A PHASE I LAND CONTAMINATION ASSESSMENT CARRIED OUT AT:

CROSSROADS NURSERY, QUADRING, LINCOLNSHIRE, PE11 4PJ



CLIENT:	**Crossroads Nursery Limited**
REFERENCE:	**CPJS/21.320/PhaseI**
DATE:	**19 October 2021**

A F Howland Associates Limited
The Old Exchange
Newmarket Road
Cringleford
Norwich
NR4 6UF

Tel: 01603 250754
Email: admin@howland.co.uk
Website: www.howland.co.uk

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1. INTRODUCTION

A F Howland Associates Limited was instructed by Crossroads Nursery Limited (the "Client") to carry out a Phase I Desk Study of part of Crossroads Nursery, Quadring, Lincolnshire, PE11 4PJ (Drawing 21.320/PhaseI/01). This was required to support a planning application for a proposed residential development of 'Phase 2' and 'Phase 4' of the proposed development, as defined on Moulton Land and Planning drawing CN/pl/phasing in Appendix C. The development proposals are for the construction of residential properties with associated soft landscaping, parking, access roads and a public open space area.

This report presents archive historical and environmental information and gives details of a walkover survey undertaken to confirm the current condition of the site and surrounding area. An environmental database report was commissioned to provide background information and is included in Appendix B. The information is used to develop a preliminary conceptual model using the source-pathway-receptor principle and provides a qualitative risk assessment of land contamination.

The report has been carried out in general accordance with accepted best practice and methodologies (BSI, 2017; EA, 2020; DCLG, 2013) and was prepared for the sole and exclusive use of the Client and its advisors. Other parties using the contained information do so at their own risk and any duty of care to those parties is specifically excluded subject to copyright as detailed below.

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2. SITE LOCATION

Crossroads Nursery is located off Main Road approximately 125 m north of the junction with Quadring Road, Water Gate and Town Drove roughly in the centre of the village of Quadring. The topographical elevation of the site is about 8 mOD. The part of the site to be developed includes a field to the rear of the glasshouse complex, as indicated by the

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area defined as 'Phase 2' and 'Phase 4' and the public open space ('POS') area between, as shown on drawing 21.320/PhaseI/02 presented in Appendix C.

3. GEOLOGY

The regional geology is mapped for the area by the British Geological Survey (BGS, 2021) to show bedrock geology of the Oxford Clay Formation overlain by superficial Tidal Flat deposits comprising clay and silt.

4. HYDROLOGY

The bedrock geology and superficial deposits are both designated as Unproductive Aquifer status. The nearest significant water feature is a pond about 50 m south-west of the site. There are a number of drainage ditches within the wider surrounding area. The site lies outside of any groundwater source protection zones and does not lie within a drinking water safeguard zone. There is a surface water abstraction licence about 500 m to the south of the site associated with agricultural use.

5. REVIEW OF HISTORICAL ARCHIVES

A review of historical maps and aerial images has been undertaken to identify historical potentially contaminating land uses on site and in the surrounding area. A summary is provided below and the maps are presented in Appendix B.

Source	Date	Detail
OS Mapping	**1885**	The site forms parts of fields No. 206 to 209. Field 206 is surveyed as an orchard and the others do not have any features suggesting they were given over to arable farming. There are several ponds in the surrounding area and drainage ditches surrounding and bisecting the site. The current alignment of Main Road and Water Gate is established.
	1904	No significant changes are recorded on the site and the surrounding areas.
	1931	The site remains generally unchanged. There are glasshouses surveyed to the south-east of the site.
	1948-1956	The site remains generally unchanged.
	1972	A Nursery with a large glasshouse is surveyed immediately to the west of site, representing the first development of the wider Crossroads Nursery site.
	1977	The site and surrounds remain generally unchanged.

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Source	Date	Detail
	1995	The glasshouse to the west the site was noted to have increased in footprint, covering the site and the surrounding area to the south-east. A drainage ditch that bisected the site is no longer surveyed and instead another runs parallel adjacent to the glasshouse to the west.
Aerial Imagery	**1999**	There are more glasshouses surveyed to the west of the site. There are also polytunnels to the west of the site.
	2004-2006	No significant changes are recorded on the site.
	2010	Part of the glasshouses to the east of the site have been demolished and left as open land.
	2015	No significant changes are recorded on the site. .

Table 1 – Summary of the history of the site and surrounding area

The only potentially contaminative activity that has been identified historically is the Garden Nursery, presently active to the west of the site.

Potentially contaminative historical land uses are also listed within the environmental database report (Appendix B). In this instance there are no additional historical potentially contaminative land uses to those identified below within a distance that would influence the site.

6. HAZARDOUS GAS SOURCES

Building Research Establishment report BR211 (BRE, 2015) indicates that the site is not within an area where specific protection from radon gas is required.

The environmental database report does not identify any historic or existing landfill sites or other waste sites within 1 km of the site.

Potentially infilled land has been identified within the surrounding area but this relates to the adjacent springs, historic saw pit and graveyard located greater than 300 m south-east of the site. There is no evidence to support the presence of infilled land at the springs. A drainage ditch was apparently diverted prior to 1995, anecdotal evidence suggests this was simply 'ploughed in'. Consequently, this and the other areas of potentially infilled land are of insignificant size and/or are unlikely to be significant sources of ground gas.

7. CURRENT LAND USES SURROUNDING THE SITE

There are no active or historical landfills within a kilometre of the site. A pollution incident is recorded as having occurred in 2004 approximately 500 m to the south of the site. It is

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recorded as having had a major impact on land and was associated with 'specific waste materials'. The incident is recorded as not impacting air or water.

8. WALKOVER SURVEY

A walkover survey was carried out on the 13 October 2021 to enable identification of the current land uses and other relevant details not otherwise identified from the archival information. The pertinent details are provided on drawing 21.320/PhaseI/02, presented in Appendix C.

Access to the Nursery was from the south, off Water Gate, close to the junction with Main Road. The field to the rear was accessed through the car park and via the southern perimeter of the glasshouses. An area in the south west corner of the field was used for storage of small plastic crates, plug trays, flower pots, concrete blocks, old tyres, disused machinery such as a conveyor and a hopper, wooden shipping crates, stacked patio slabs and wooden saw horses.

The majority of the site was a field used for growing plants that was surrounded by a drainage ditch or stream to the north, east and west. The southern boundary of the site was demarcated by 6 ft wooden fencing associated with residential housing to the south.

No potential sources of contamination were noted during the walkover.

9. DISCUSSION OF ENVIRONMENTAL ISSUES

A review of historical and contemporary archives suggests that part of the site was used as an orchard and that the site has been used as a field for over 100 years.

The regional geology is mapped for the area to show bedrock geology of the Oxford Clay Formation, designated Unproductive Aquifer status, overlain by superficial Tidal Flat deposits of clay and silt, also designated Unproductive Aquifer status.

The nearest significant water feature is a pond about 75 m to the south west of the site. There are a number of drainage ditches within the surrounding area and bordering the site. The site lies outside of any Groundwater Source Protection Zones and does not lie within a Drinking Water Safeguard Zone. There is a surface water abstraction licence about 500 m to the south of the site associated with agricultural use.

No viable sources of ground gas have been identified on site or in the surrounding area.

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10. PRELIMINARY CONCEPTUAL MODEL

Following a review of the archival information and the walkover survey a Preliminary Conceptual Model was devised to determine the risk to appropriate targets from the potential contaminating activities assessed for the site.

The Preliminary Conceptual Model collates the evidence gained and establishes the potential linkages that may exist under the principle of “source-pathway-receptor”. This is presented in Table 2 below.

