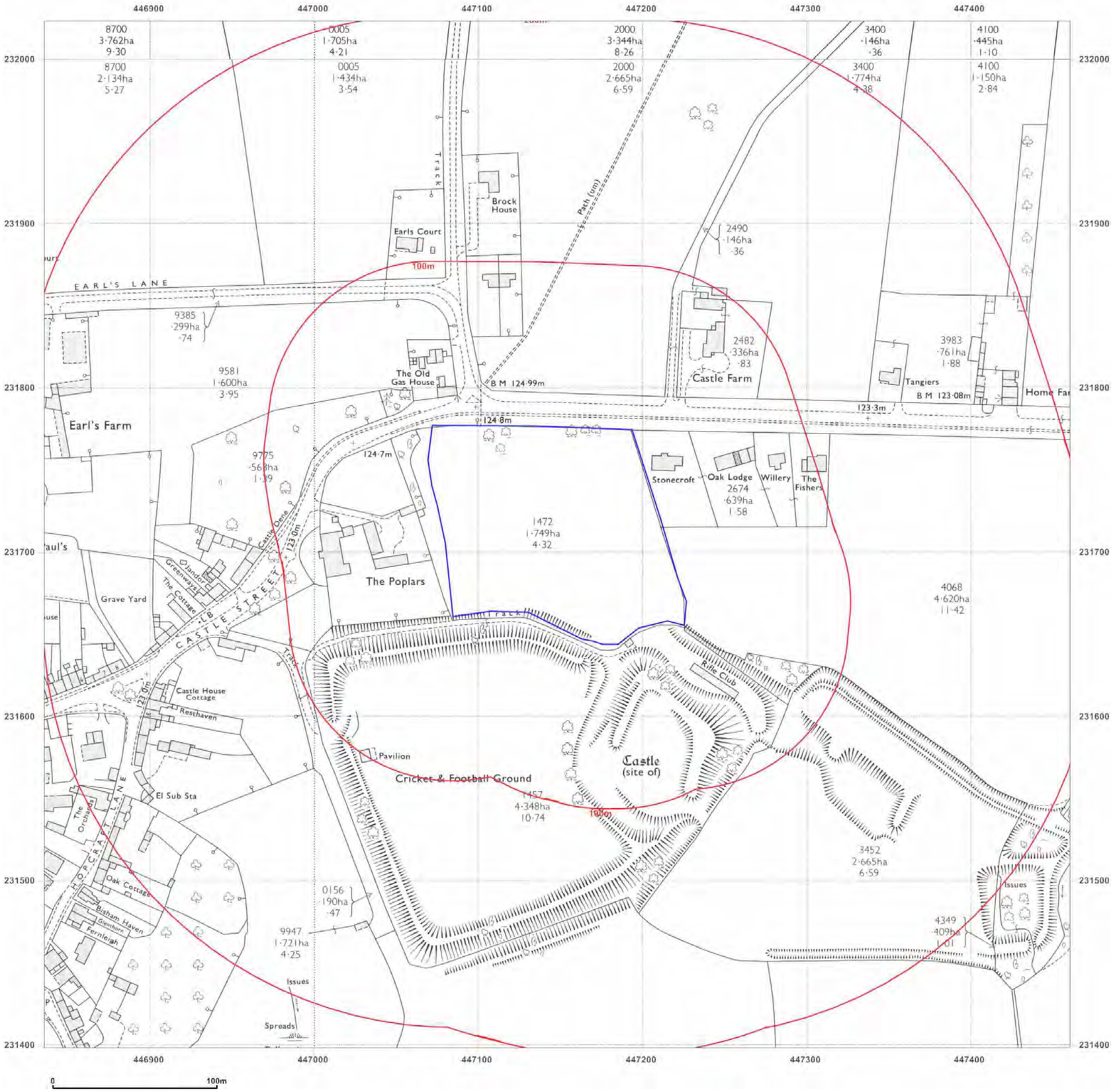

Groundsure INSIGHTS

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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **1971-1972**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1972
Revised 1972
Edition N/A
Copyright 1974
Levelled 1970

Surveyed 1971
Revised 1971
Edition N/A
Copyright 1974
Levelled 1971

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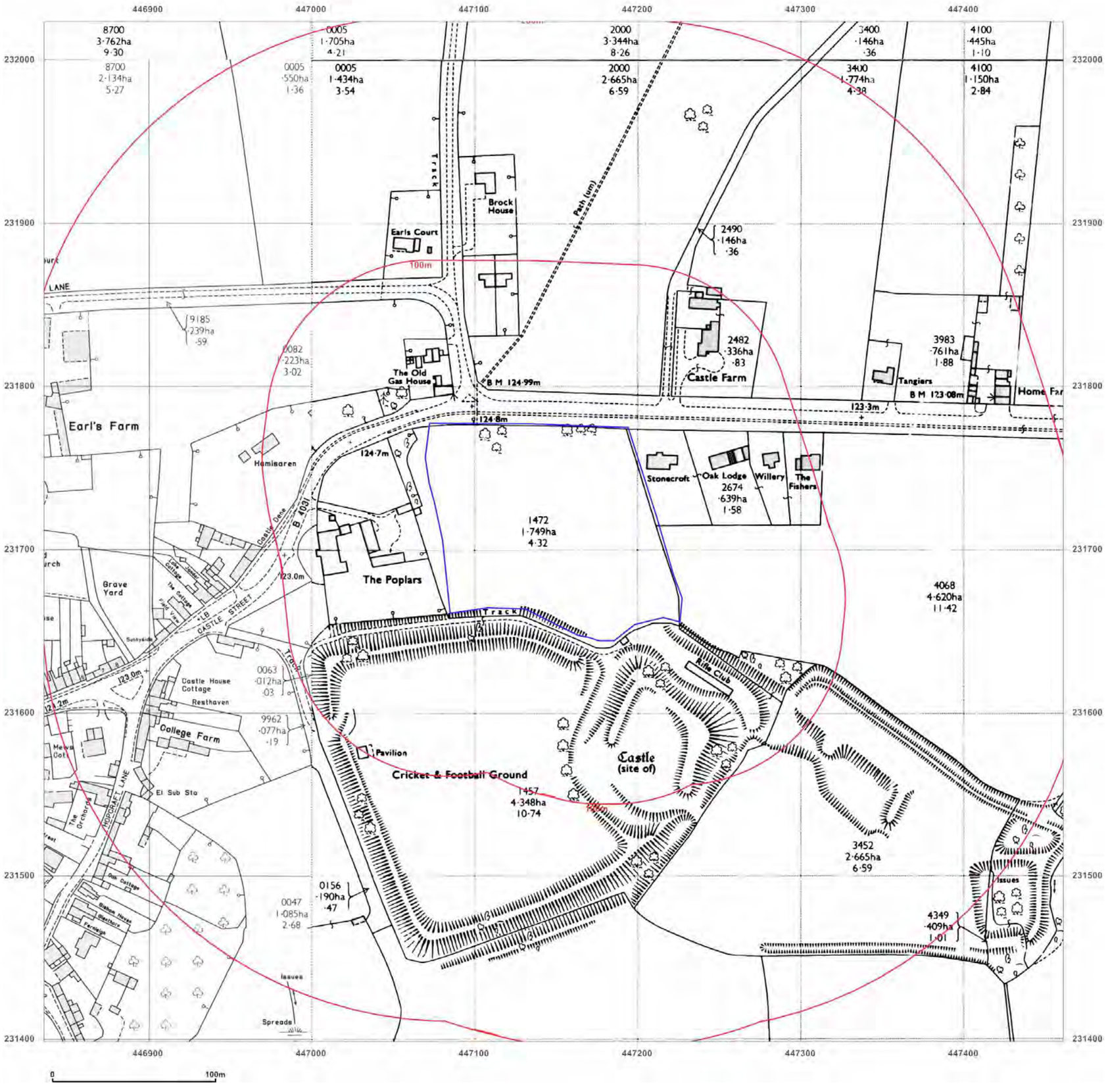

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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **1974-1978**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed 1978 Revised 1978 Edition N/A Copyright 1980 Levelled 1971	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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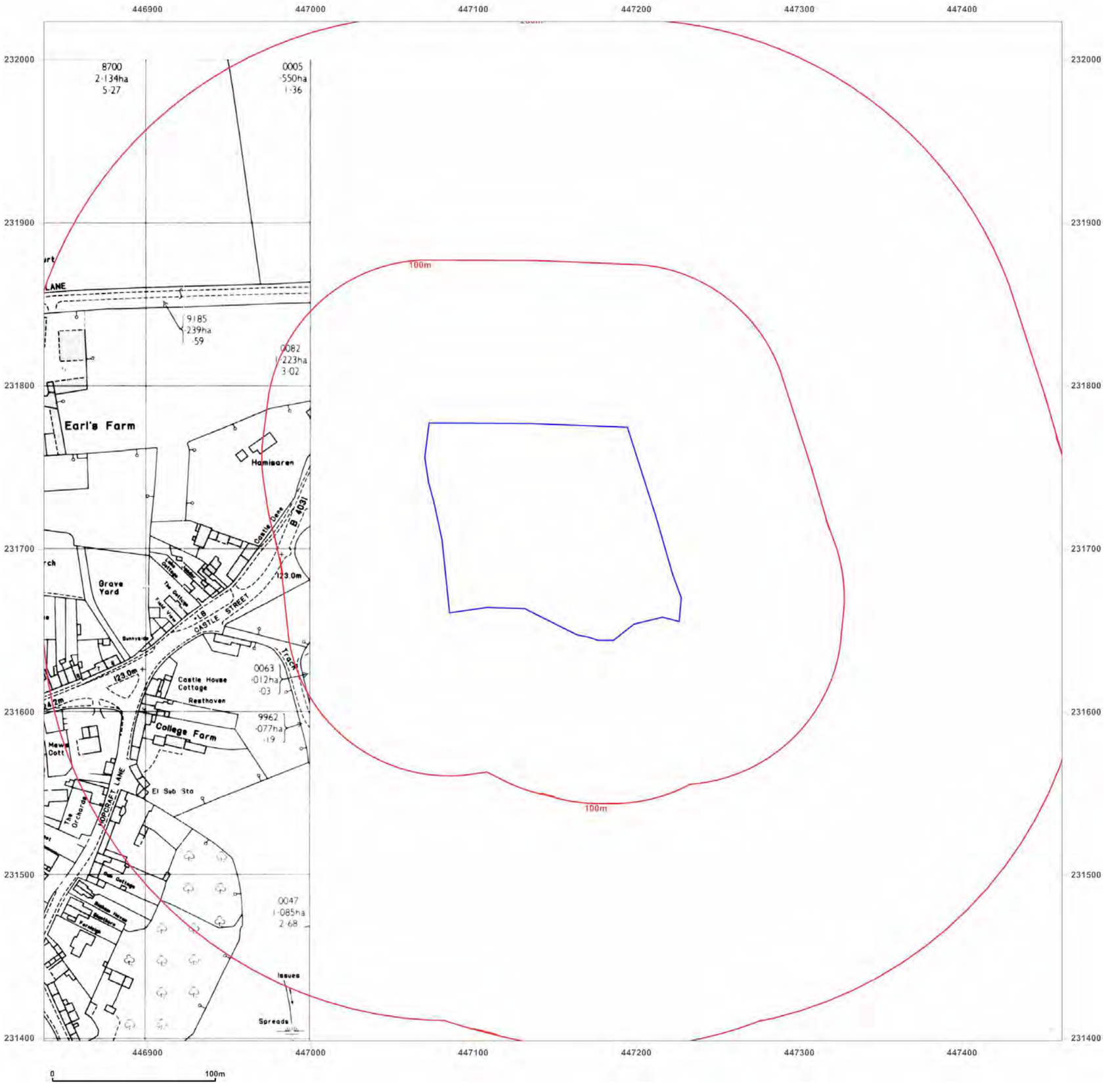

Groundsure INSIGHTS

Site Details:

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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **1987**

Scale: 1:2,500

Printed at: 1:2,500

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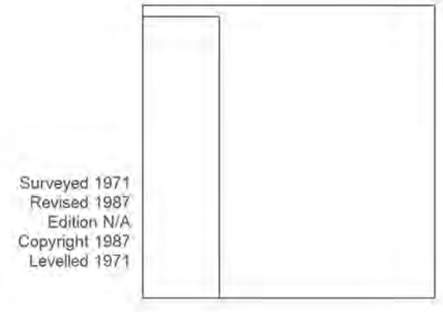

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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid
Map date: **1991-1994**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

Surveyed 1994
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A

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

Surveyed 1994
Revised 1994
Edition N/A
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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **1994**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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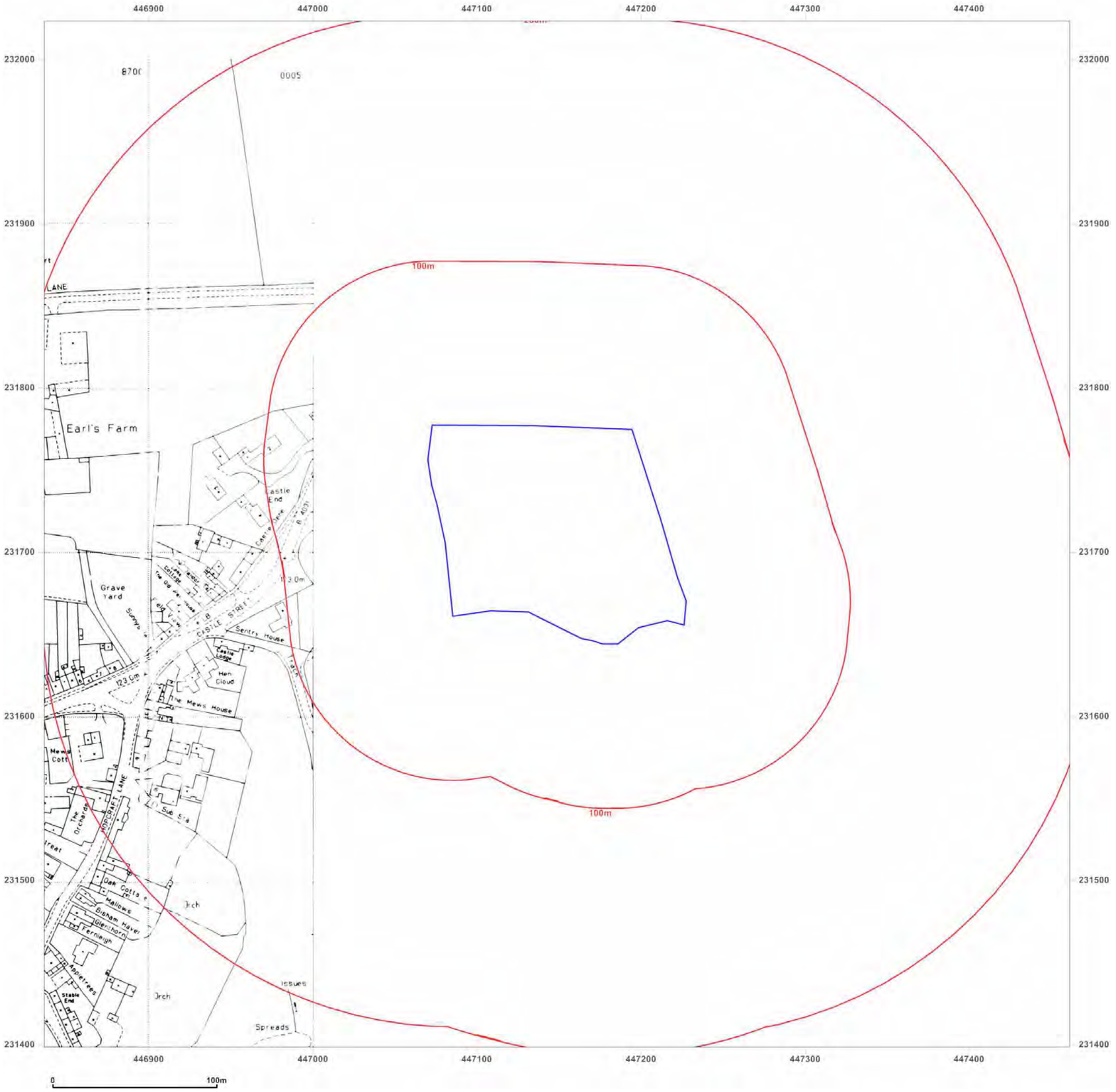

Groundsure INSIGHTS

Site Details:

4, CASTLE STREET,
DEDDINGTON, OX15 0TE

Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **1994**

Scale: 1:2,500

Printed at: 1:2,500

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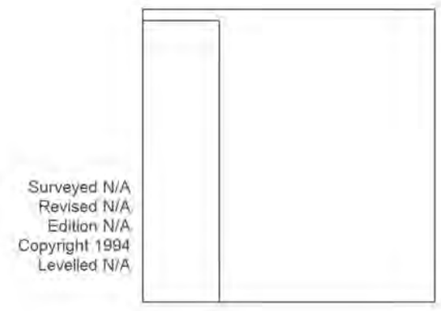

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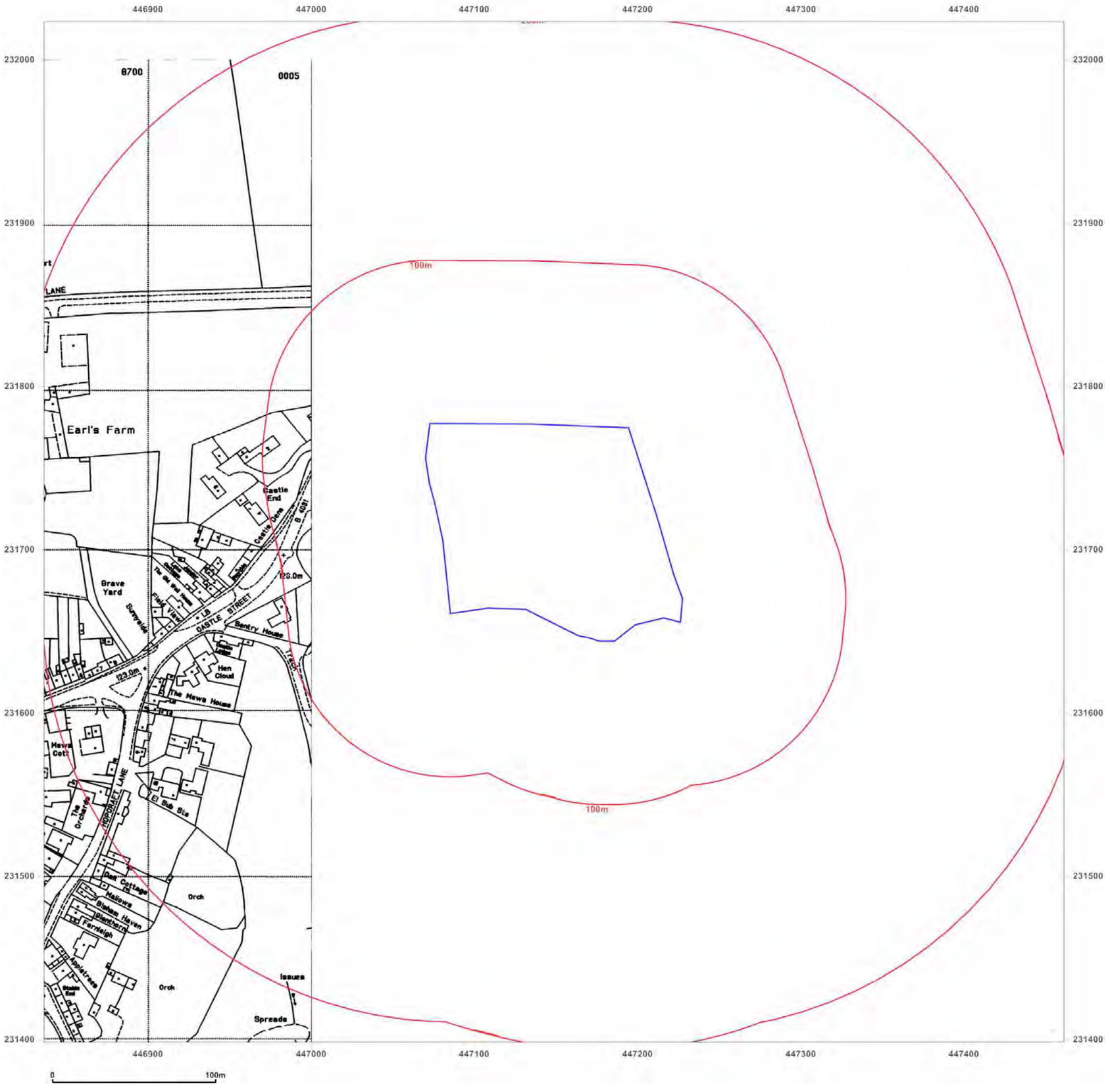