A risk category[1] is determined for the potential linkages and an assessment made of risk and the significance of that risk from professional judgement. Where appropriate, further work is recommended to assess whether the potential linkages are realised.

[1] Risk assessment classification included as Appendix D

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Source of Contamination	Pathway	*Receptor*	Probability and Reasoning	Consequence and Reasoning	Risk Classification
Potentially contaminated soils from historical and current use	Direct contact, inhalation, ingestion	Human end-users	**Unlikely** – No potential contamination sources have been identified during the archive review or site walkover	**Medium** – Chronic damage to human health	**Low Risk**
		Construction workers		**Mild** – Potential short term exposure; can be managed with toolbox talks, PPE and adoption of good hygiene practices	**Very Low Risk**
	Percolation and migration of leachate / mobile contaminants	Groundwater		**Medium** – The site was noted to overly bedrock and superficial deposits both designated an unproductive strata aquifer status	**Low Risk**
		Surface water		**Medium –** The closest surface water feature was located a considerable distance from the site	**Low Risk**
	Direct Contact	Buildings	**Unlikely** – No potential sources of contamination identified or potential aggressive soil chemistry anticipated	**Mild** – Damage to buildings/structures	**Very Low Risk**
	Permeation through water supply pipes	Human end-users	**Unlikely** – No potential contamination is expected that would adversely affect buried water supply pipes	**Medium** – Chronic damage to human health from permeation of plastic water supply pipes	**Low Risk**
Potentially infilled land on and off site	Gas migration through permeable strata, ingress and accumulation in structures	Human end-users	**Unlikely** – No viable sources of ground gas generation potential identified.	**Severe** - Acute risk to potential end users.	**Moderate/Low Risk**[2]
		Structures			**Moderate/Low Risk**[2]
Radon Gas		Human end-users	**Unlikely** – site outside of radon affected area	**Medium** - Chronic risk to human end users	**Low Risk**

Table 2 – Preliminary Conceptual Site Model and Risk Assessment

[2] A moderate/low risk has been determined based on the probability and consequence however, based on the lack of a ground gas source the risk is likely to be low or negligible.

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11. CONCLUSIONS AND RECOMMENDATIONS

1. A Phase I Desk Study was undertaken to support a residential development at Crossroads Nursery, Quadring, Lincolnshire, PE11 4PJ.
2. Geological mapping indicates the site to be underlain by the Oxford Clay Formation and by superficial Tidal Flat Deposits of clay and silt. The bedrock geology and superficial deposits are designated an Unproductive Aquifer status.
3. Historically the site was used as agricultural land and with the exception of some more recent storage in the south west corner, associated with the use of the adjacent Crossroads Nursery.
4. There are several drainage ditches bordering the site. The site lies outside of any groundwater source protection zones.
5. The historical and current uses of the site are unlikely to pose a significant source of contamination.
6. Human end-users and construction workers are considered to be at a low and very low risk respectively, from exposure to potentially contaminated soils.
7. Groundwater and surface waters are considered to be at a low risk from potential contamination given the lack of sources identified.
8. Any proposed buildings/structures are considered to be at a very low risk from direct contact with any potential contamination or potentially aggressive soil chemistry.
9. Human end-users are considered to be at a low risk from the permeation of potential contamination through plastic water supply pipework.
10. No sources of ground gas have been identified and a low or negligible risk from ground gas is concluded.
11. The site is considered to be suitable for the proposed use. If any suspected contamination is encountered during the construction the advice of a specialist should be sought with respect to appropriate actions.

Mr C P J Smith
BSc (Hons) MSc FGS GMICE

Eur Ing Dr A F Howland
MSc PhD DIC CEng FIMMM CGeol FGS GMICE

A F HOWLAND ASSOCIATES
19 October 2021

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APPENDIX A: REFERENCES

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APPENDIX B: ENVIRONMENTAL DATABASE REPORT AND HISTORICAL MAPS

Groundsure Enviro Insight (reference GS-6534542)

Historical Map Extracts (large and small scale) (reference GS-6534543)

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Enviro Insight

Address:	**CROSSROADS NURSERIES, MAIN ROAD, QUADRING, SPALDING, PE11 4PJ**
Date:	**3 Jan 2020**
Reference:	**GS-6534542**
Client:	**A F Howland Associates**

NW N NE



W E

SW S SE

Aerial Photograph Capture date:	20-Apr-2018
Grid Reference:	522455,333354
Site Size:	3.5700ha

Report Reference: GS-6534542
Client Reference: BJH_20_005

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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	1	0	6	4
1.2 Additional Information – Historical Tank Database	0	0	4	6
1.3 Additional Information – Historical Energy Features Database	0	0	2	2
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	1	1
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	0	6

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	1	0	3	3
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	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	1	1	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	5	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

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

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	2	0	1	4
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	18	6	48	130	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Medium
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	Not Prone
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable

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	0

Section 8: Designated Environmentally Sensitive Sites

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

Section 9: Natural Hazards

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

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	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.

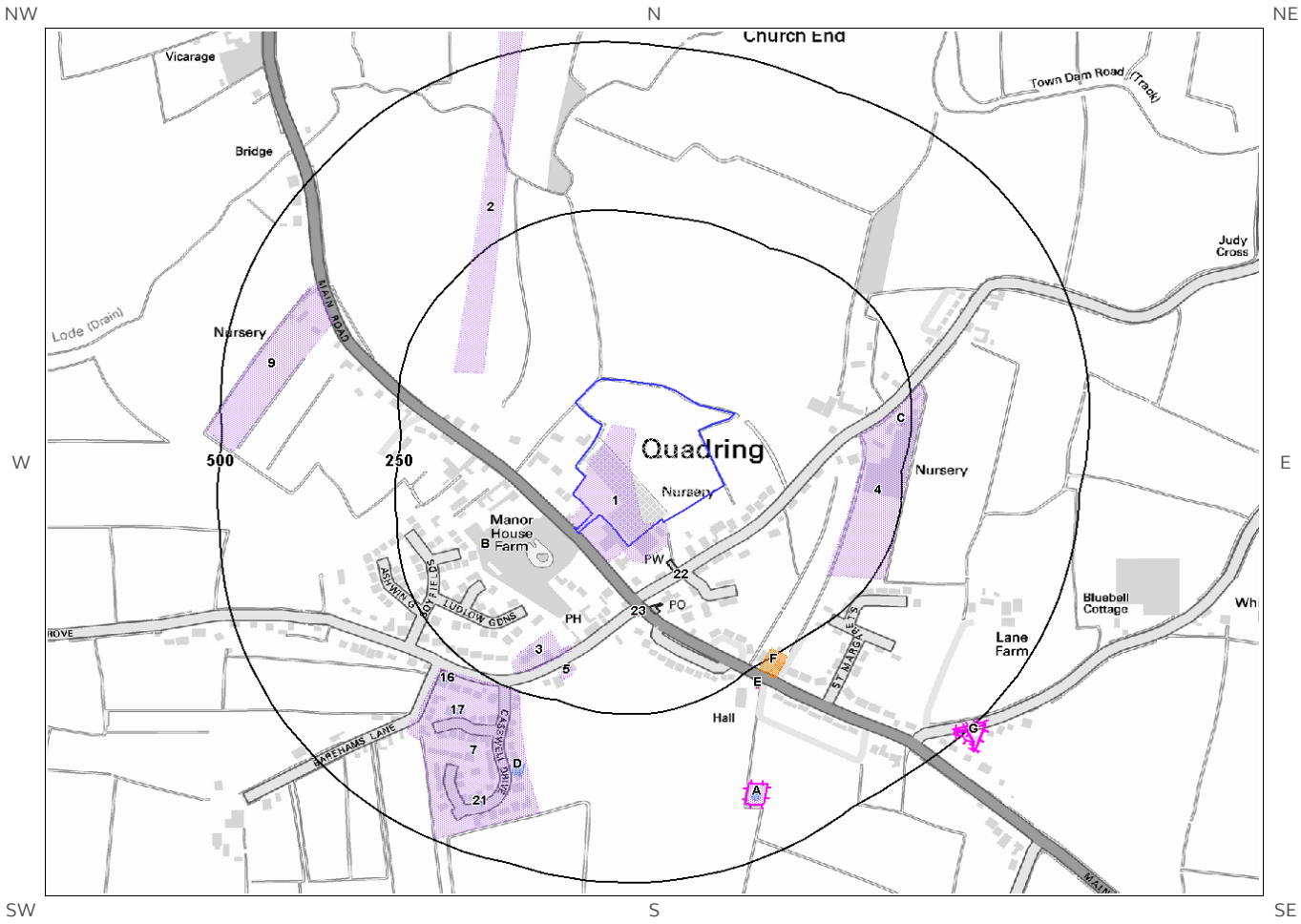
Note: Maps

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



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Site Outline

250
500
Search Buffers (m)

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

Industrial Land Use

Potentially Infilled Land

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: 11

ID	Distance [m]	Direction	Use	Date
1	0	On Site	Nursery	1975
2	138	W	Rifle Range	1887
3	151	S	Smithy	1903
4	178	E	Nursery	1975
5	197	SW	Smithy	1887
6C	229	E	Unspecified Tank	1975
7	250	S	Nursery	1975
8D	351	S	Unspecified Tank	1975
9	361	W	Nursery	1975
10A	391	SE	Sewage Works	1975
11A	407	SE	Unspecified Tank	1975

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: 10

ID	Distance (m)	Direction	Use	Date
12B	128	W	Unspecified Tank	1972
13B	128	W	Unspecified Tank	1995
14C	233	E	Unspecified Tank	1995
15C	234	E	Unspecified Tank	1972
16	286	SW	Unspecified Tank	1972
17	317	SW	Unspecified Tank	1972
18D	352	S	Unspecified Tank	1972
19A	409	SE	Unspecified Tank	1995
20A	409	SE	Unspecified Tank	1972
21	426	S	Unspecified Tank	1972

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: 4

ID	Distance (m)	Direction	Use	Date
22	82	SE	Electricity Substation	1995
23	102	S	Electricity Substation	1972
24E	273	SE	Electricity Substation	1995
25E	274	SE	Electricity Substation	1972

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: 2

ID	Distance (m)	Direction	Use	Date
26F	238	SE	Garage	1995
27F	258	SE	Garage	1972

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.

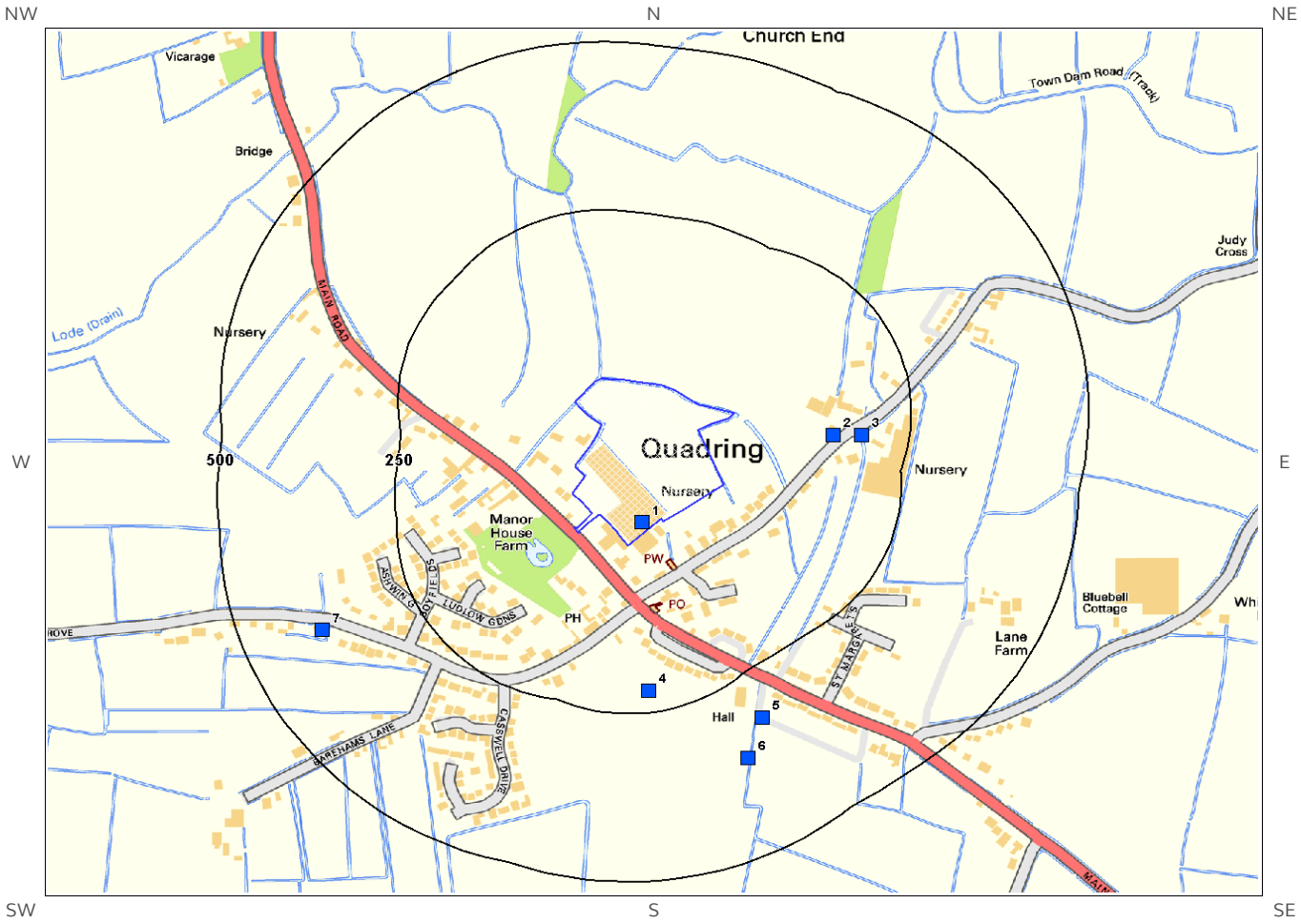
1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 6

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

ID	Distance(m)	Direction	Use	Date
28A	391	SE	Sewage Works	1975
29G	486	SE	Pond	1955
30G	486	SE	Pond	1929
31G	486	SE	Pond	1947
32G	486	SE	Pond	1903
33G	489	SE	Pond	1887

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- 250 / 500 Search Buffers (m)
- 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:

7

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

ID	Distance (m)	Direction	NGR	Details	
1	0	On Site	522450 333250	Address: WATER QUADRING Effluent Type: UNSPECIFIED Permit Number: PR5LF3083 Permit Version: 1	Receiving Water: Land Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 11/07/1968 Effective Date: 11-Jul-1968 Revocation Date: 01/10/1996
2	143	E	522720 333380	Address: HOUSE AT CASSWELL'S FARM, QUADRING, SPALDING Effluent Type: UNSPECIFIED Permit Number: PR5LF3130 Permit Version: 1	Receiving Water: Land Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 09/11/1970 Effective Date: 09-Nov-1970 Revocation Date: 01/10/1996
3	182	E	522760 333380	Address: DONINGTON ROAD, QUADRING, SPALDING Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AW5NF561 Permit Version: 1	Receiving Water: Fen Drain Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 19/08/1971 Effective Date: 19-Aug-1971 Revocation Date: -
4	218	S	522460 333000	Address: QUADING (ST MARGARETS HOUSING ESTAT Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: PR5NF482 Permit Version: 1	Receiving Water: Fen Drain Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 07/11/1991 Effective Date: 07-Nov-1991 Revocation Date: 26/02/1992
5	318	SE	522620 332960	Address: DONINGTON ROAD, QUADRING, SPALDING Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AW5NF561 Permit Version: 1	Receiving Water: Fen Drain Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 19/08/1971 Effective Date: 19-Aug-1971 Revocation Date: -
6	358	SE	522600 332900	Address: MAIN ROAD SPS, MAIN ROAD, QUADRING, SPALDING, LINCS, PE11 4PW Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY	Receiving Water: Risegate Eau Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 22/07/1987

ID	Distance (m)	Direction	NGR	Details	
				Permit Number: AW5NF1744 Permit Version: 1	Effective Date: 22-Jul-1987 Revocation Date: -
7	387	SW	522000 333090	Address: DONINGTON ROAD, QUADRING, SPALDING Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: AW5NF561 Permit Version: 1	Receiving Water: Fen Drain Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 19/08/1971 Effective Date: 19-Aug-1971 Revocation Date: -

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

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

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

0

Database searched and no data found.

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

0

Database searched and no data found.

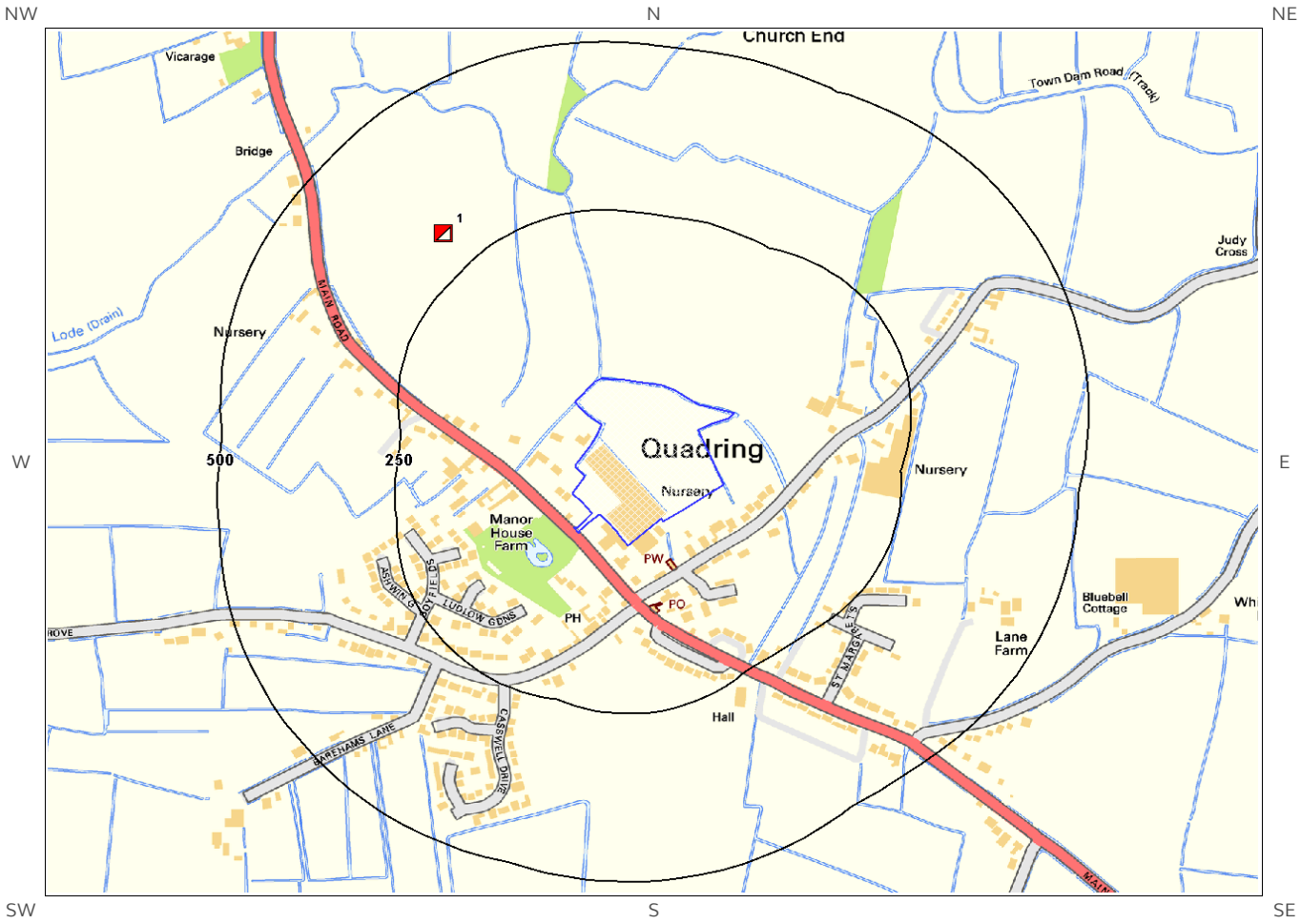
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

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

Database searched and no data found.

---

3. Landfill and Other Waste Sites Map



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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.

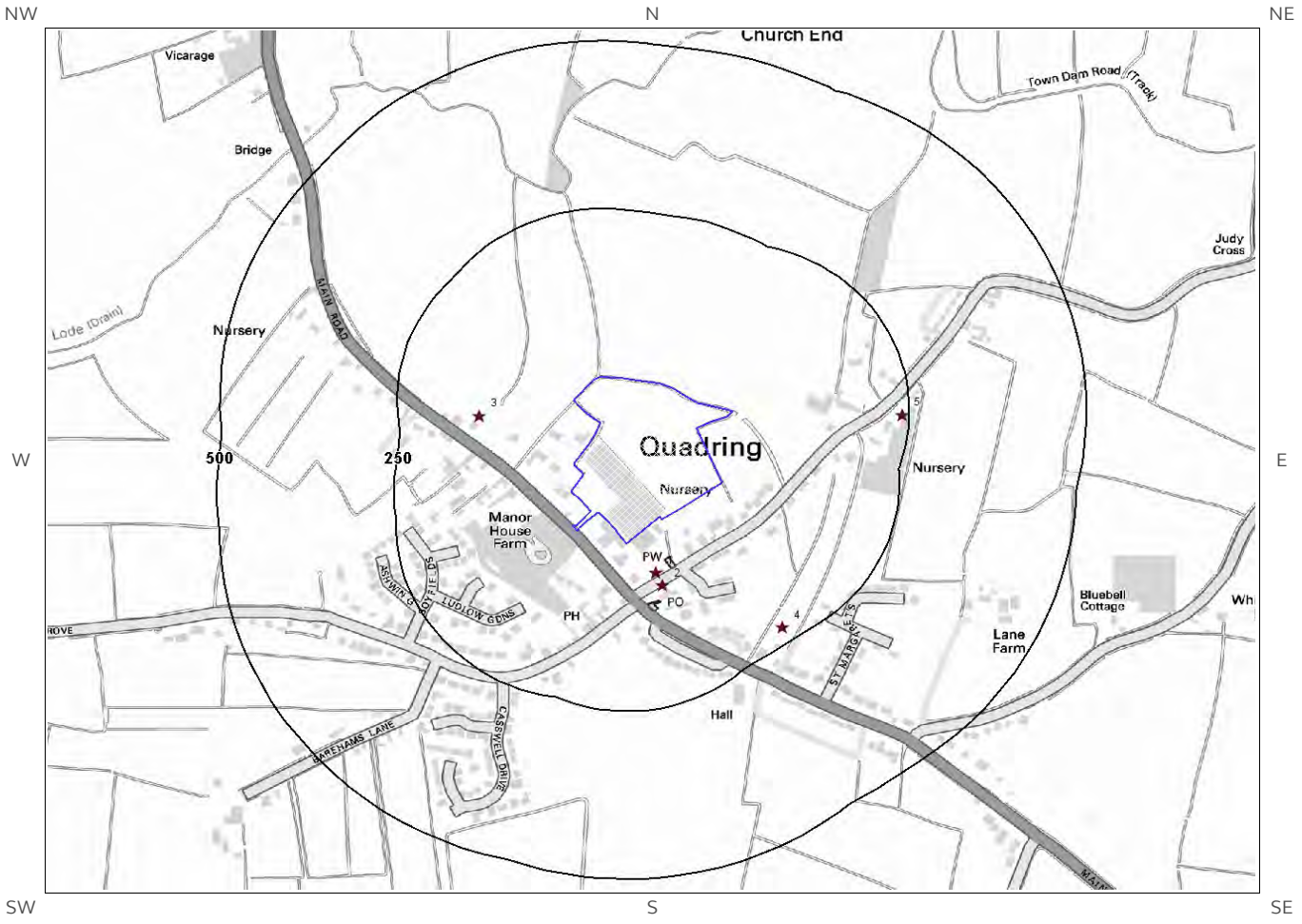
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