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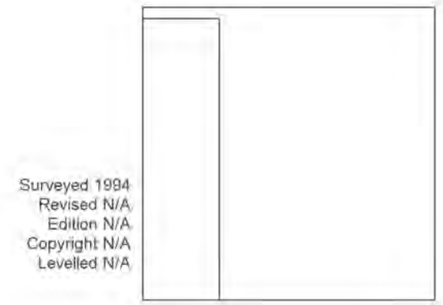

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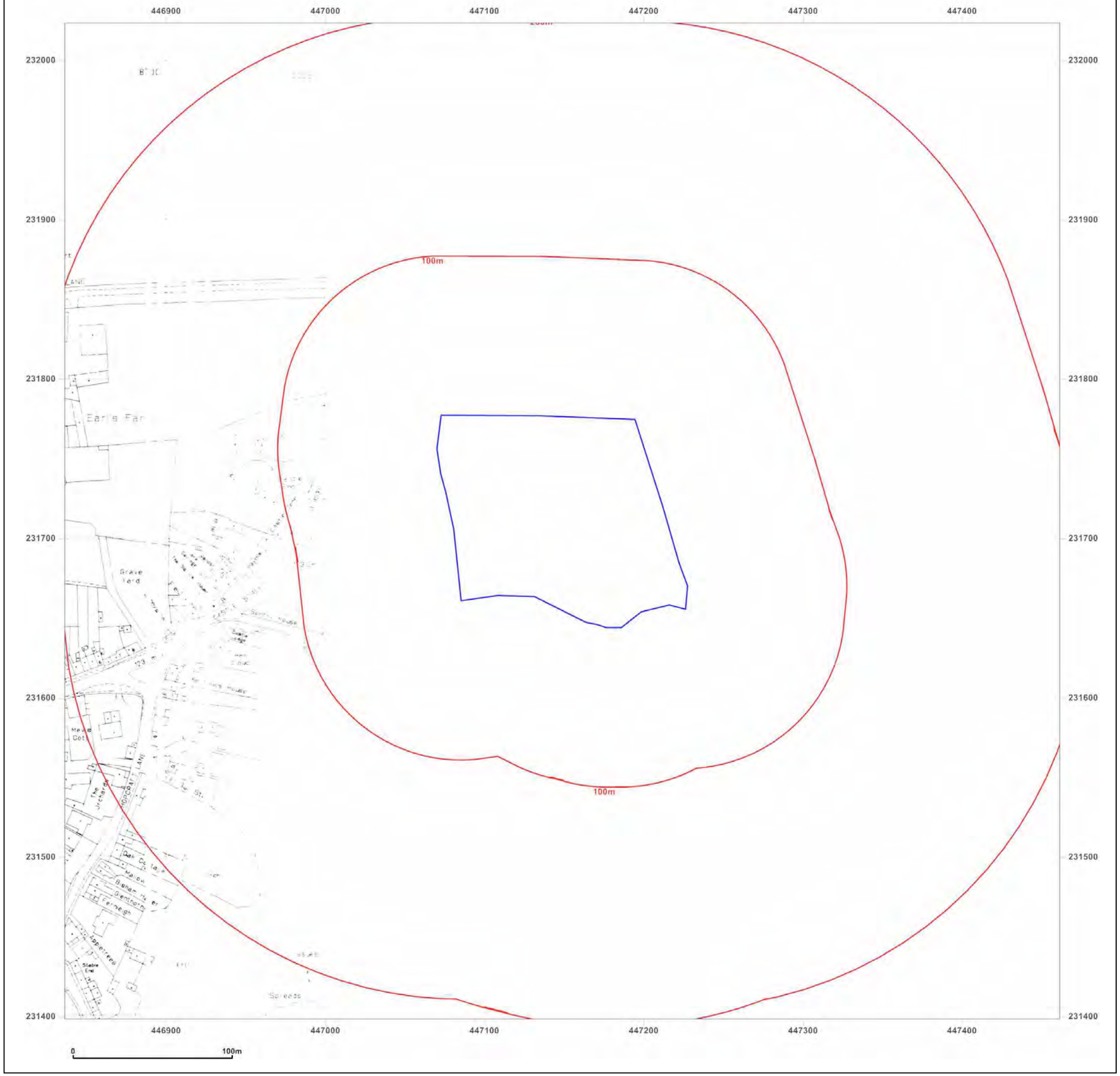

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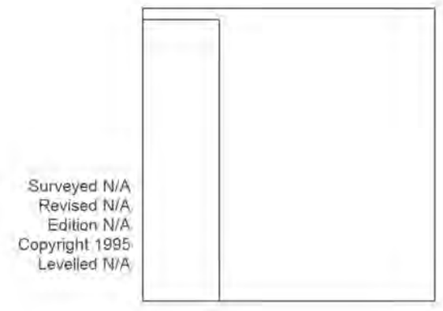

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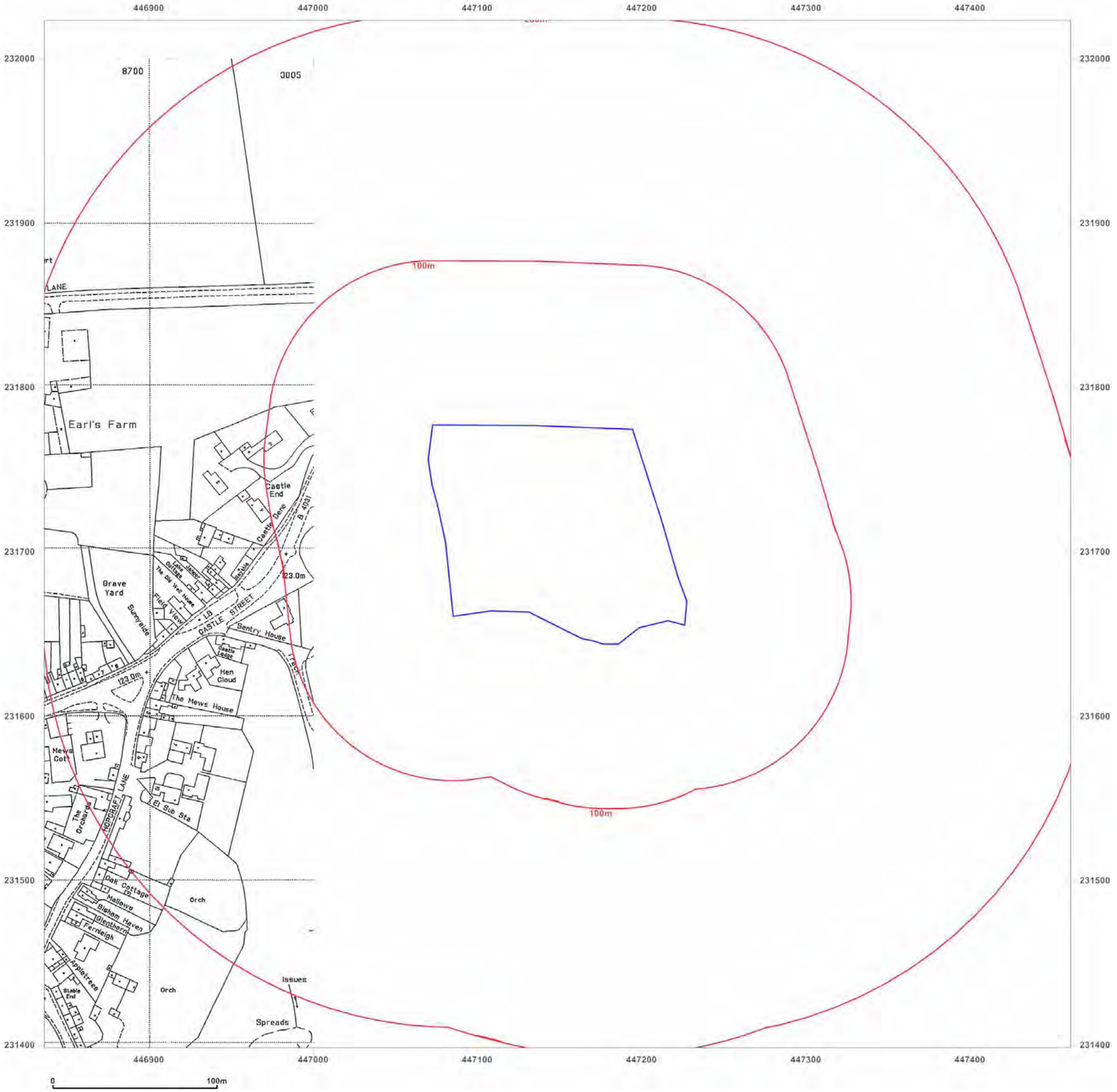

Groundsure INSIGHTS

Site Details:

4, CASTLE STREET,
DEDDINGTON, OX15 0TE

Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

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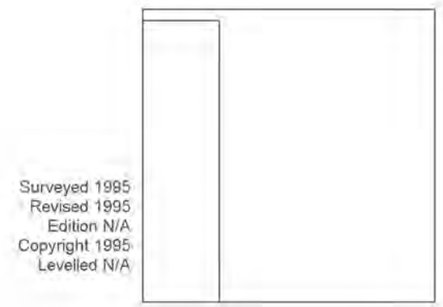

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Groundsure
LOCATION INTELLIGENCE

RSK

RSK, THE OLD SCHOOL, STILLHOUSE LANE,
BEDMINSTER,
BRISTOL, BS3 4EB

Groundsure Reference:	GS-5639750
Your Reference:	314228_Castle_Street_Deddington
Report Date	22 Nov 2018
Report Delivery Method:	Email - pdf

Geo Insight

Address: 4, CASTLE STREET, DEDDINGTON, OX15 0TE

Dear Sir/ Madam,

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

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

Yours faithfully,

[redacted]

Managing Director
Groundsure Limited

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**4, CASTLE STREET, DEDDINGTON, OX15 0TE**
Date:	**22 Nov 2018**
Reference:	**GS-5639750**
Client:	**RSK**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	05-May-2016
Grid Reference:	447155,231706
Site Size:	1.62ha

Groundsure
LOCATION INTELLIGENCE

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Overview of Findings

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

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

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

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

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	No

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.
	3.2Radon Protection	Full radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	10	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	3

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	1	0	3	0	4
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

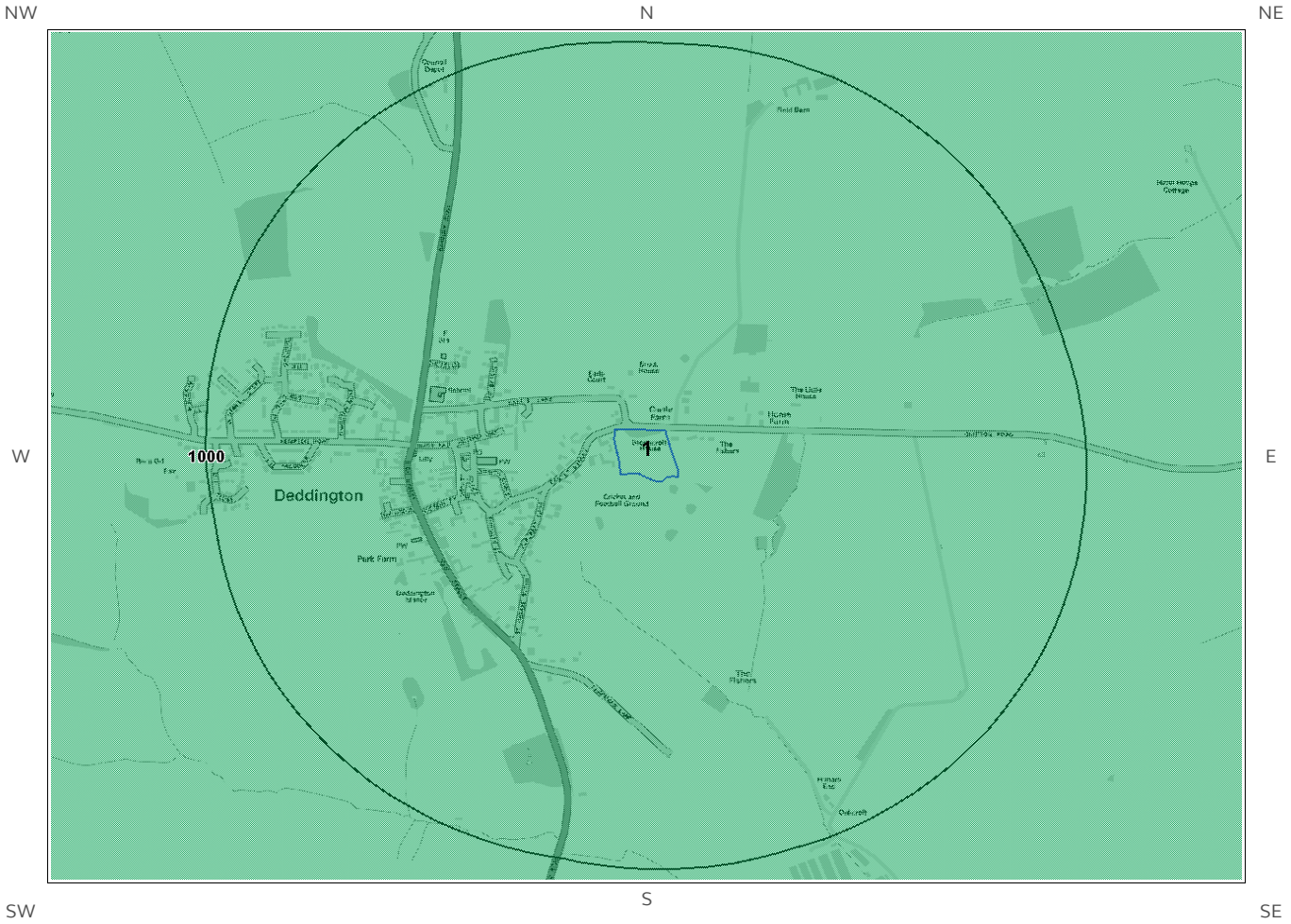
Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Negligible
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Negligible
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Negligible

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	0	2

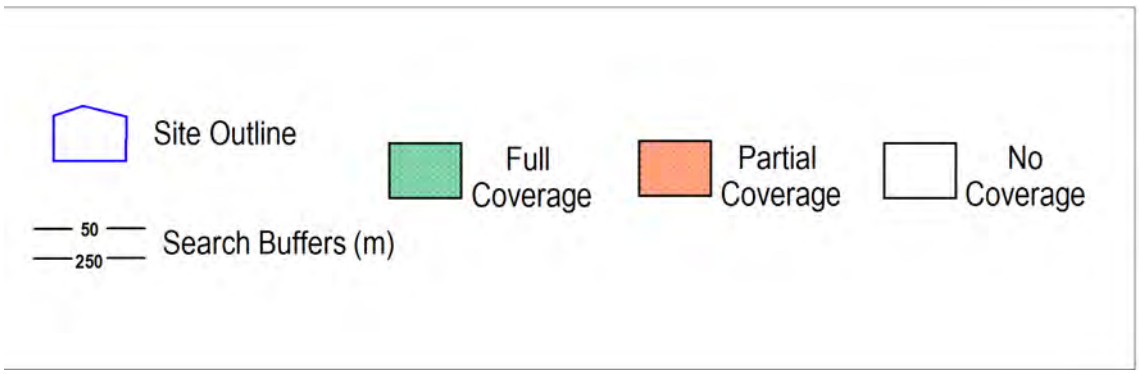
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	1	0	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability



1_10,000 Availability Legend



Availability of 1:10,000 Scale Geology Mapping

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

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
N2	1644.0	No deposits are mapped	No coverage	No coverage	No coverage

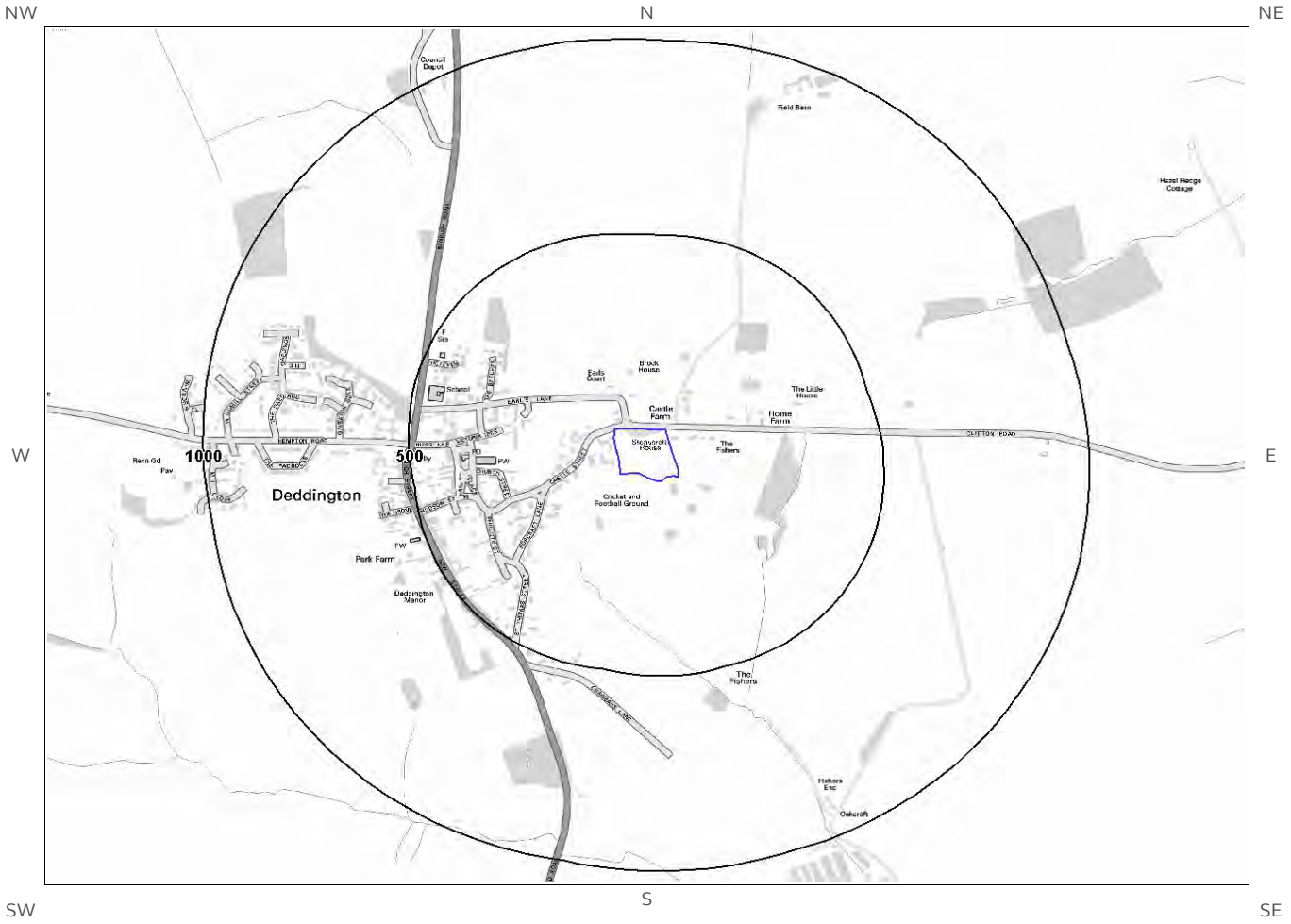
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