2

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

ID	Distance (m)	Direction	NGR	Details	
1	307	NW	522170 333680	Site Address: Barr Farm, Main Road, Deeping St Nicholas, Spalding, Lincs, PE11 3HA Type: Physical Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SPA003 EPR reference: - Operator: Spalding Pallets Ltd Waste Management licence No: 73142 Annual Tonnage: 0.0	Issue Date: 10/10/2003 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Spalding Pallets Ltd Correspondence Address: Barr Farm, Main Road, Deeping St Nicholas, Spalding, Lincs, LN
Not shown	925	SE	523123 332567	Site Address: 6, Main Road, Quadring, Lincolnshire, PE11 4PS Type: Vehicle Depollution Facility <5000 tps Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RSH003 EPR reference: EA/EPR/CB3607KE/A001 Operator: The R Shop Limited Waste Management licence No: 402211 Annual Tonnage: 4999.0	Issue Date: 16/03/2015 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: The R Shop Limited Correspondence Address: -

4. Current Land Use Map



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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: 5

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	59	SE	S A S Security & Electrical Ltd	522472 333172	2, Water Gate, Quadring, Spalding, Lincolnshire, PE11 4PY	Electronic Equipment	Industrial Products
2	79	SE	Electricity Sub Station	522481 333154	Lincolnshire, PE11	Electrical Features	Infrastructure and Facilities
3	136	W	Pumping Station	522222 333407	Lincolnshire, PE11	Water Pumping Stations	Industrial Features
4	226	SE	Sewage Pumping Station	522651 333091	Lincolnshire, PE11	Waste Storage, Processing and Disposal	Infrastructure and Facilities
5	239	E	Tank	522820 333408	Lincolnshire, PE11	Tanks (Generic)	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

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

Lex Code	Description	Rock Type
TFD-XCZ	TIDAL FLAT DEPOSITS	CLAY AND SILT

5.3 Bedrock and Solid Geology

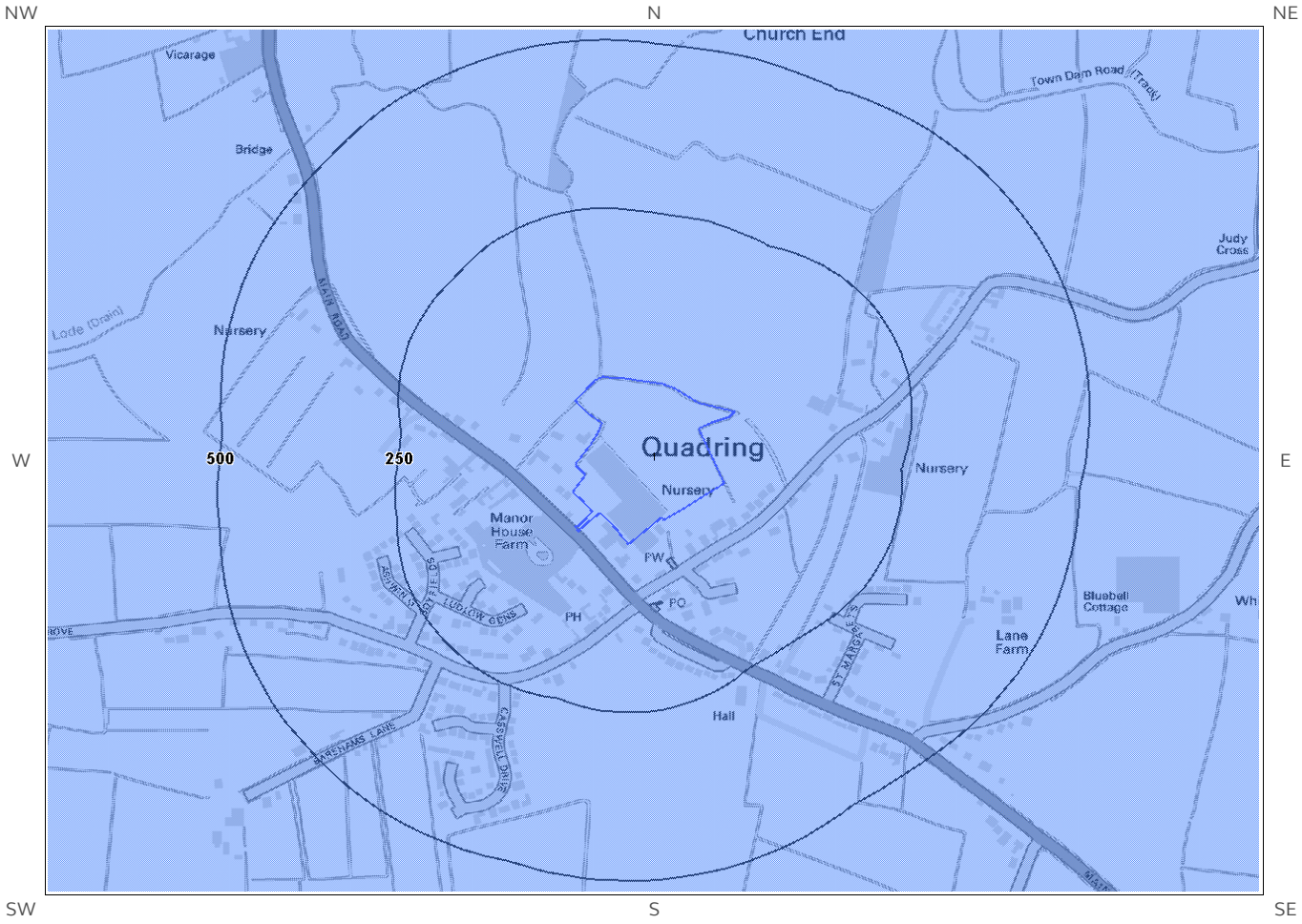
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
OXC-MDST	OXFORD CLAY FORMATION	MUDSTONE

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

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

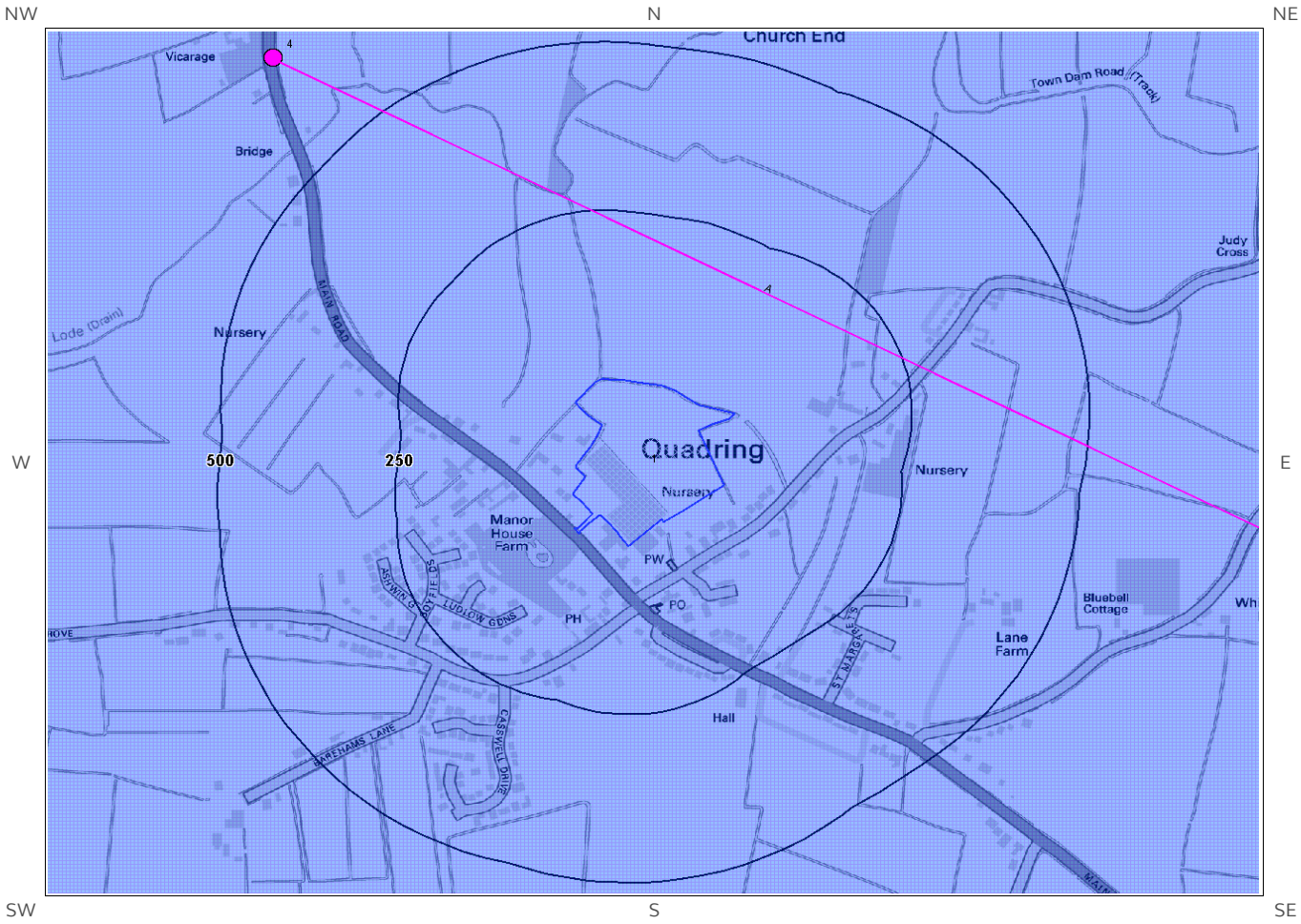
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

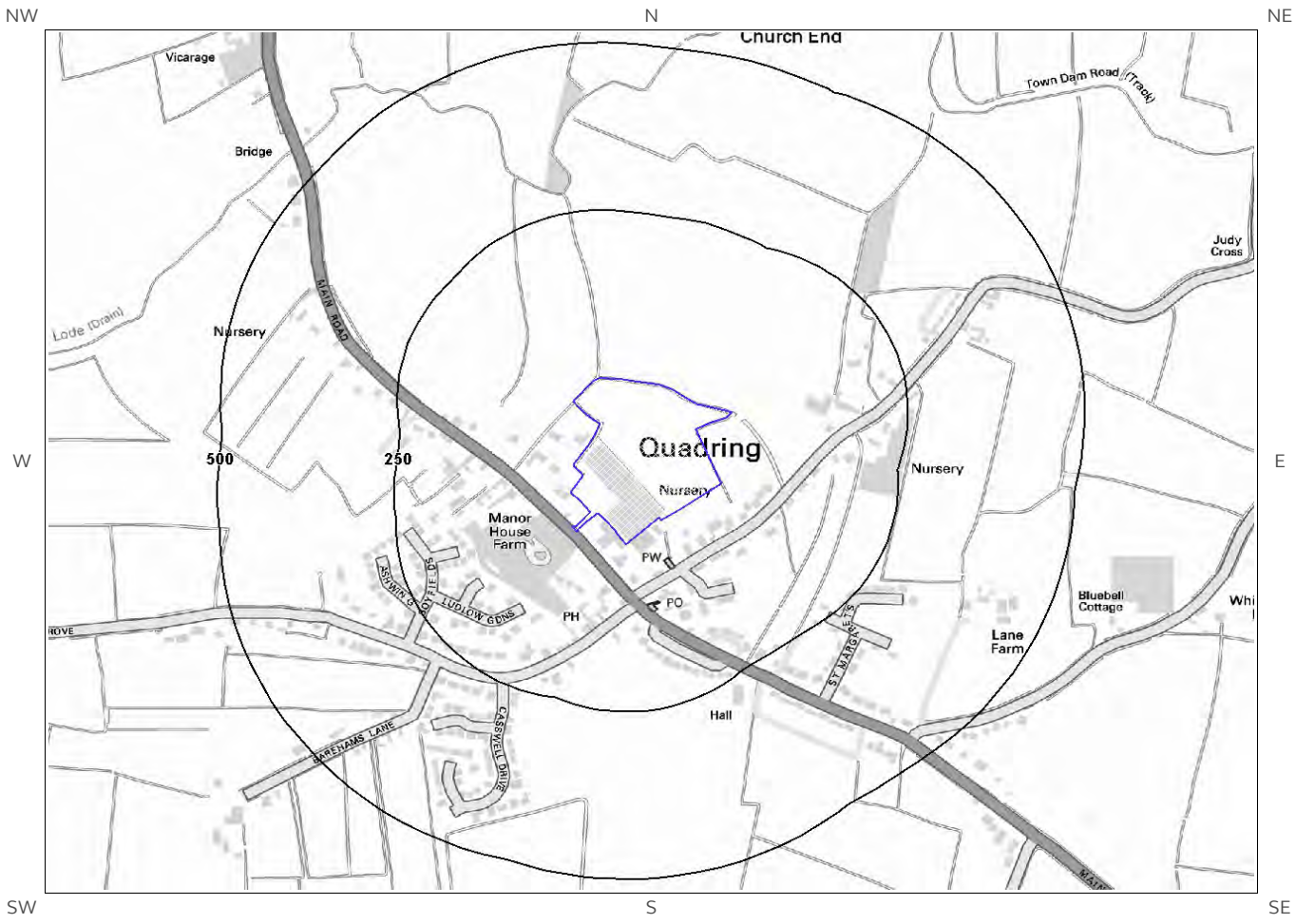
6b. Aquifer Within Bedrock Geology and Abstraction Licences