The definitions of coverage are as follows:

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

1 Geology (1:10,000 scale).

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



Artificial Ground Legend

1. Geology 1:10,000 scale

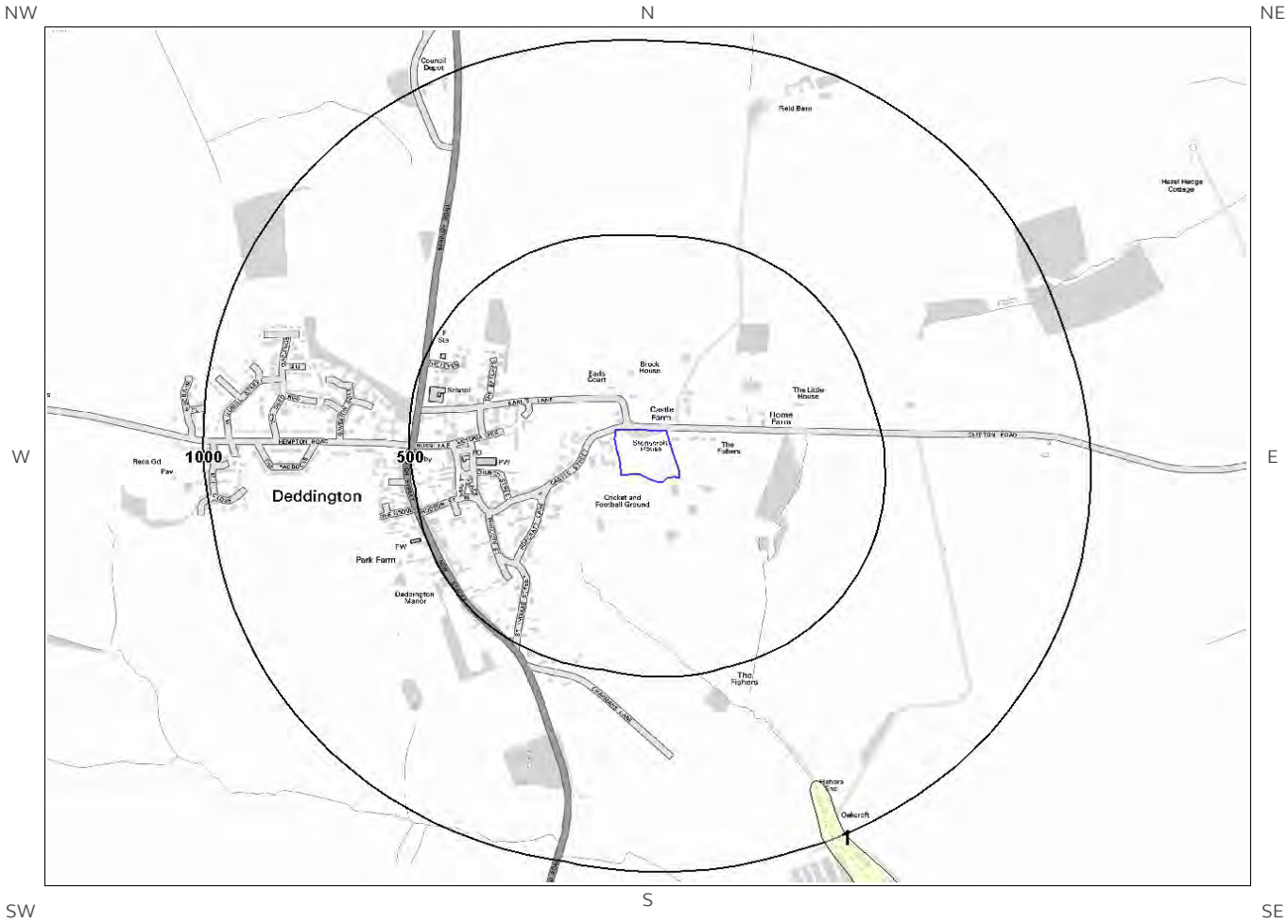
1.1 Artificial Ground

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

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

Database searched and no data found.

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



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

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

1.2.1 Superficial Deposits/ Drift Geology

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

Database searched and no data found.

1.2.2 Landslip

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

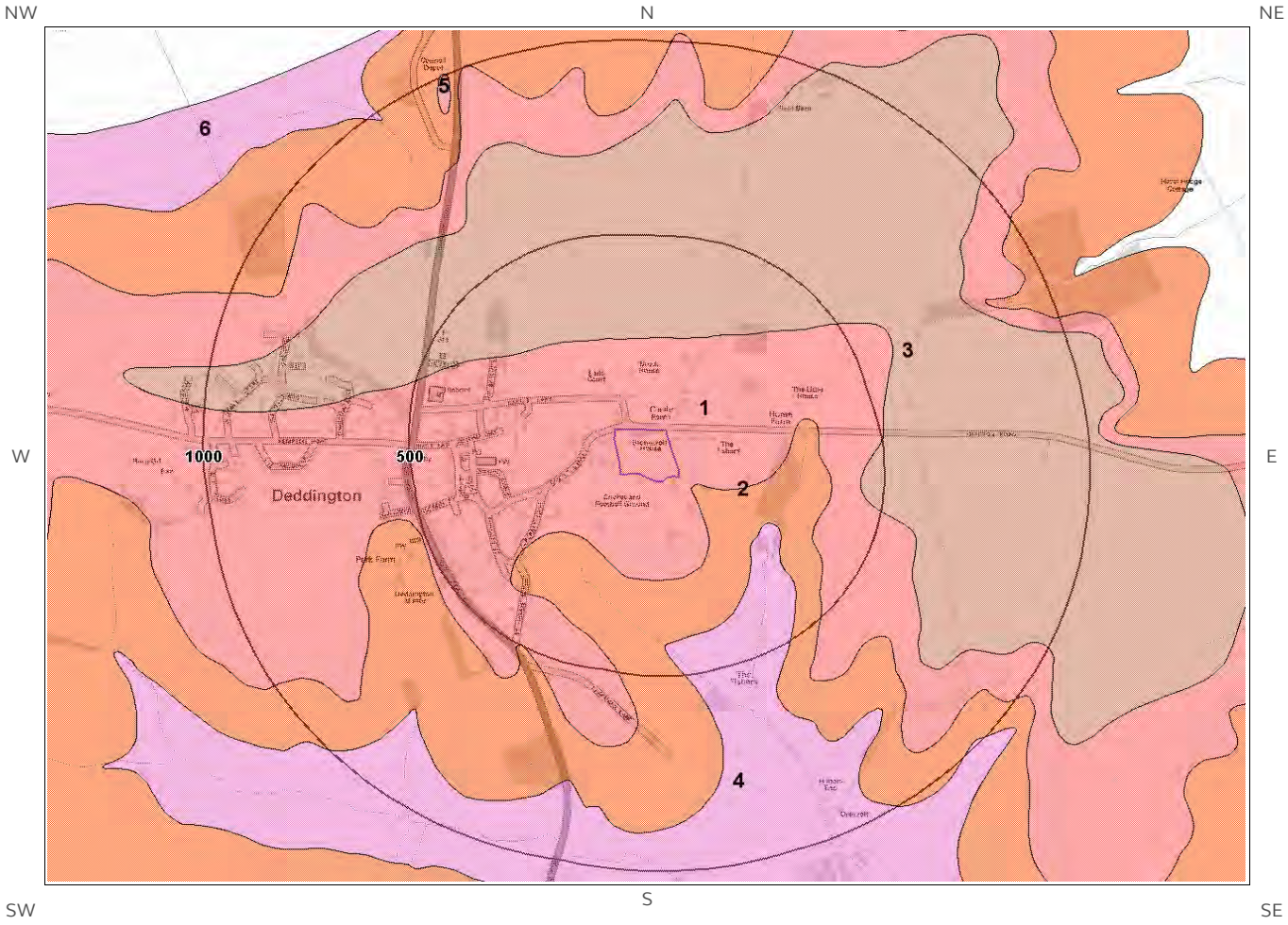
No

Database searched and no data found.

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

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

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



Bedrock and linear features Legend

Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

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

1.3.1 Bedrock/ Solid Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	MRB-FLIR	Marlstone Rock Formation - Ferruginous Limestone And Ironstone	Toarcian Age - Pliensbachian Age
2	42.0	SE	DYS-SIMD	Dyrham Formation - Siltstone And Mudstone, Interbedded	Pliensbachian Age
3	234.0	N	WHM-MDST	Whitby Mudstone Formation - Mudstone	Toarcian Age
4	240.0	SE	CHAM-MDST	Charmouth Mudstone Formation - Mudstone	Pliensbachian Age - Sinemurian Age

1.3.2 Linear features

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

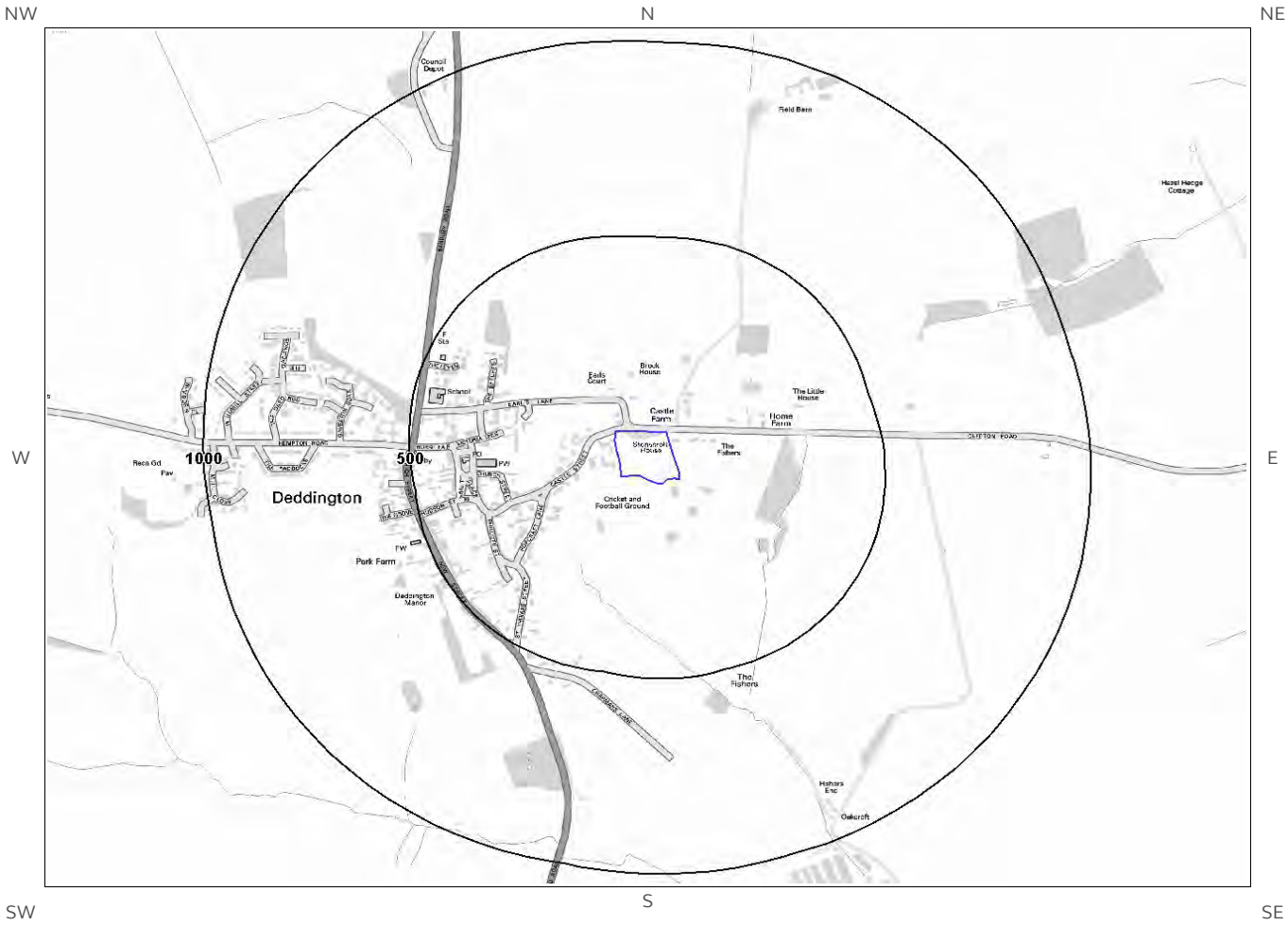
Database searched and no data found at this scale.

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

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

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 218

2.1.1 Artificial/ Made Ground

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

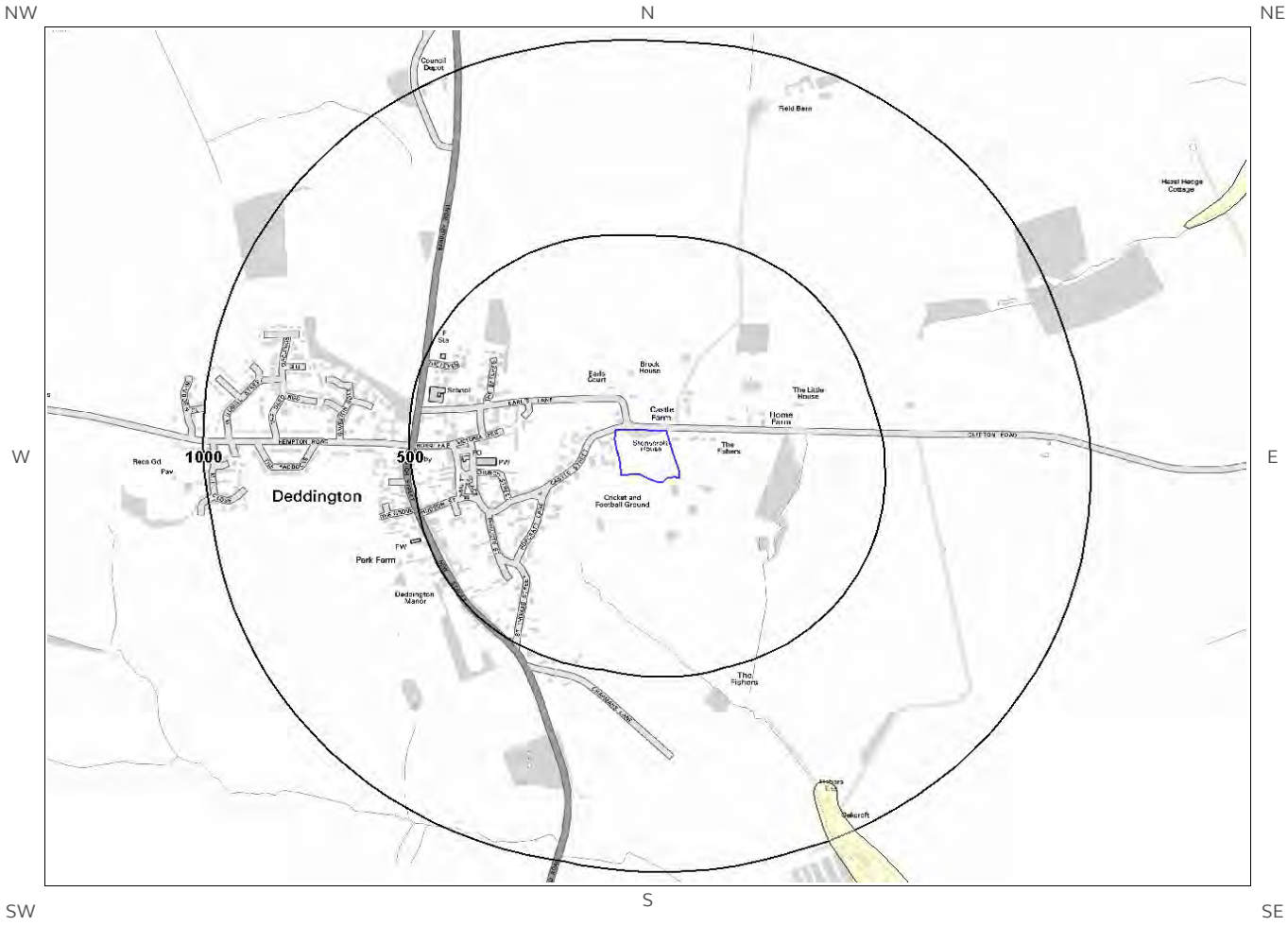
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

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

Database searched and no data found.

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



2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

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

Database searched and no data found.

2.2.2 Permeability of Superficial Ground

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

Database searched and no data found.

2.2.3 Landslip

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

Database searched and no data found.

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

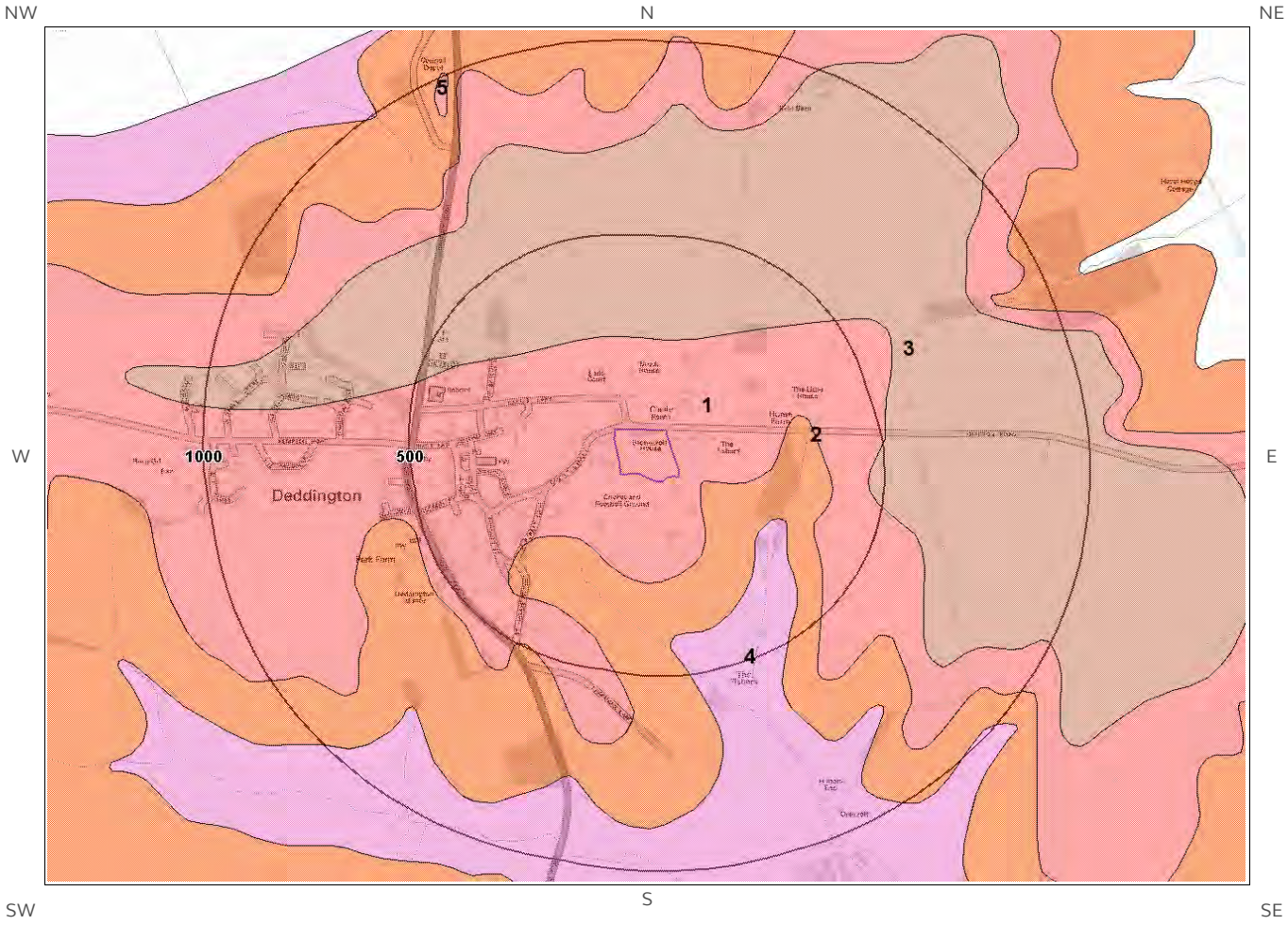
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

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

Database searched and no data found.

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



Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 218

2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	MRB-FLIR	MARLSTONE ROCK FORMATION - FERRUGINOUS LIMESTONE AND IRONSTONE	PLIENSBACHIAN
2	56.0	E	DYS-SIMD	DYRHAM FORMATION - SILTSTONE AND MUDSTONE, INTERBEDDED	PLIENSBACHIAN
3	234.0	N	WHM-MDST	WHITBY MUDSTONE FORMATION - MUDSTONE	TOARCIAN
4	239.0	SE	CHAM-MDST	CHARMOUTH MUDSTONE FORMATION - MUDSTONE	SINEMURIAN

2.3.2 Permeability of Bedrock Ground

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

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

2.3.3 Linear features

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

Database searched and no data found.

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

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

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?The property is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.

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

3.2 Radon Protection

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

---

4 Ground Workings map

Ground Workings Legend

Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

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

ID	Distance (m)	Direction	NGR	Use	Date
1	81.0	SE	447452 231535	Unspecified Pits	1923
2A	93.0	SE	447327 231561	Unspecified Pit	1880
3	94.0	SE	447372 231581	Unspecified Pit	1880
4A	96.0	SE	447327 231552	Unspecified Ground Workings	1923
5A	99.0	SE	447320 231544	Unspecified Ground Workings	1949
6	141.0	E	447362 231826	Unspecified Quarry	1881
7	184.0	E	447374 231834	Unspecified Ground Workings	1900
8	237.0	SE	447437 231490	Unspecified Ground Workings	1880
9	238.0	SE	447442 231519	Unspecified Pit	1949
10	239.0	SE	447421 231478	Unspecified Pit	1949

4.2 Historical Underground Working Features derived from Historical Mapping

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

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

Database searched and no data found.

4.3 Current Ground Workings

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

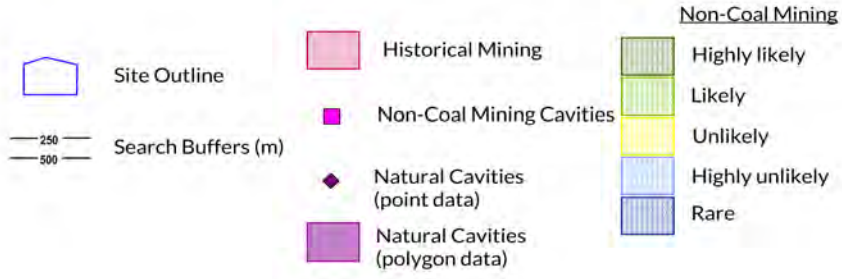
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

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

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	663.0	NW	446658 232295	Ironstone	King's Spring	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	752.0	S	446835 230952	Sandstone	DEDDINGTON	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	761.0	S	446911 230920	Clay & Shale	Deddington	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map

Mining, Extraction and Natural Cavities Legend



5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

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

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

Database searched and no data found.

5.2 Coal Mining

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

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

Database searched and no data found.

5.3 Johnson Poole and Bloomer

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

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

The following information provided by JPB is not represented on mapping: Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.

5.4 Non-Coal Mining

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

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

Database searched and no data found.

5.5 Non-Coal Mining Cavities

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

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

Database searched and no data found.

5.6 Natural Cavities

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

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

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

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

Database searched and no data found.

5.8 Gypsum Extraction

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

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

Database searched and no data found.

5.9 Tin Mining

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

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

Database searched and no data found.

5.10 Clay Mining

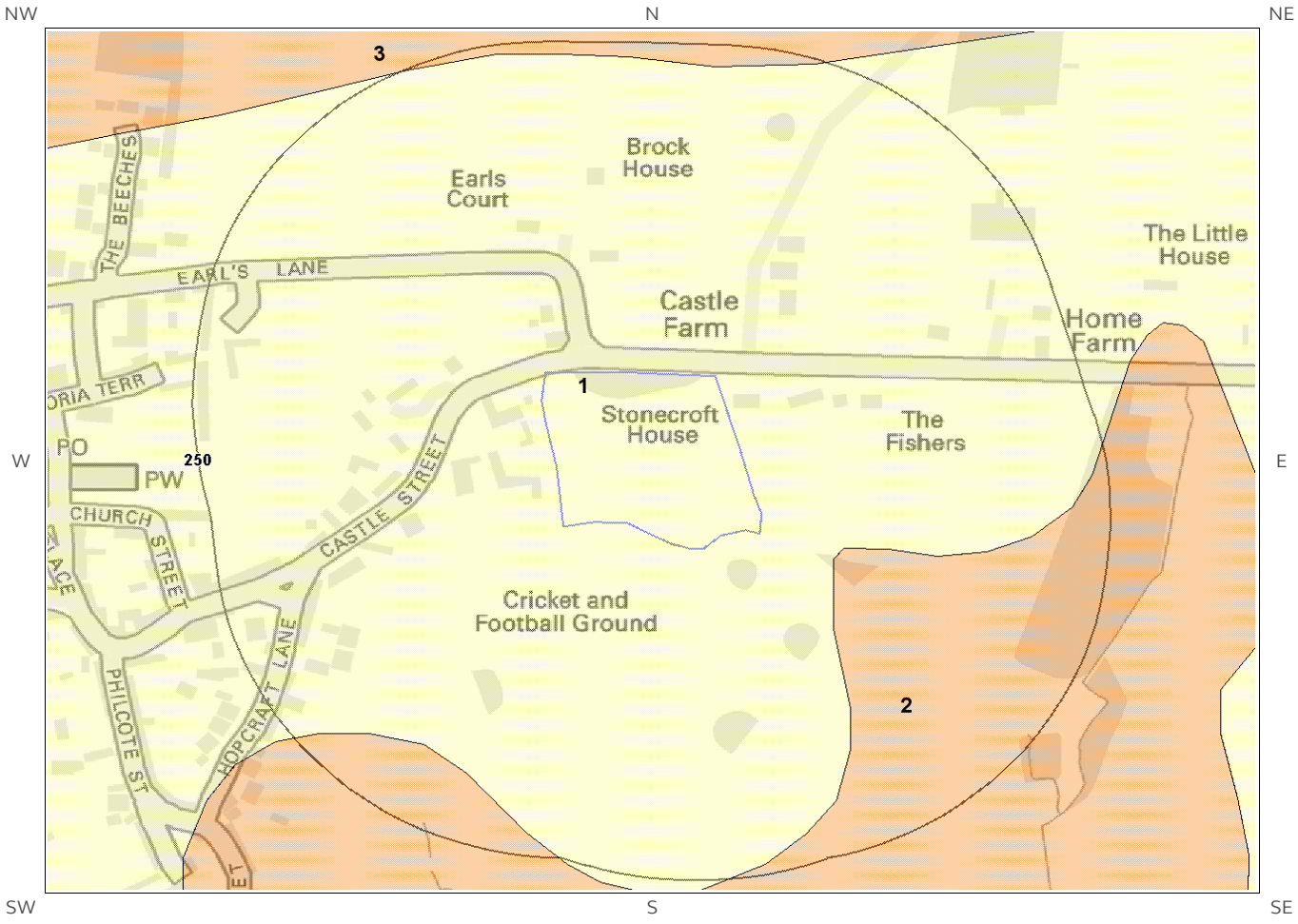
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

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

Database searched and no data found.

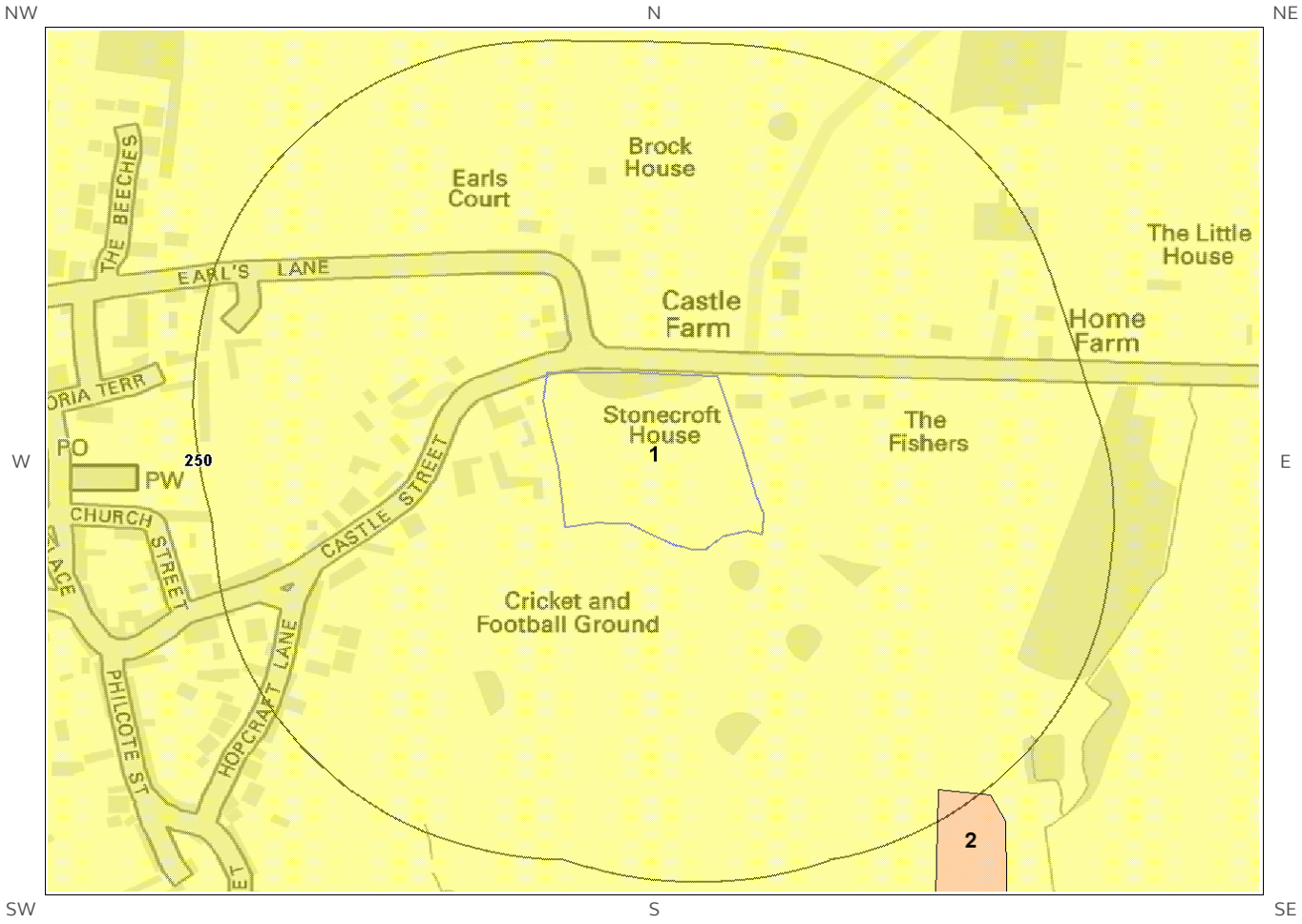
6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



Shrink Swell Clay Legend

6.2 Landslides map



Landslides Legend

6.3 Ground Dissolution of Soluble Rocks map

Ground Dissolution Soluble Rocks Legend

6.4 Compressible Deposits map

Compressible Deposits Legend

6.5 Collapsible Deposits map

Collapsible Deposits Legend

6.6 Running Sand map

Running Sand Legend

6 Natural Ground Subsidence

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

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

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

6.1 Shrink-Swell Clays

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

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

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

6.3 Ground Dissolution of Soluble Rocks

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

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

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

6.4 Compressible Deposits

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

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

6.5 Collapsible Deposits

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

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

6.6 Running Sands

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

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

7 Borehole Records map

Borehole Records Legend

Site Outline

Borehole Locations

125
250
Search Buffers (m)

7 Borehole Records

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

Records of boreholes within 250m of the study site boundary: 2

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	53.0	N	447140 231830	SP43SE30	30.48	CASTLE FARM DEDDINGTON
2	143.0	N	447100 231920	SP43SE27	5.0	DEDDINGTON D20

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/331419
#2: scans.bgs.ac.uk/sobi_scans/boreholes/331416

8 Estimated Background Soil Chemistry

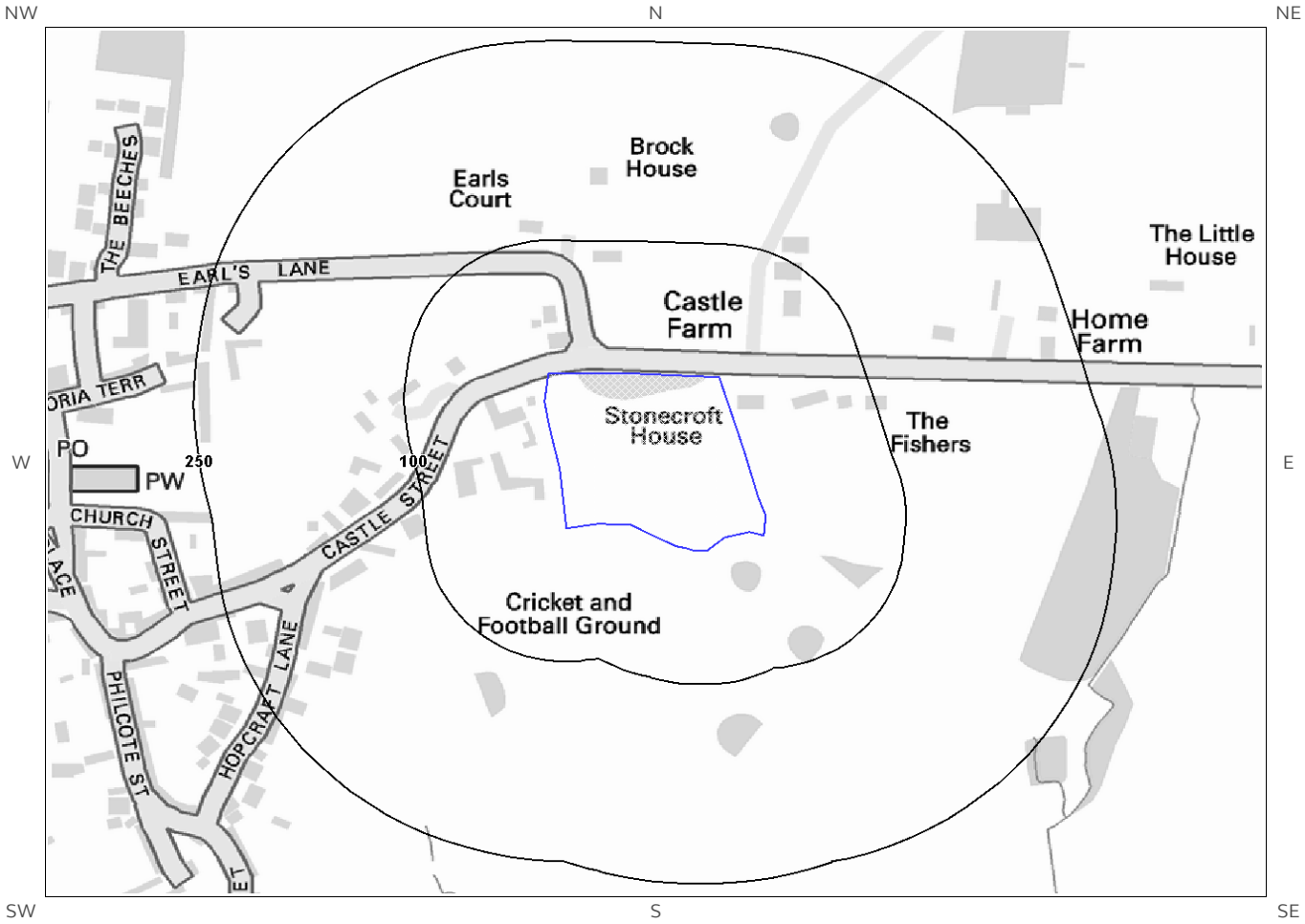
Records of background estimated soil chemistry within 250m of the study site boundary: 1

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

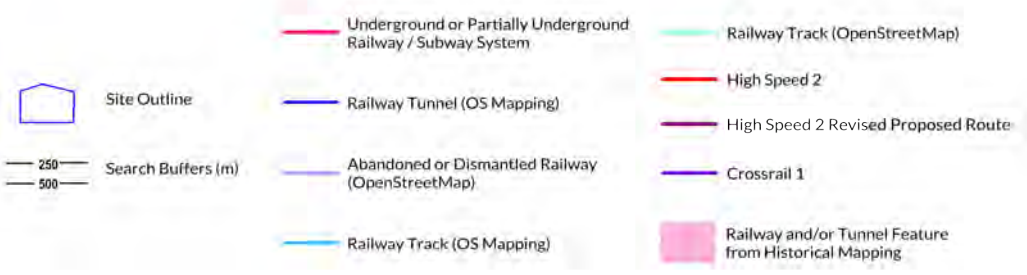
Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	>120 mg/kg	<1.8 mg/kg	>180 mg/kg	80 - 100 mg/kg	<100 mg/kg

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

9 Railways and Tunnels map



Railways and Tunnels Legend



9 Railways and Tunnels

9.1 Tunnels

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

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

Database searched and no data found.

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

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

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

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

Database searched and no data found.

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

9.3 Historical Railways

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

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

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

Database searched and no data found.