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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



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Site Outline

250 Search Buffers (m)
500

Source Protection Zone 1 - Inner Catchment

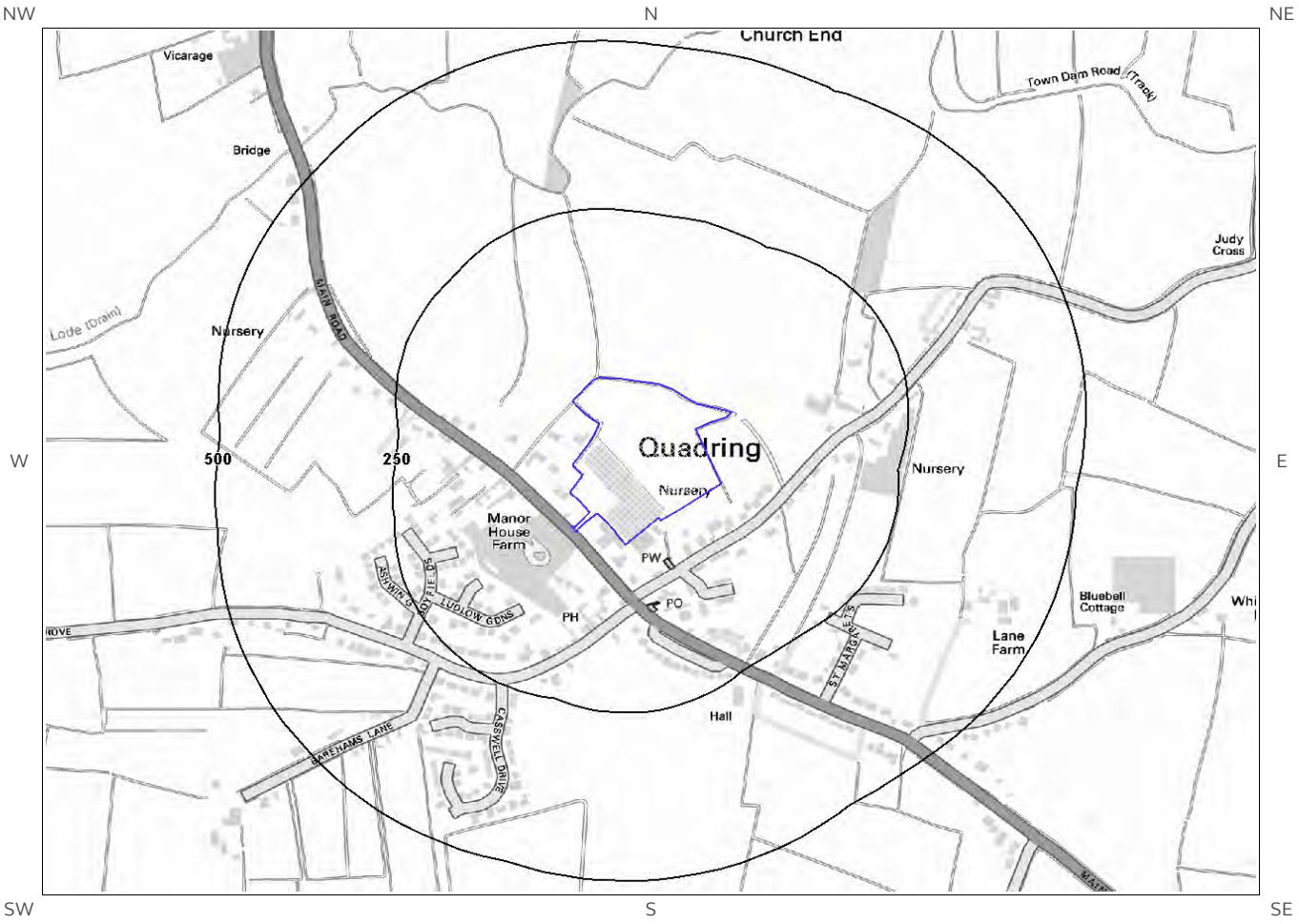
Source Protection Zone 2 - Outer Catchment

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



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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

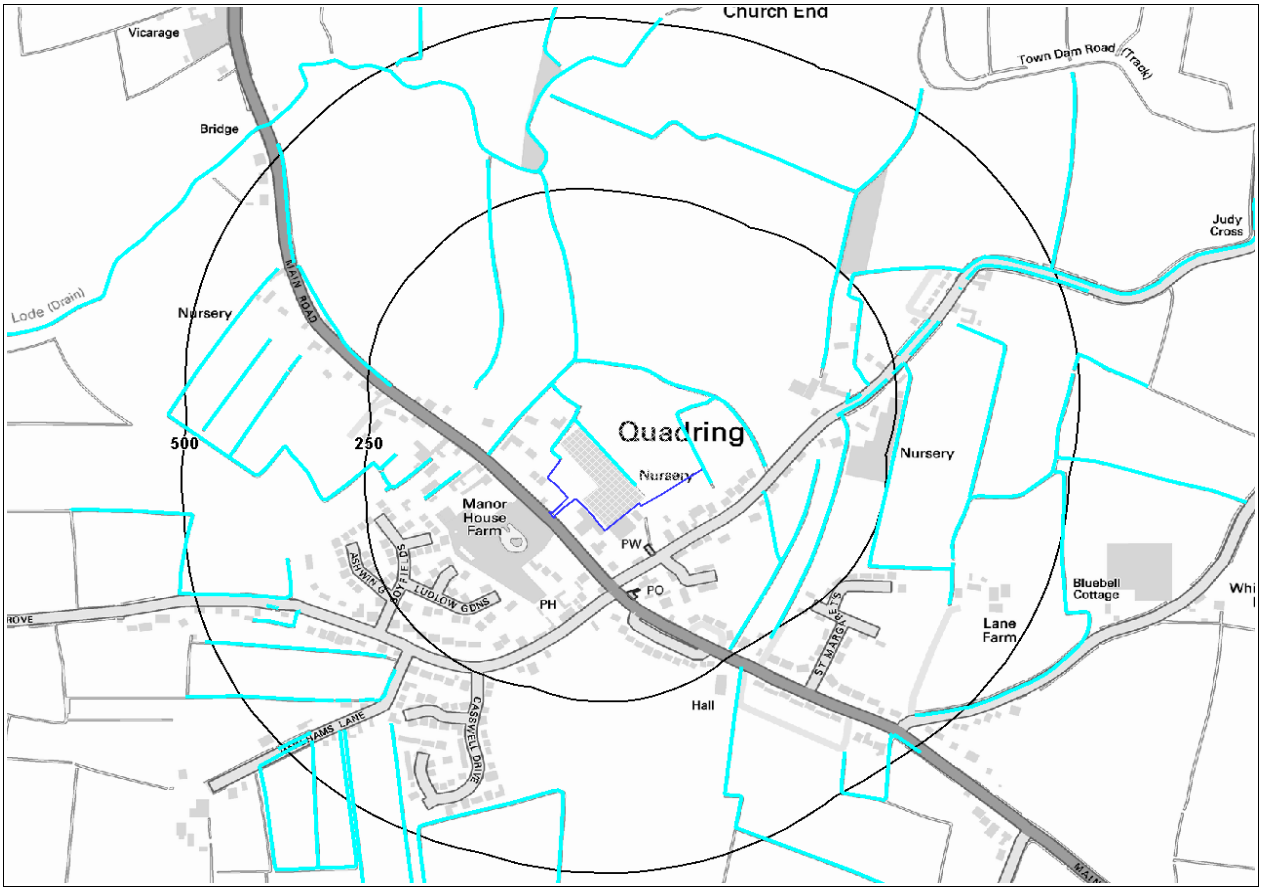
250
500
Search Buffers (m)

6e. Hydrology – Watercourse Network and River Quality

NW N NE

W E

SW S SE



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Site Outline

250 500 Search Buffers (m)

Watercourse type

- Tidal River
- Inland River
- Canal
- Lock or Flight of Locks
- Lake, Reservoir, or Marsh
- Foreshore
- Drain or Transfer

Watercourse level

- On ground surface
- Underground or Elevated
- Level unknown

- General Quality Assessment: Biology
- General Quality Assessment: Chemistry

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.2 Aquifer within Bedrock Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	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 None identified

Database searched and no data found.