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

9.5 Railway Projects

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

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

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

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

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

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

Contact Details

Groundsure Helpline

Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX

The Coal Authority

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

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
Main switchboard: 020 7654 8000

Johnson Poole & Bloomer Limited

Harris and Pearson Building, Brettel Lane
Brierley Hill, West Midlands
DY5 3LH
Tel: +44 (0) 1384 262 000
Email:**enquiries.gs@jpb.co.uk**
Website: **www.jpb.co.uk**

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS

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Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC

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Website:**http://www1.getmapping.com/**

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Tel: +44 (0)118 950 0761 E-mail:**reading@pba.co.uk**
Website:**http://www.peterbrett.com/home**

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Site Details:

4, CASTLE STREET,
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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: County Series

Map date: **1880-1881**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1881
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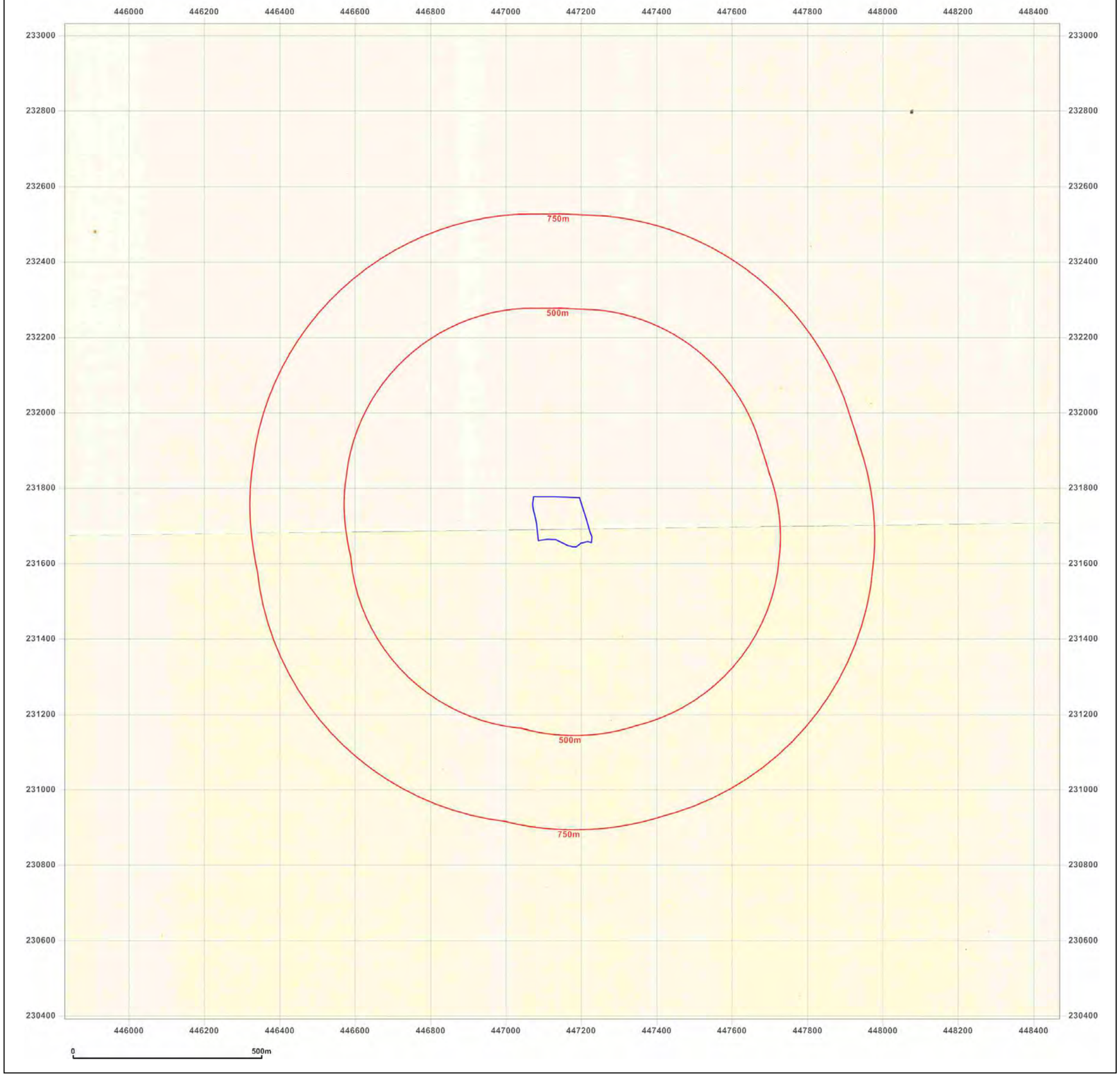

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Grid Ref: 447149, 231711

Map Name: County Series

Map date: **1883**

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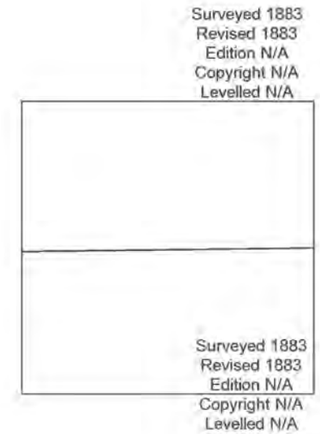

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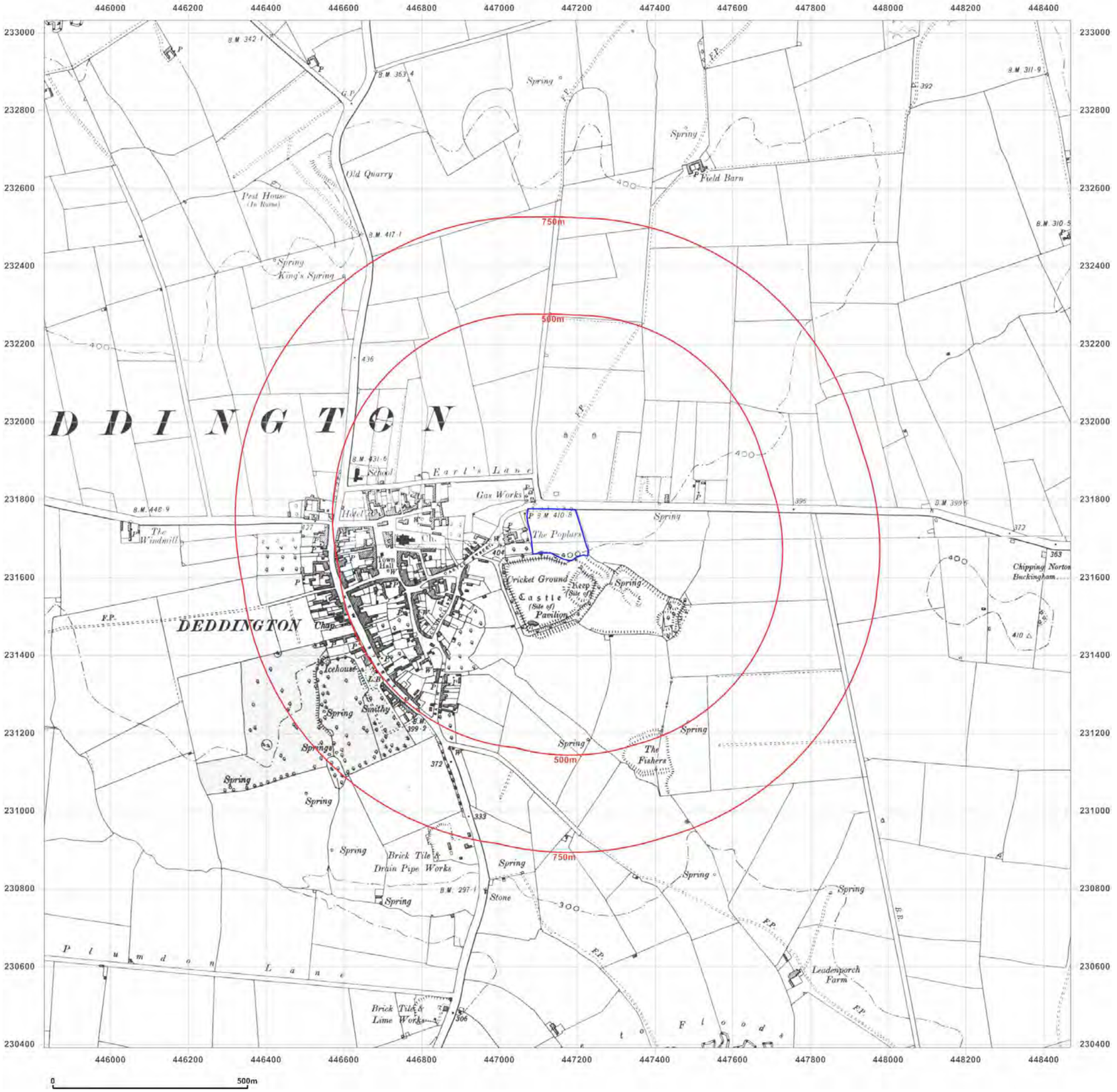

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Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: County Series

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Scale: 1:10,560

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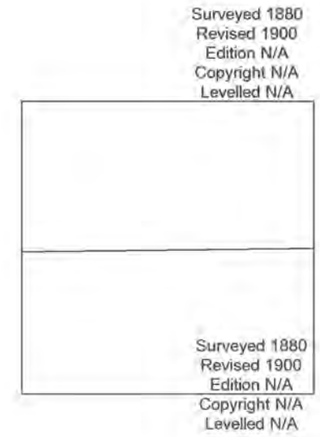

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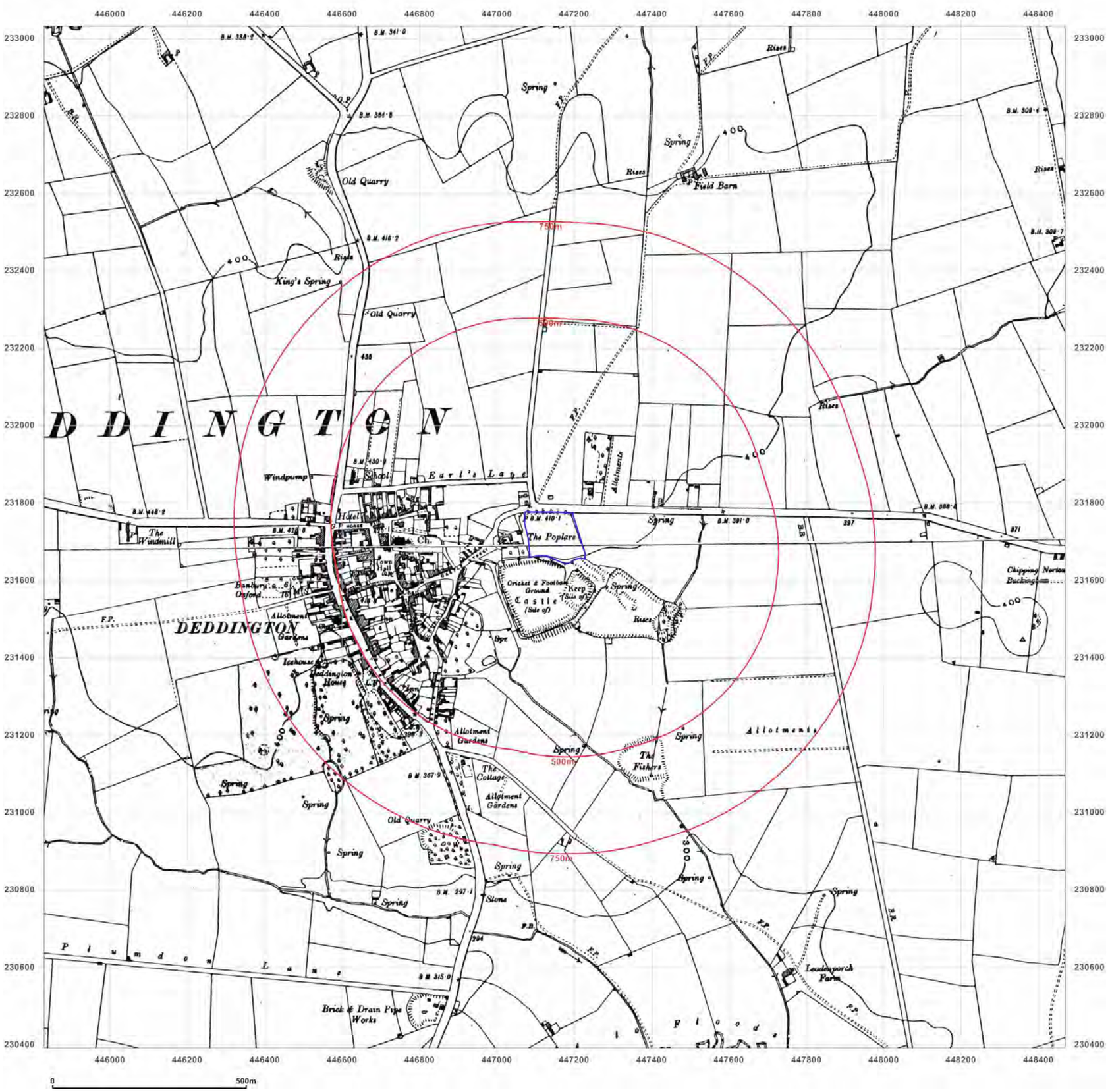

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Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: County Series

Map date: **1919**

Scale: 1:10,560

Printed at: 1:10,560

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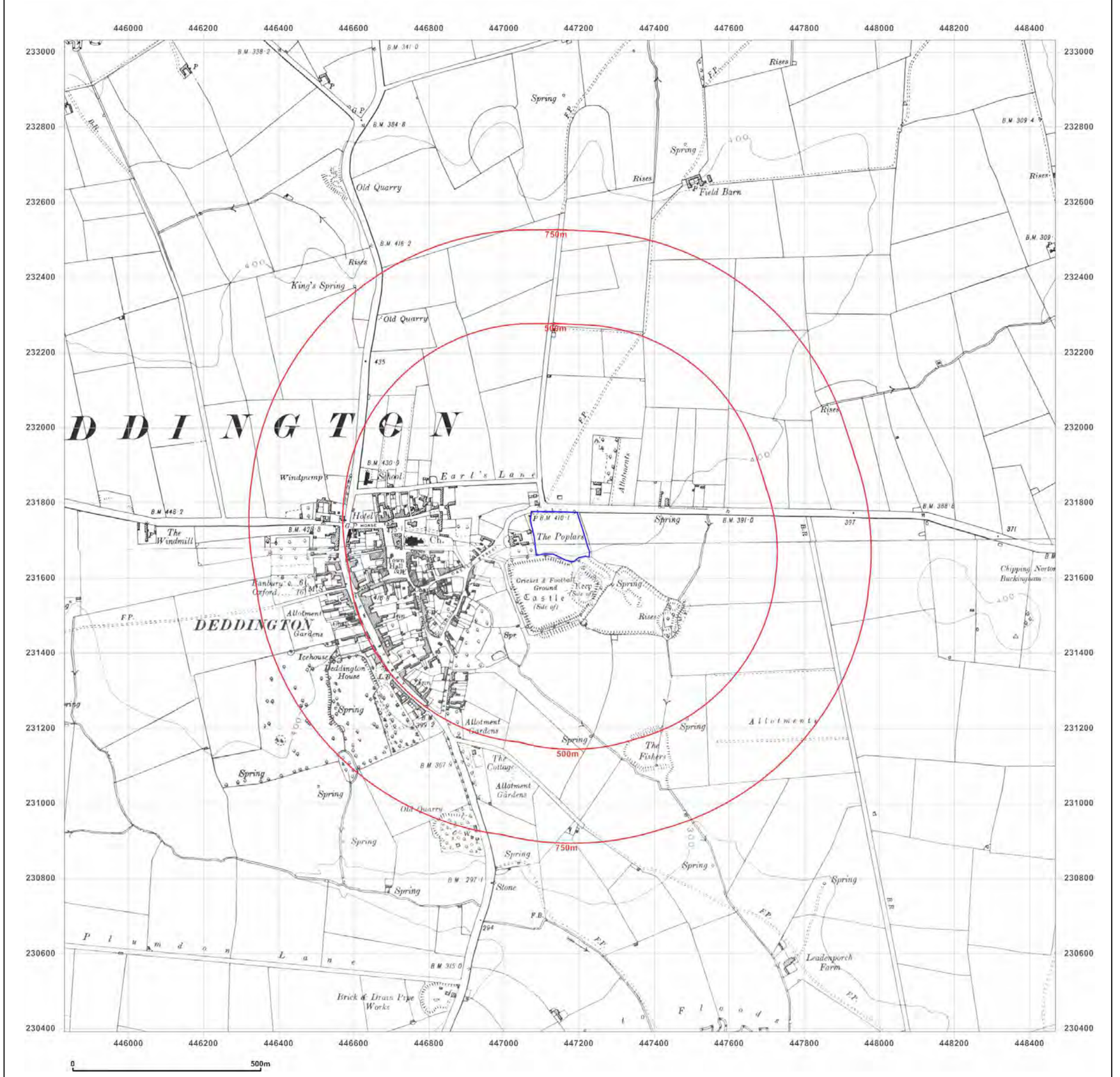

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Report Ref: GS-5639751
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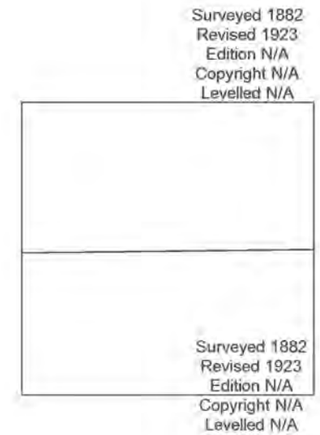

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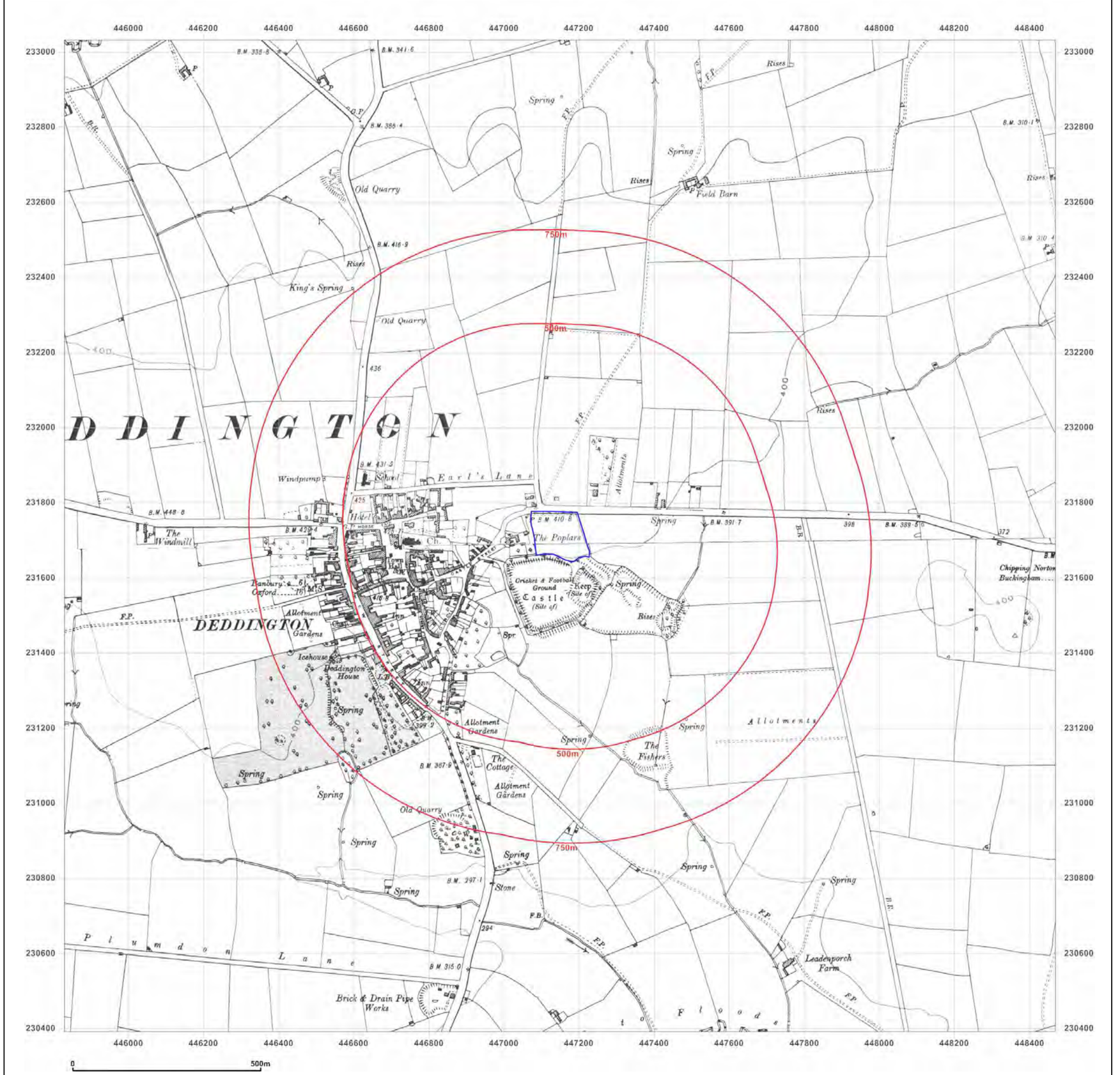

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Report Ref: GS-5639751
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Map Name: County Series

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Printed at: 1:10,560

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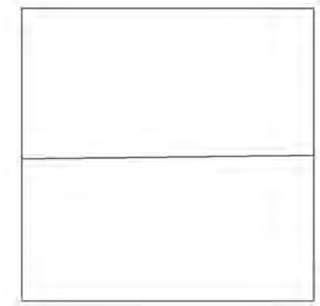

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Surveyed 1882
Revised 1923
Edition N/A
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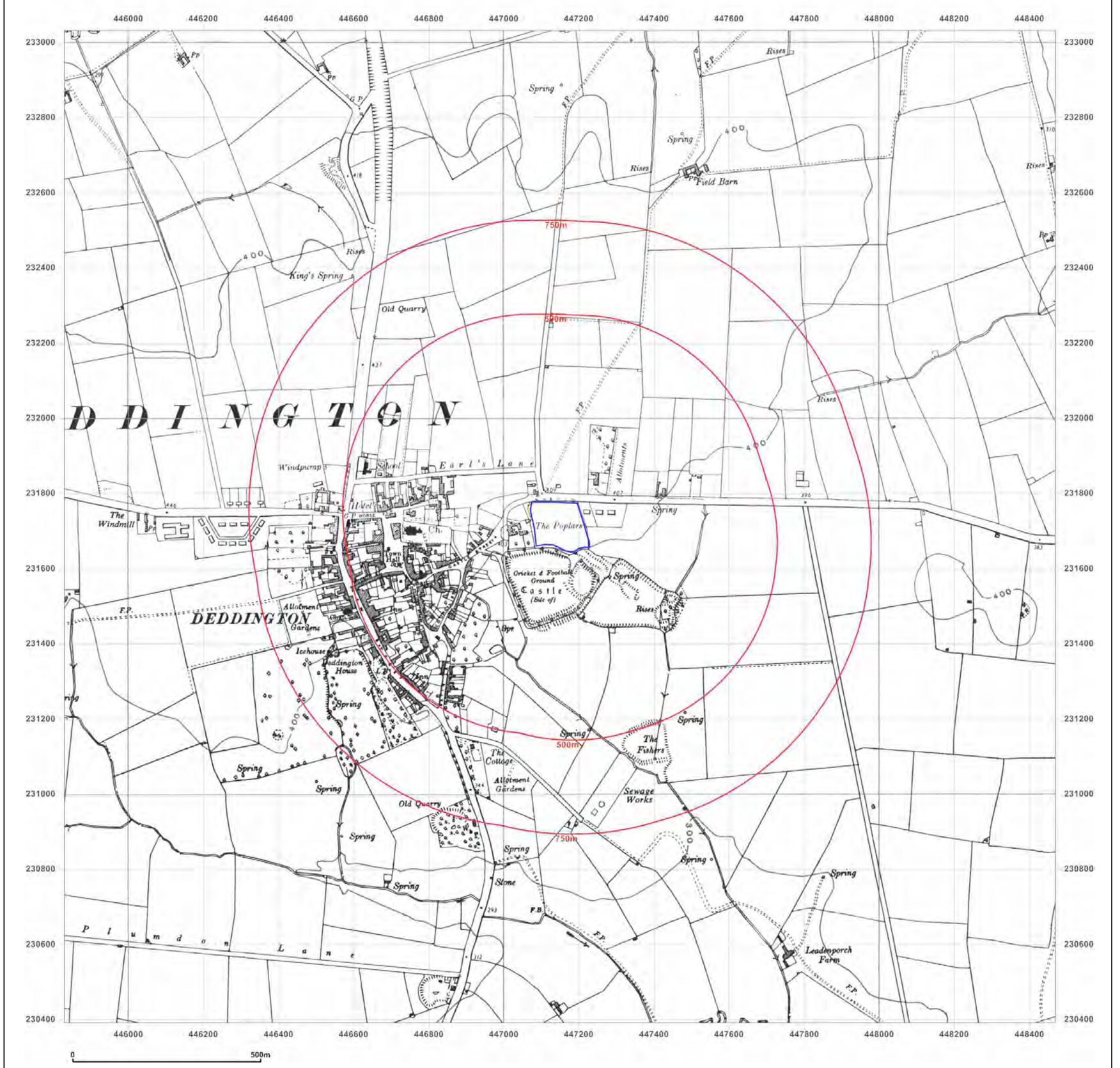

Groundsure INSIGHTS

Site Details:

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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: Provisional

Map date: **1949**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1949
Edition N/A
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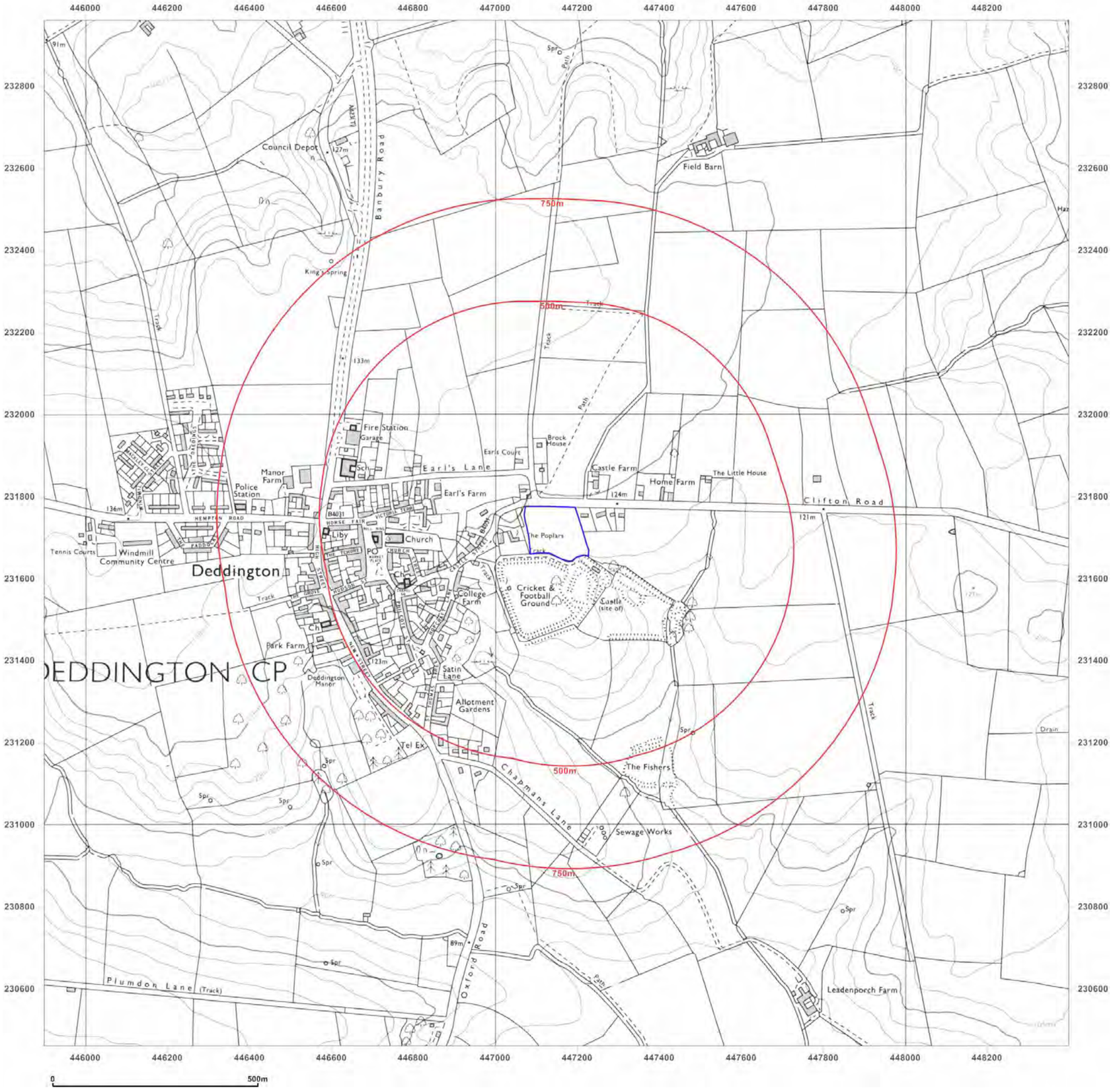

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Site Details:

4, CASTLE STREET,
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Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **1982**

Scale: 1:10,000

Printed at: 1:10,000

N
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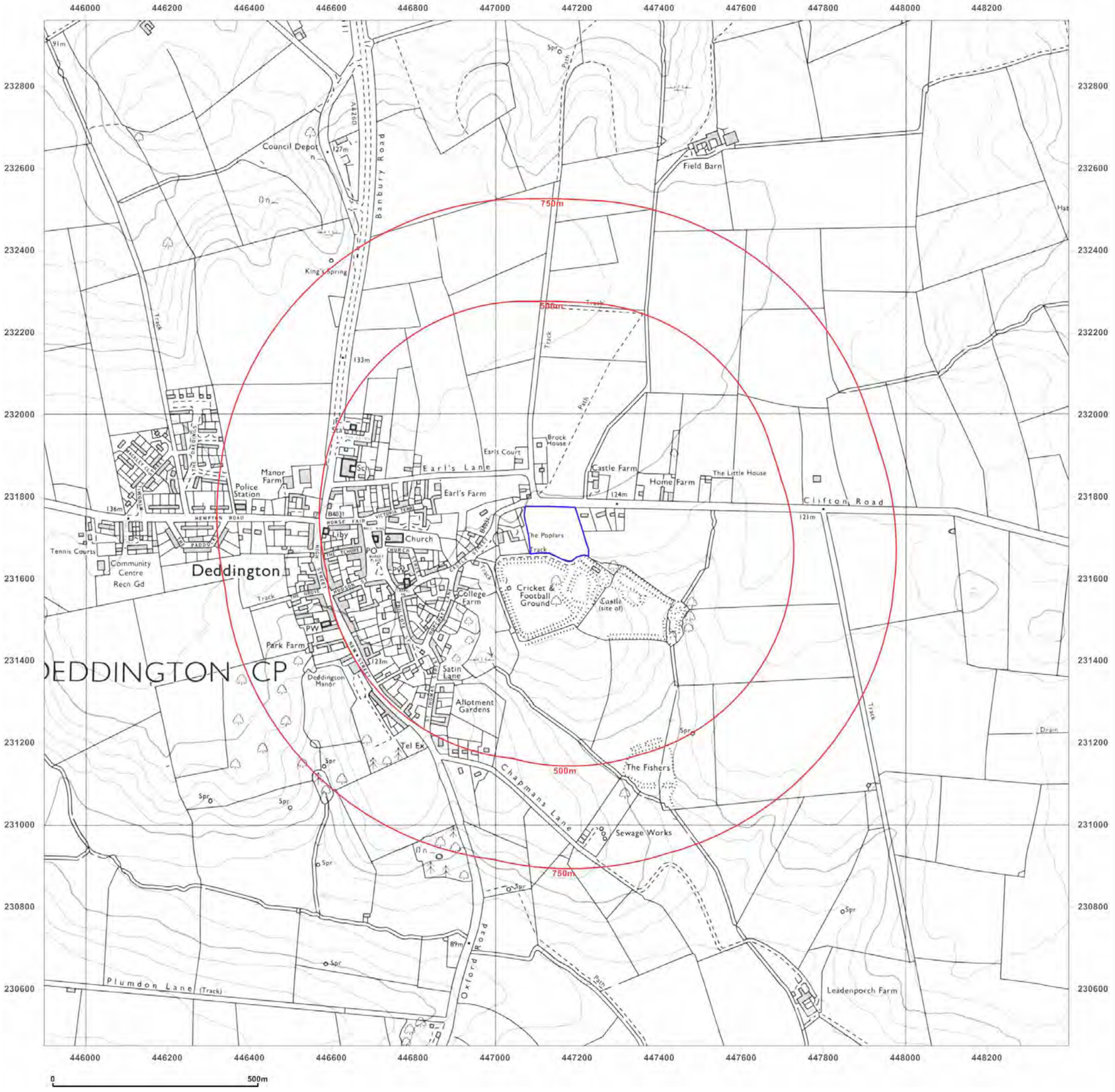
E: info@groundsure.com
W: www.groundsure.com

Production date: 22 November 2018

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



Groundsure INSIGHTS

Site Details:

4, CASTLE STREET,
DEDDINGTON, OX15 0TE

Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **1993**

Scale: 1:10,000

Printed at: 1:10,000

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W E
S

Surveyed 1972
Revised 1993
Edition N/A
Copyright N/A
Levelled N/A

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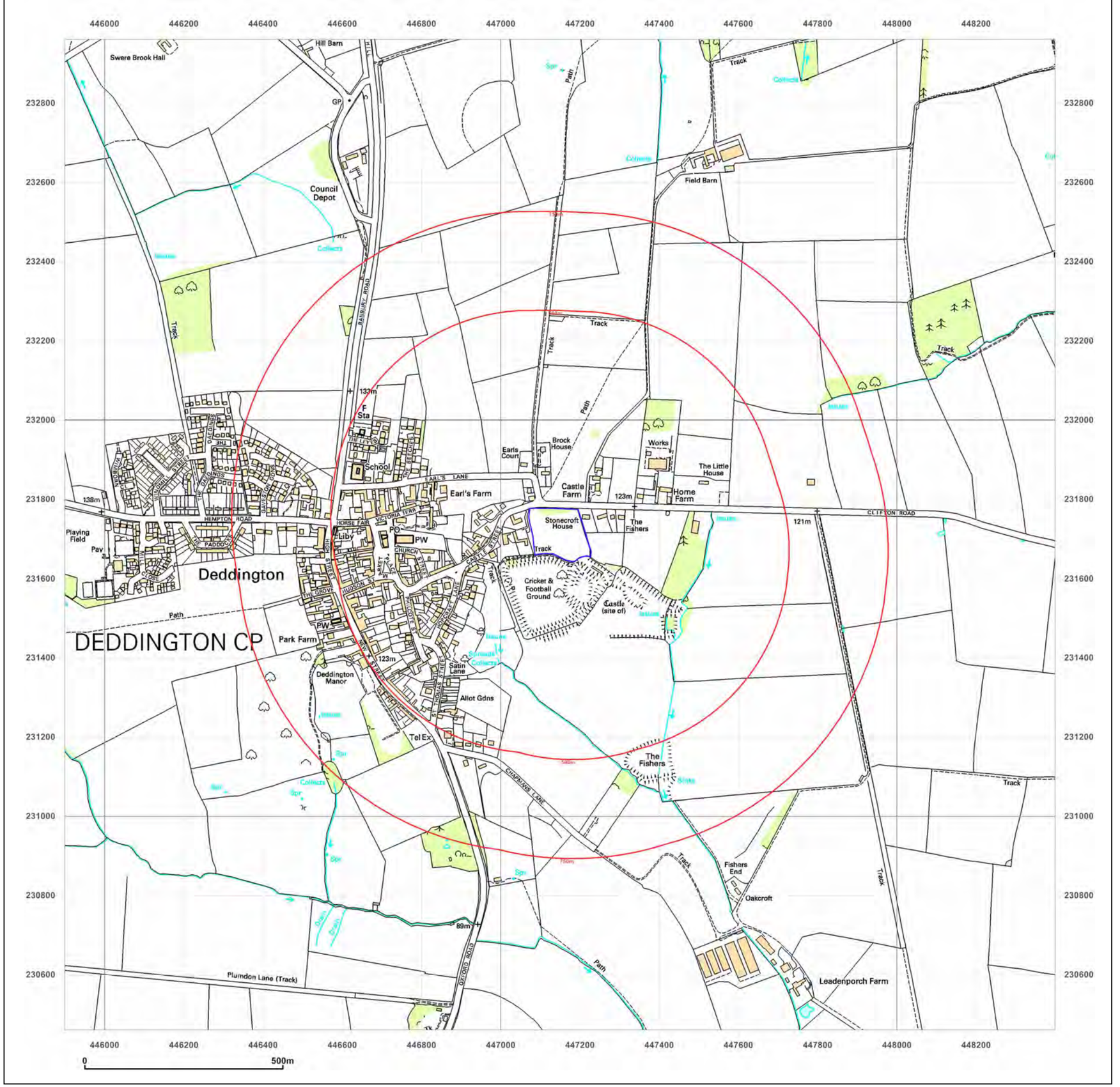

Groundsure INSIGHTS

Site Details:

4, CASTLE STREET,
DEDDINGTON, OX15 0TE

Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

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Map legend available at:
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Groundsure INSIGHTS

Site Details:

4, CASTLE STREET,
DEDDINGTON, OX15 0TE

Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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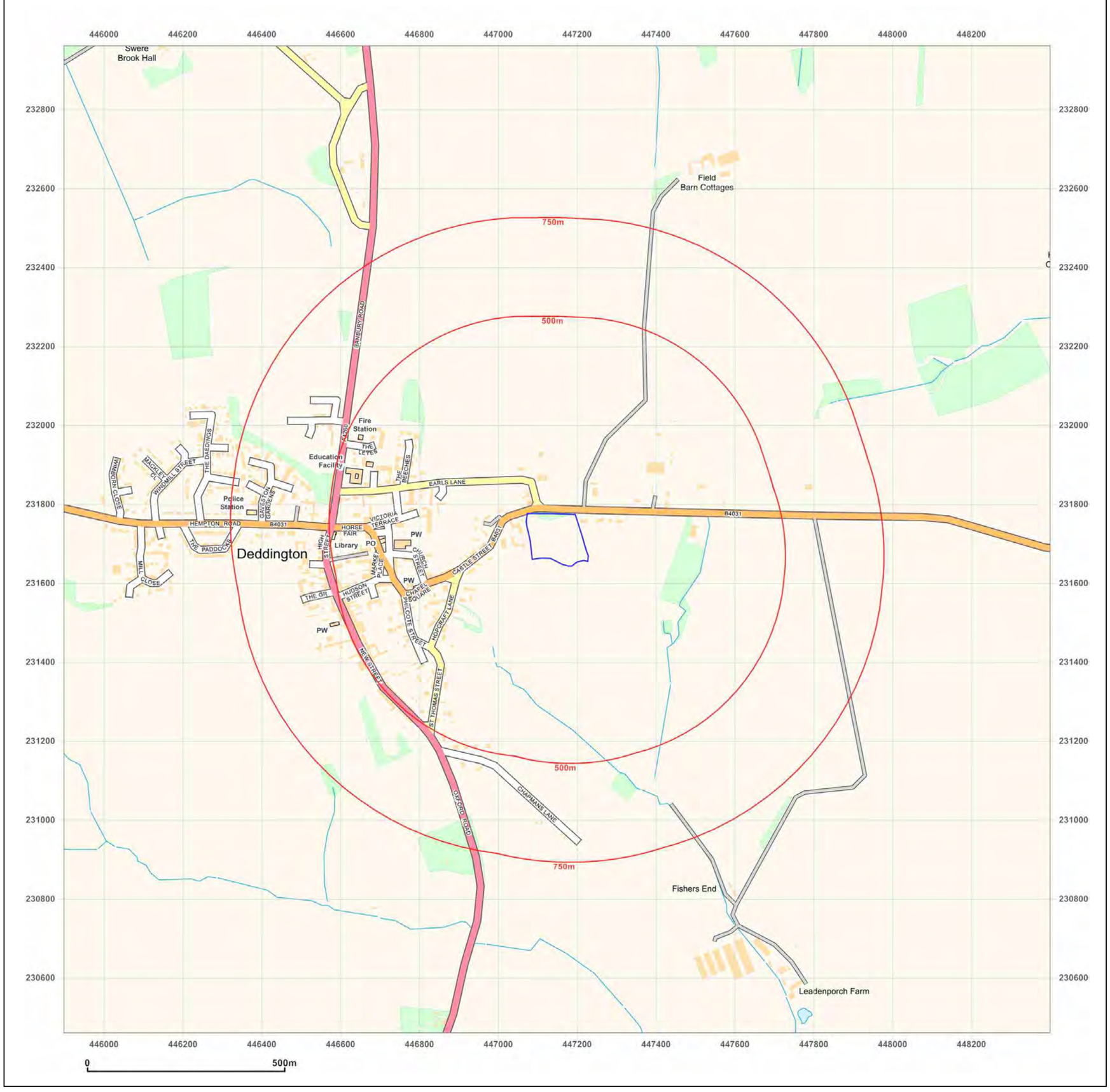
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 22 November 2018

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



Groundsure INSIGHTS

Site Details:

4, CASTLE STREET,
DEDDINGTON, OX15 0TE

Client Ref: 314228_Castle_Street_Deddington
Report Ref: GS-5639751
Grid Ref: 447149, 231711

Map Name: National Grid

Map date: **2014**

Scale: 1:10,000

Printed at: 1:10,000

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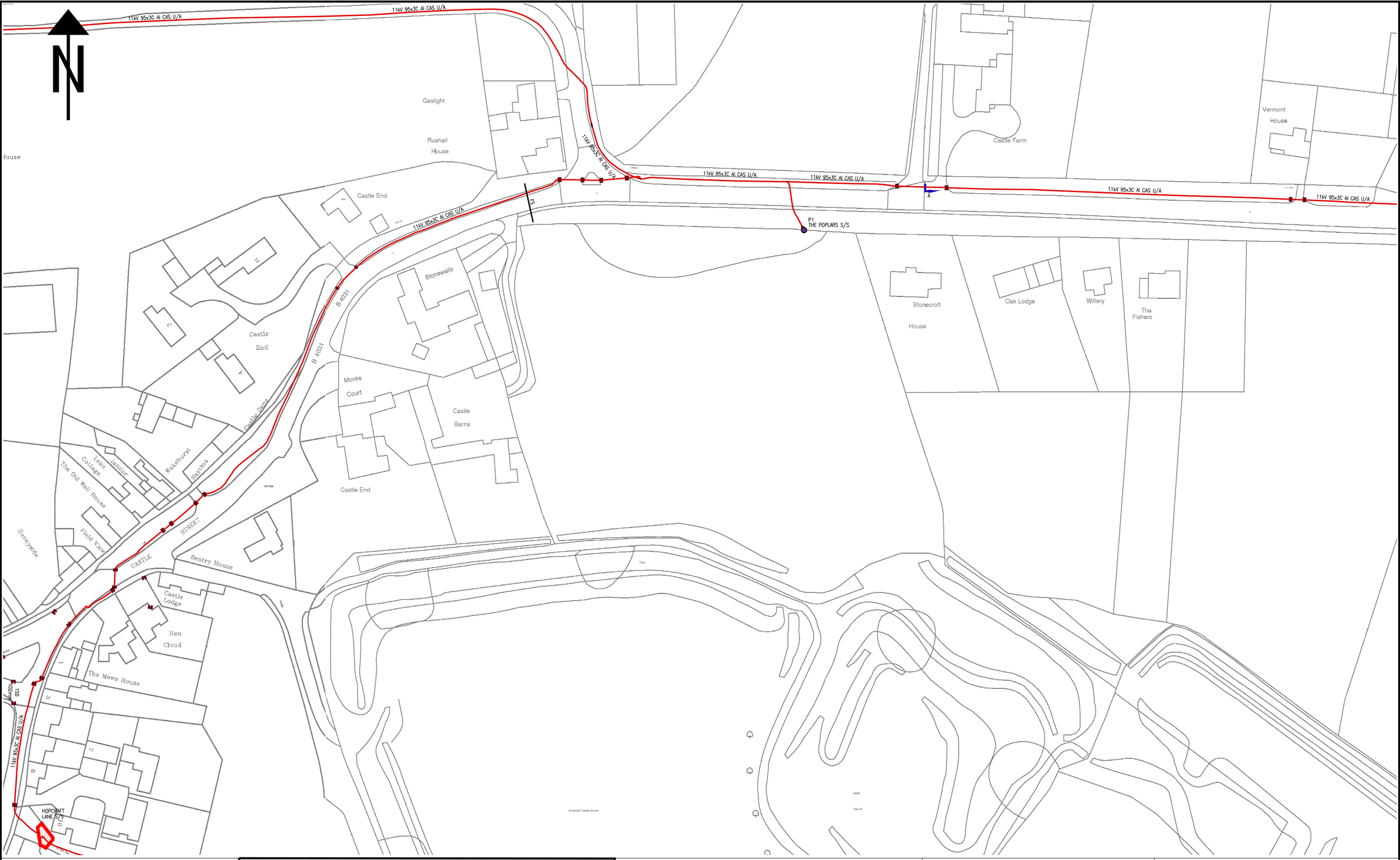
Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 22 November 2018

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

APPENDIX D
UTILITY SERVICE PLANS



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID

	services	l.v.	h.v.	e.h.v.
FOOTPATH/UNMADE	0.45m	0.45m	0.60m	0.80m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m
AGRICULTURAL	1.00m	1.00m	1.00m	1.10m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from the HSE)

WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTE GS6 SHOULD BE CONSULTED. (AVAILABLE FROM THE HSE)

Southern Electric Power Distribution plc
Registered in England No. 04094290
Registered Office: No. 1 Forbury Place,
43 Forbury Road, Reading, RG1 3JH

Land south of Clifton Road
Deddington, OX15 0TH

UNCONTROLLED COPY

Subject to Revision Master held at

Scottish & Southern Electricity Networks

If you are unsure & need to seek advice before commencing excavations please contact
OXFORD
01865-845800

H.V. MAINS RECORD

Grid Ref: SP47133170
Scale: 1:1250
Date: 15/08/2018
MSS331262

NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH/UNMADE	0.45m	0.45m	0.60m	0.80m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m
AGRICULTURAL	1.00m	1.00m	1.00m	1.10m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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OXFORD
01865-845800

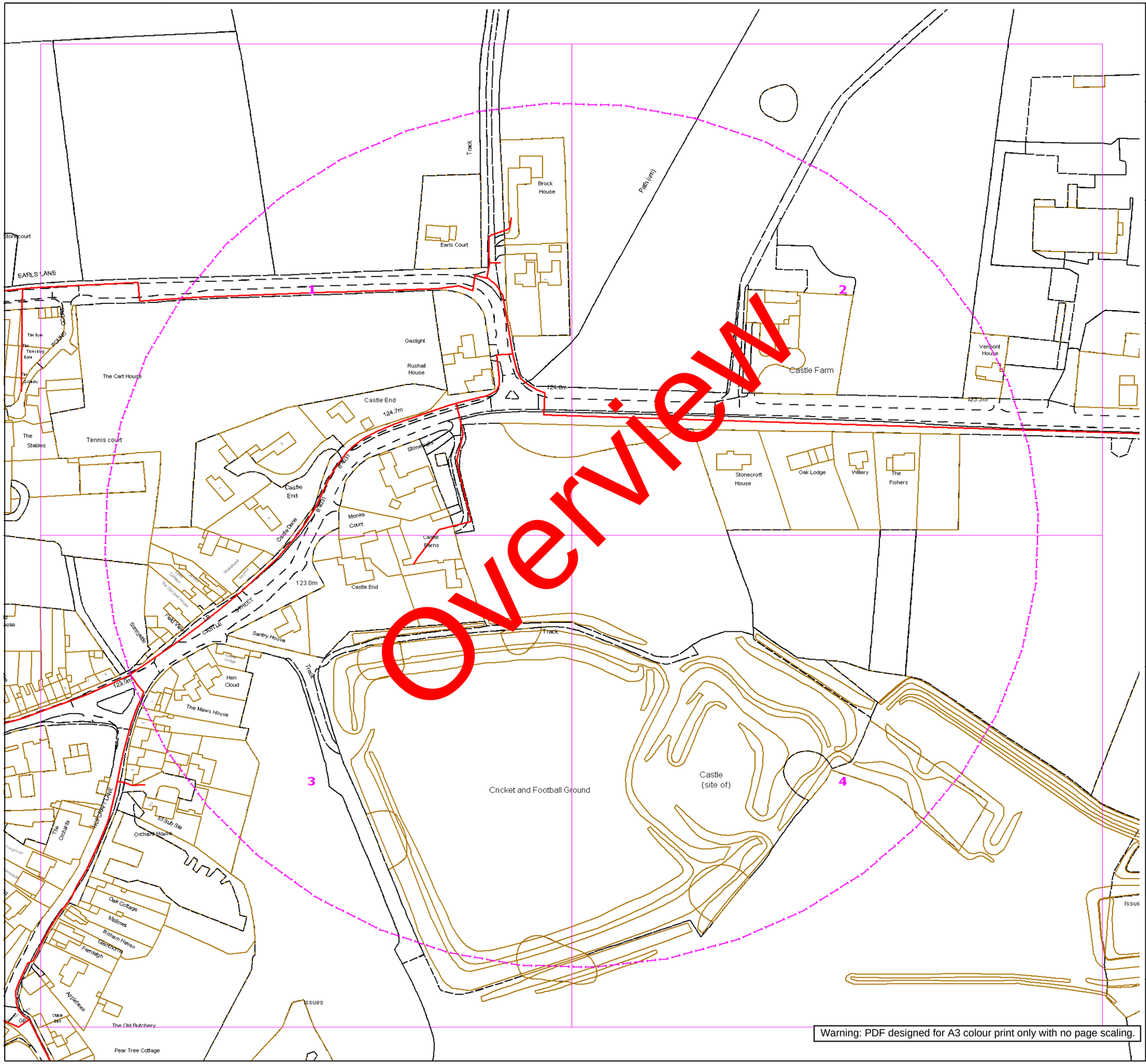
L.V. MAINS RECORD

Grid Ref: SP47133170

Scale: 1:1250

Date: 15/08/2018

MSS331262



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Contact Us

Mapping Enquiries:
All areas

General Enquiries:
All areas

Date Requested: 11/10/2018
Job Reference: 13936380
Site Location: 447129 231713
Requested by:
Mrs Lorraine Parkyn
Your Scheme/Reference:
Deddington

This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc. are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Safety Admin Team on 0800 912 1722 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

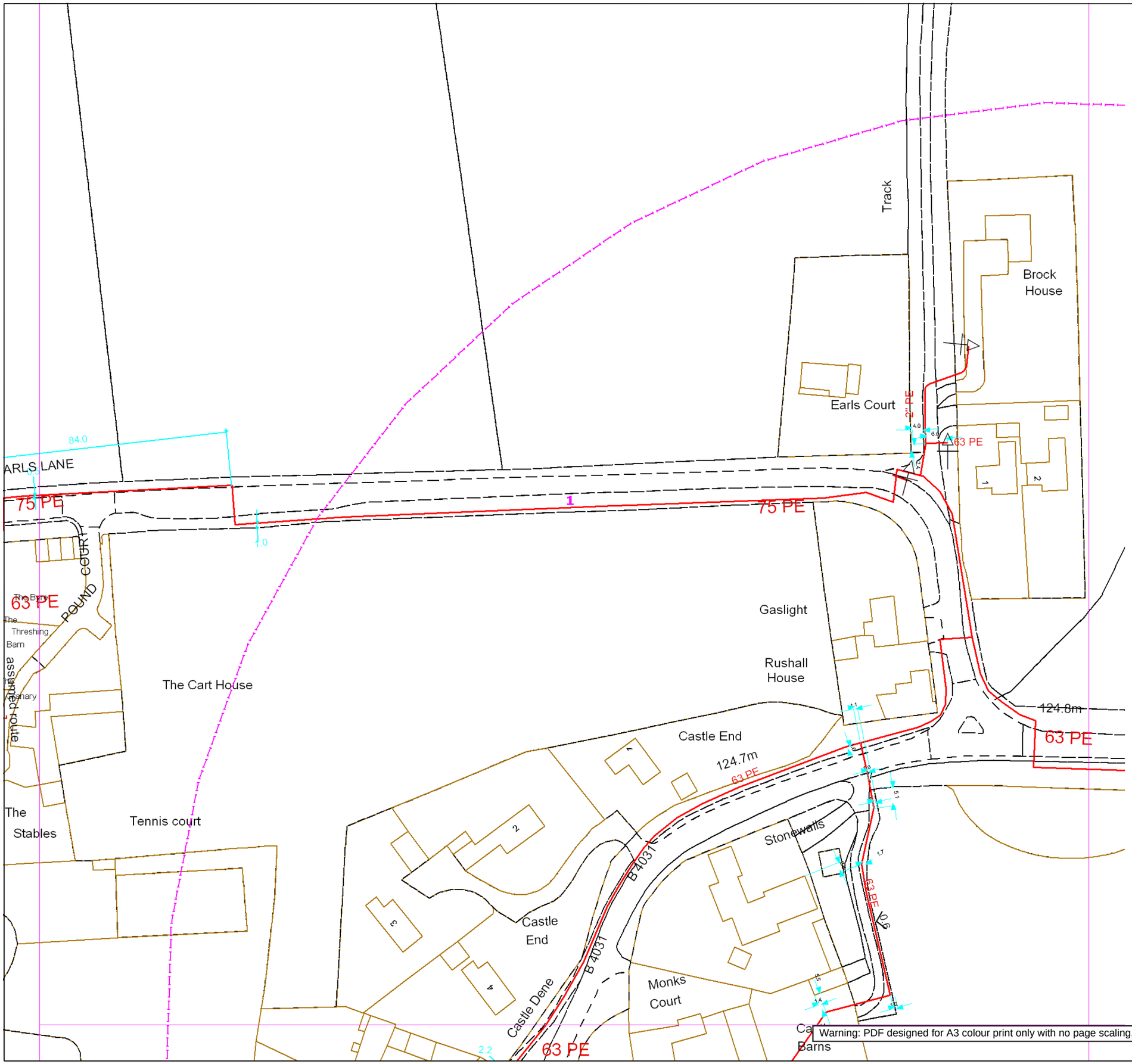
Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 111 999

Low Pressure Mains
Medium Pressure Mains
Intermediate Pressure Mains
High Pressure Mains
LAs
GTs
SSSIs

Some Examples Of Plant Items
Valve | Syphon | Depth of Cover | Diameter Change | Material Change

Digsite: Line: Area:

Linesearch beforeUdig



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Date Requested: 11/10/2018
Job Reference: 13936380
Site Location: 447129 231713
Requested by:
Mrs Lorraine Parkyn
Your Scheme/Reference:
Deddington
Exact Scales:
1:1000 Area or Circle dig site
1:1000 Line dig site

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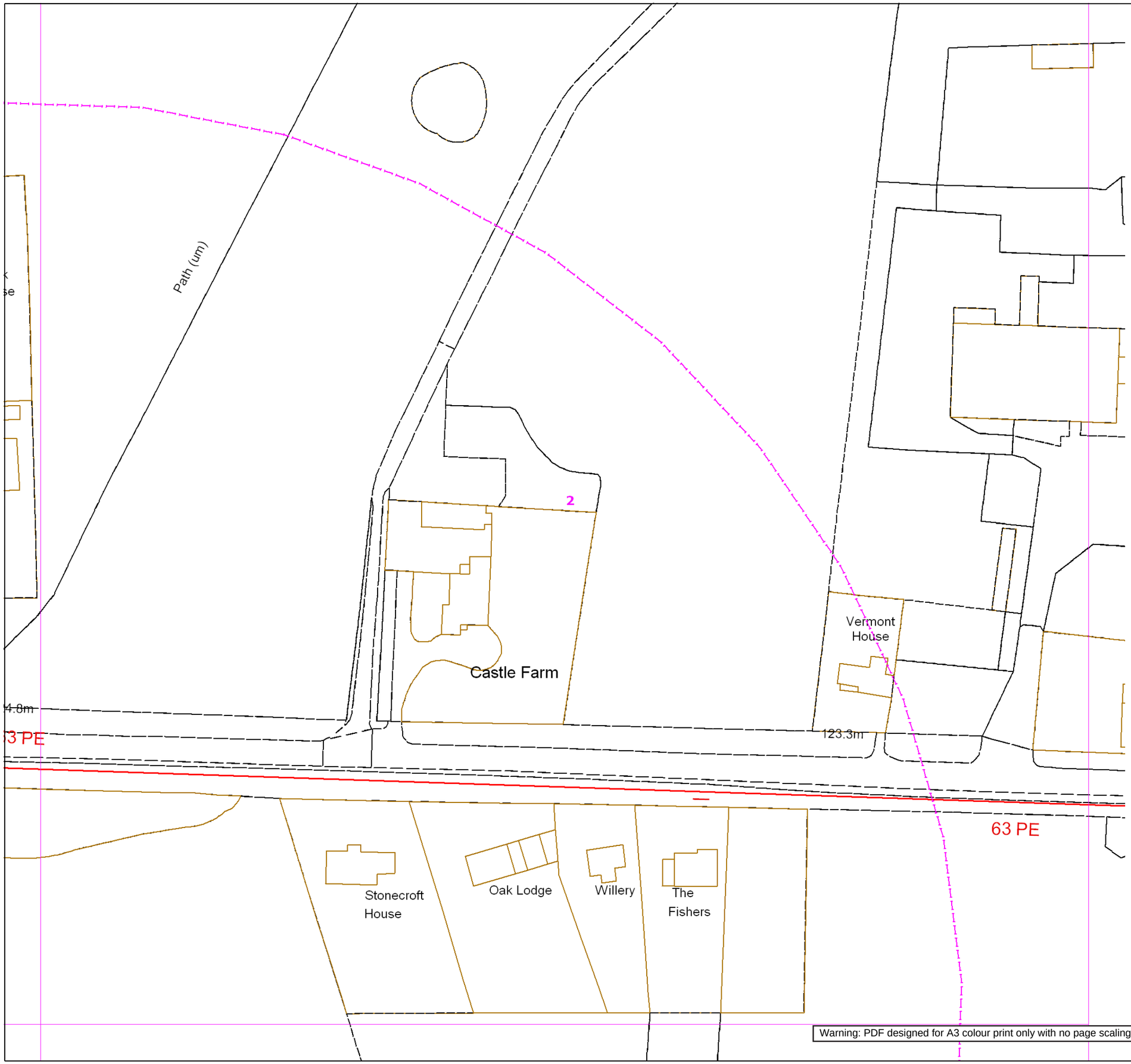
Medium Pressure Mains
Intermediate Pressure Mains
High Pressure Mains
LAs
GTs
SSSIs

Some Examples Of Plant Items
Valve
Syphon
Depth of Cover
Diameter Change
Material Change

Digsite: Line: Area:

Linesearch before dig



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Mrs Lorraine Parkyn
Your Scheme/Reference:
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Exact Scales:
1:1000 Area or Circle dig site
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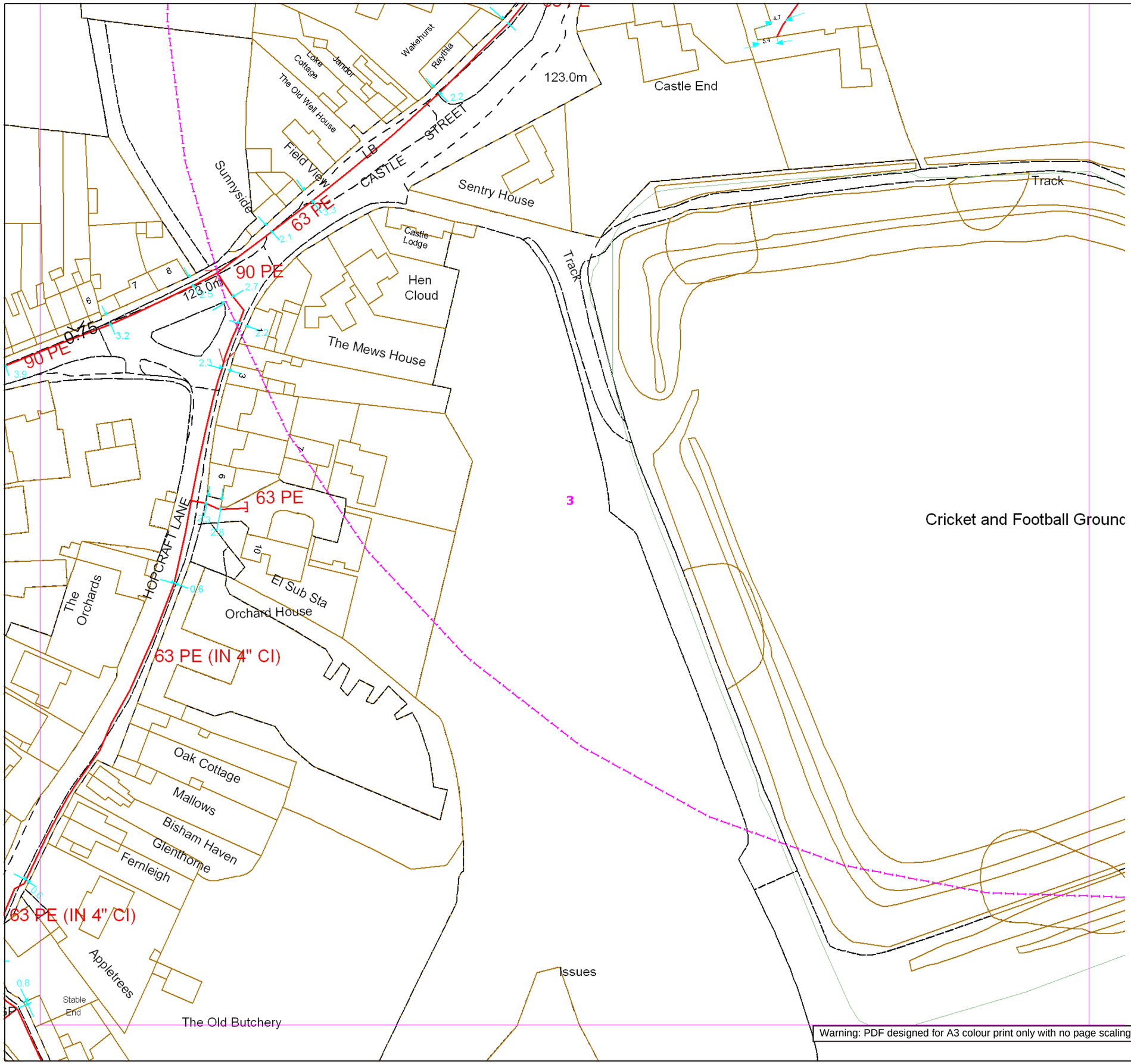
Low Pressure Mains
Medium Pressure Mains
Intermediate Pressure Mains
High Pressure Mains
LAs
GTs
SSSIs

Some Examples Of Plant Items
Valve | Syphon | Depth of Cover | Diameter Change | Material Change

Digsite: Line: Area:

Linesearch before dig



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1:1000 Area or Circle dig site
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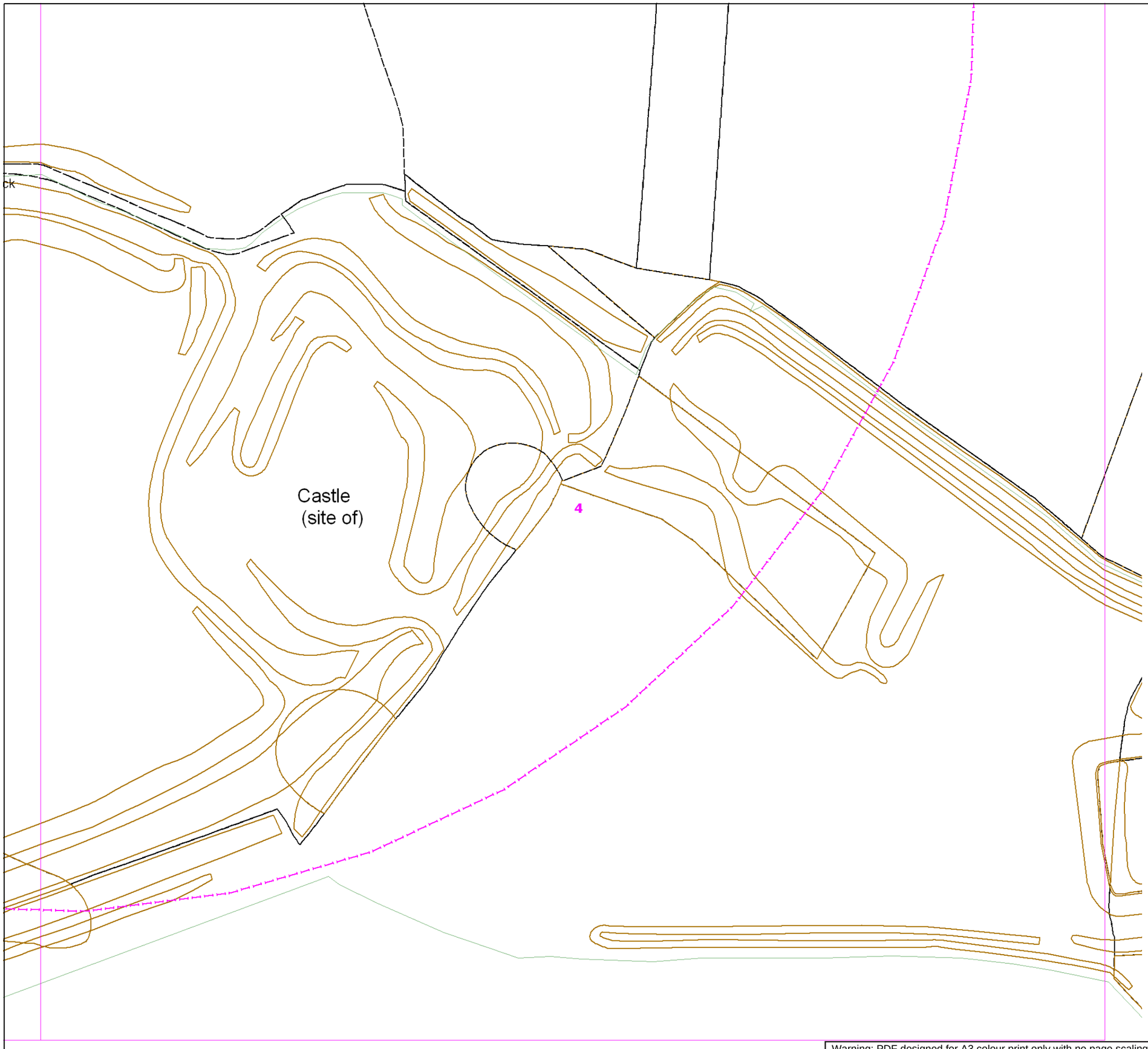

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General Enquiries:
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Job Reference: 13936380
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Requested by:
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Your Scheme/Reference:
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Exact Scales:
1:1000 Area or Circle dig site
1:1000 Line dig site

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High Pressure Mains
LAs
GTs
SSSIs

Some Examples Of Plant Items
Valve | Syphon | Depth of Cover | Diameter Change | Material Change

Digsite: Line: Area:

Linesearch before dig

Flood map for planning

Your reference	Location (easting/northing)	Created
Deddington	**447131/231717**	**22 Nov 2018 2:11**

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn’t include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Environment Agency

Flood map for planning

Your reference
Deddington

Location (easting/northing)
447131/231717

Scale
1:2500

Created
22 Nov 2018 2:11

- Selected point
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

0 20 40 60m

APPENDIX E
SITE RECONNAISSANCE PHOTOGRAPHS

PHOTOGRAPHIC LOG

Photo no.	**Date:**
1	04/12/2018

Description:

View to the south showing the site entrance, shared by neighbours to the west.

Photo No.	**Date:**
2	**04/12/2018**

Description:

View of the western area of the site showing farm machinery and other general waste.

Photo No.	Date:
3	04/12/2018

Description:

View of the derelict corrugated iron shed in the south western corner of the site.

Photo No.	Date:
4	04/12/2018

Description:

View across the site towards the south western corner.

Photo No.	Date:	
5	04/12/2018	
Description: View to the south along the eastern boundary.		

Photo No.	Date:	
6	04/12/2018	
Description: View across the northern portion of the site from the eastern boundary.		

APPENDIX F
TECHNICAL BACKGROUND

G1 Desk Study

Aquifer designation and Source protection zones

Principal aquifer: layers of rock or drift deposit that have high intergranular and/or fracture permeability (usually providing a high level of water storage). They may support water supply and/or river base flow on a strategic scale.

Secondary A aquifer: 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.

Secondary B aquifer: predominantly lower permeability layers that may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

Secondary undifferentiated aquifer: it has not been possible to attribute either a category A or B to a rock type. In most cases this means that it was previously designated as both a minor and non-aquifer in different locations owing to the variable characteristics.

Unproductive' strata: low permeability with negligible significance for water supply or river base flow.

The EA generally adopts a three-fold classification of source protection zones (SPZ) surround abstractions for public water supply. The Site is situated in an area defined as follows:

- Zone 1 or the 'inner protection zone' is located immediately adjacent to the groundwater source and is based on a 50-day travel time from any point below the water table to the source. It is designed to protect against the effects of human activity and biological/chemical contaminants that may have an immediate effect on the source
- Zone 2 or the 'outer protection zone' is defined by a 400-day travel time from a point below the water table to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants
- Zone 3 or the 'total catchment' is the area around the source within which all groundwater recharge is presumed to be discharged at the source.

Preliminary risk assessment methodology

CLR11 outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. Under CLR11, three stages of risk assessment exist: preliminary, generic quantitative and detailed quantitative. An outline conceptual model should be formed at the preliminary risk assessment stage that collates all the existing information pertaining to a site in text, tabular or diagrammatic form. The outline conceptual model identifies potentially complete (termed possible) contaminant linkages (contaminant–pathway–receptor) and is used as the basis for the design of the site investigation. The outline conceptual model is updated as further information becomes available, for example as a result of the site investigation.

Production of a conceptual model requires an assessment of risk to be made. Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk. RSK has adopted guidance provided in CIRIA C552 for use in the production of conceptual models.

The likelihood of an event can be classified on a four-point system using the following terms and definitions based on CIRIA C552:

- highly likely: the event appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution
- likely: it is probable that an event will occur or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term
- low likelihood: circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term
- unlikely: circumstances are such that it is improbable the event would occur even in the long term.

The severity can be classified using a similar system also based on CIRIA C552. The terms and definitions relating to severity are:

- severe: short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short-term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000)
- medium: chronic damage to human health ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem
- mild: pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures or the environment
- minor: harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

Once the probability of an event occurring and its consequences have been classified, a risk category can be assigned according to the table below.

		Consequences			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**Highly likely**	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low

Definitions of these risk categories are as follows together with an assessment of the further work that may be required:

- very high: there is a high probability that severe harm could occur or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability; urgent investigation and remediation are likely to be required
- high: harm is likely to occur. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required. Remedial works may be necessary in the short term and are likely over the long term
- moderate: it is possible that harm could arise, but it is unlikely that the harm would be severe and it is more likely that the harm would be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term
- low: it is possible that harm could occur, but it is likely that if realised this harm would at worst normally be mild
- very low: there is a low possibility that harm could occur and if realised the harm is unlikely to be severe.

G2 Site Investigation Methodology

Ground gas monitoring

An infrared gas meter was used to measure gas flow, concentrations of carbon dioxide (CO_2), methane (CH_4) and oxygen (O_2) in percentage by volume, while hydrogen sulphide (H_2S) and carbon monoxide (CO) were recorded in parts per million. Initial and steady state concentrations were recorded. In addition, during the first monitoring round, all wells were screened with a PID to establish if there are any interferences and cross-sensitivity of other hydrocarbons with the infrared gas meter.

Low flow groundwater sampling

Groundwater samples were retrieved using a United States Environment Protection Agency (USEPA) approved low-flow purging and sampling methodology.

The low-flow method relies on moving groundwater through the well screen at approximately the same rate as it flows through the geological formation. This results in a significant reduction in the volume of water extracted before sampling and significantly reduces the amount of disturbance of the water in the monitoring well during purging and sampling. Drawdown levels in the monitoring well and water quality indicator parameters (pH, temperature, electrical conductivity, redox potential and dissolved oxygen) are monitored during low-flow purging and sampling, with stabilisation indicating that purging is complete and sampling can begin. As the flow rate used for purging, in most cases, is the same or only slightly higher than the flow rate used for sampling, and because purging and sampling are conducted as one continuous operation in the field, the process is referred to as low-flow purging and sampling.

G3 Site Investigation Methodology

Statistical assessment

Statistical analysis of the results has been conducted in accordance with *Guidance on Comparing Soil Contamination Data with a Critical Concentration* (CIEH and CL:AIRE, 2008) as detailed in Appendix D.

Statistical analysis is utilised to establish whether the land is suitable for the proposed use under the land use planning system by attempting to answer a key question. For a site being developed the key question is: '*can we confidently say that the level of contamination on this land is low relative to some appropriate measure of risk?*' More specifically, this is expressed as '*Is there sufficient evidence that the true mean concentration of the contaminant (μ) is less than the critical concentration (C_c)?*', where the critical concentration could be the GAC or a site-specific assessment criterion (SSAC). The true mean (μ) is unknown and therefore a conservative estimate, termed the upper confidence limit (UCL), of this value is derived from the data. The UCL is then compared against the GAC.

In statistical terms the question above is handled through the use of a formal hypothesis – the null hypothesis and the alternate hypothesis. The statistical tests are structured to show (with a defined level of confidence, in this case 95%) which of the two hypotheses is most likely to be true, by determining whether the null hypothesis can be rejected.

For consideration under the planning regime, the null (H_0) and alternative (H_1) hypotheses are presented in Table 26

Null and alternative hypotheses

Hypothesis	Equation	Description
Null (H_0)	$\mu \geq C_c$	The true mean concentration is equal to, or greater than, the critical concentration
Alternative (H_1)	$\mu < C_c$	The true mean concentration is less than the critical concentration

Therefore, if the null hypothesis is accepted for a certain contaminant it can be concluded that its concentration is high relative to the critical concentration, which in the case of this assessment is taken to be the GAC/SSAC and as such the whole site may be classed as being contaminated by a particular substance.

In addition, the statistical guidance provides an outlier test (Grubbs' test) that has been used within this assessment for the identification of 'outliers' or 'hotspots'. The 'outlier' test is conducted before undertaking statistical analysis (and 'outliers' may be removed from the dataset) but **only** where the conceptual model supports this.

The statistical tests applied to the dataset are selected based on whether the data is normally or non-normally distributed. The distribution of the dataset has been assessed using the Shapiro-Wilks normality test. Where the dataset has been found to be normally distributed the one sample t-test is undertaken. Where data has been found to be non-normally distributed Chebyshev's theorem is utilised.

Reuse of suitable materials

The Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011) (CoP) was developed in cons**u**ltation with the Environment Agency and development industry to enable the re-use of materials under certain scenarios and subject to demonstrating that specific criteria are met. The current reuse scenarios covered by the CoP comprise

- reuse on the site of origin (with or without treatment)
- direct transfer of clean and natural soils between sites
- use in the development of land other than the site of origin following treatment at an authorised Hub site (including a fixed soil treatment facility).

The importation of made ground soils (irrespective of contamination status) or crushed demolition materials is not permitted currently under the CoP and requires either a standard rules environmental permit or a U1 waste exemption (see below).

In the context of excavated materials used on-sites undergoing development, four factors are considered to be of particular relevance in determining if the material is a waste or when it ceases to be waste:

- the aim of the Waste Framework Directive is not undermined, i.e. if the use of the material will create an unacceptable risk of pollution of the environment or harm to human health it is likely to be waste
- the material is certain to be used
- the material is suitable for use both chemically and geotechnically
- only the required quantity of material will be used.

The CoP requires the preparation of a materials management plan (MMP) that confirms the above factors will be met. This plan needs to be reviewed by a 'Qualified Person' (QP) who will then issue a declaration form to the EA. As the project progresses, data must be collated and on completion a verification report produced that shows the MMP was followed and describes any changes.

The MMP establishes whether specific materials are classified as waste and how excavated materials will be treated and/or reused in line with the CoP. The MMP is likely to form part of the site waste management plan.

APPENDIX G
EXPLORATORY HOLE RECORDS

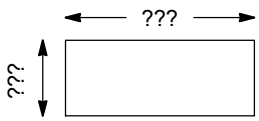
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Castle Street, Deddington	Blue Cedar Homes Ltd	TP1

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
Castle Street, Deddington	04.12.18	---	---	1 of 1
	End: 04.12.18			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Turf overlying brown slightly sandy slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse of limestone and quartzite.	(0.30)	
							0.30	
						Orangish brown slightly sandy slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse of ironstone, limestone and quartzite.	(0.60)	
							0.90	
						Strong brownish grey LIMESTONE recovered as gravels and cobbles.	1.05	
						Trial pit terminated at 1.05m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	???	

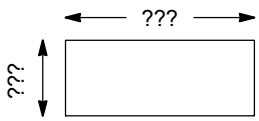
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Castle Street, Deddington	Blue Cedar Homes Ltd	TP2

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
Castle Street, Deddington	04.12.18	---	---	1 of 1
	End: 04.12.18			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Turf overlying brown slightly sandy slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse of limestone and quartzite.	(0.30) 0.30	
						Orangish brown slightly gravelly slightly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse of ironstone, limestone and quartzite.	(1.00) 1.30	
						Strong brownish grey LIMESTONE recovered as clayey gravels, cobbles and boulders.	(0.30) 1.60	
						Trial pit terminated at 1.60m depth.		

Plan (Not to Scale)



General Remarks

1. Hard digging from 1.00m depth.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	???	

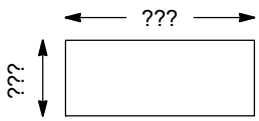
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Castle Street, Deddington	Blue Cedar Homes Ltd	TP3

Contract Ref:	Start:	Ground Level:	Co-ordinates:	Sheet:
Castle Street, Deddington	04.12.18	---	---	1 of 1
	End: 04.12.18			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Turf overlying brown slightly gravelly slightly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse of limestone and quartzite.	(0.30)	
							0.30	
						Orangish brown slightly gravelly slightly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse of ironstone, limestone and quartzite. . . . at 0.70m becoming very gravelly. . . . from 0.80m hard digging.	(1.10)	
							1.40	
						Strong brownish grey LIMESTONE recovered as clayey gravels, cobbles and boulders.	1.60	
						Trial pit terminated at 1.60m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	Hand tools	???	