6.4 Surface Water Abstraction Licences

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

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

ID	Distance (m)	Direction	NGR	Details	
2A	179	NE	524800 332500	Status: Historical Licence No: 5/31/14/*S/0230 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: MARLODE DRAIN AT QUADRING SPALDING Data Type: Line Name: R BRATLEY (QUADRING) LTD	Annual Volume (m^3): 46,000 Max Daily Volume (m^3): 750 Application No: - Original Start Date: 01/07/1997 Expiry Date: 31/03/2017 Issue No: 102 Version Start Date: 30/06/2011 Version End Date:
3A	179	NE	524800 332500	Status: Active Licence No: 5/31/14/*S/0230/R01 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: MARLODE DRAIN AT QUADRING SPALDING Data Type: Line Name: R BRATLEY (QUADRING) LTD	Annual Volume (m^3): 46,000 Max Daily Volume (m^3): 750 Application No: - Original Start Date: 19/04/2017 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 19/04/2017 Version End Date:
4	661	NW	521930 333940	Status: Historical Licence No: 5/31/14/*S/0230 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: MARLODE DRAIN "B" AT QUADRING Data Type: Point Name: R BRATLEY (QUADRING) LTD	Annual Volume (m^3): 46,000 Max Daily Volume (m^3): 750 Application No: - Original Start Date: 01/07/1997 Expiry Date: 31/03/2017 Issue No: 101 Version Start Date: 21/07/1999 Version End Date:
Not shown	1114	NW	521400 334400	Status: Historical Licence No: 4/30/12/*S/0228 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: UNNAMED DRAIN DONINGTON Data Type: Line Name: M LEGGATE & SON	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 01/06/1977 Expiry Date: - Issue No: 100 Version Start Date: 01/06/1977 Version End Date:
Not shown	1554	SE	524636 332822	Status: Active Licence No: 5/31/14/*S/0230/R01 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: COLL DRAIN AT QUADRING SPADLING Data Type: Line Name: R BRATLEY (QUADRING) LTD	Annual Volume (m^3): 46,000 Max Daily Volume (m^3): 750 Application No: - Original Start Date: 19/04/2017 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 19/04/2017 Version End Date:
Not shown	1554	SE	524636 332822	Status: Historical Licence No: 5/31/14/*S/0230 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: COLL DRAIN AT QUADRING SPADLING Data Type: Line Name: R BRATLEY (QUADRING) LTD	Annual Volume (m^3): 46,000 Max Daily Volume (m^3): 750 Application No: - Original Start Date: 01/07/1997 Expiry Date: 31/03/2017 Issue No: 102 Version Start Date: 30/06/2011 Version End Date:
Not shown	1554	SE	523750 332300	Status: Historical Licence No: 5/31/14/*S/0230 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: COLL DRAIN "C" AT QUADRING	Annual Volume (m^3): 46,000 Max Daily Volume (m^3): 750 Application No: - Original Start Date: 01/07/1997 Expiry Date: 31/03/2017 Issue No: 101

ID	Distance (m)	Direction	NGR	Details	
				Data Type: Point Name: R BRATLEY (QUADRING) LTD	Version Start Date: 21/07/1999 Version End Date:

6.5 Potable Water Abstraction Licences

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

Database searched and no data found.

6.6 Source Protection Zones

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

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

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

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site — None identified

Database searched and no data found.

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	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
2	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
3	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
4	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland 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	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
6	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
7	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.9
8	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
16	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
17	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
18	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
19	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
20	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
21	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
22	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.9
23	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	0 On Site	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
10	1	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
25	1 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
11	2 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
26	2 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
12	6 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
27	6 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	19 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.9
28	19 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.9
14	86 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
29	86 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
15	87 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
30	87 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
16	120 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 2.4
31	120 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
17	151 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
32	151 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
18	153 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
33	153 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
19	161 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
34	161 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
20	170 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
35	170 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
21	173 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
36	173 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
22	175 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
23	175 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
37	175 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
38	175 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
24	176 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
39	176 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
25	179 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
40	179 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
26	182 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
41	182 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
27	191 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
42	191 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
28	196 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
43	196	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	E			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
29	197 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
44	197 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
30	198 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
45	198 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
31	199 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
46	199 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
32	210 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
47	210 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
33	215 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
34	215 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.9
48	215 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
49	215 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 3.9
35	218 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
50	218 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
36	231 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
51	231 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
37	250 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
52	250 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
38	259 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
53	259 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
39	271 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
54	271 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
40	274 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.6
55	274 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.6

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
41	281 N	Mar Lode Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
42	281 N	Mar Lode Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
Not shown	281 N	Mar Lode Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
Not shown	281 N	Mar Lode Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
43	294 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
58	294 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
44	300 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
59	300 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
45	307 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
60	307 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
46	311 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
61	311 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
47	336	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.6
62	336 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.6
48	343 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
63	343 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
49	345 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
64	345 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
50	349 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
65	349 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
51	352 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
66	352 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
52	354 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
67	354 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
53	355 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 3.0
68	355 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
54	356 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
55	356 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
69	356 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
70	356 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
56	359 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
71	359 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
57	363 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
72	363 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
58	365 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.5
73	365 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.5
59	367 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.4

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
74	367 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.4
60	368 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
75	368 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
61	369 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
76	369 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
62	370 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.6
63	370 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
77	370 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.6
78	370 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
64	374 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
Not shown	374 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
65	385 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
80	385	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	NE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
66	389 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
81	389 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
67	391 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
82	391 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
68	393 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
83	393 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
69	396 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
70	396 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
84	396 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
85	396 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
71	398 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
86	398 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
72	399 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
87	399 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
73	400 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
88	400 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
74	403 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
89	403 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
75	404 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.3
76	404 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
77	404 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
90	404 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.3
91	404 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
92	404 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground 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
78	406 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
93	406 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
79	410 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
94	410 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
80	413 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
95	413 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
81	423 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
Not shown	423 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
82	427 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
Not shown	427 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
83	431 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
Not shown	431 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
84	451	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
Not shown	451 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
85	457 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
Not shown	457 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
86	462 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
101	462 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
87	463 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.5
Not shown	463 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.5
88	465 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
Not shown	465 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
89	468 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
90	468 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
Not shown	468 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 3.1
Not shown	468 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
91	469 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
Not shown	469 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
92	473 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
Not shown	473 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
93	476 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.1
Not shown	476 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.1
94	477 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
Not shown	477 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
95	479 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	479 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
96	482 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland 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
Not shown	482 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
97	485 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
Not shown	485 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
98	487 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.3
Not shown	487 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.3
99	492 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
Not shown	492 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
100	494 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
Not shown	494 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
101	497 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
102	497 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
Not shown	497 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.8
Not shown	497	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	E			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7

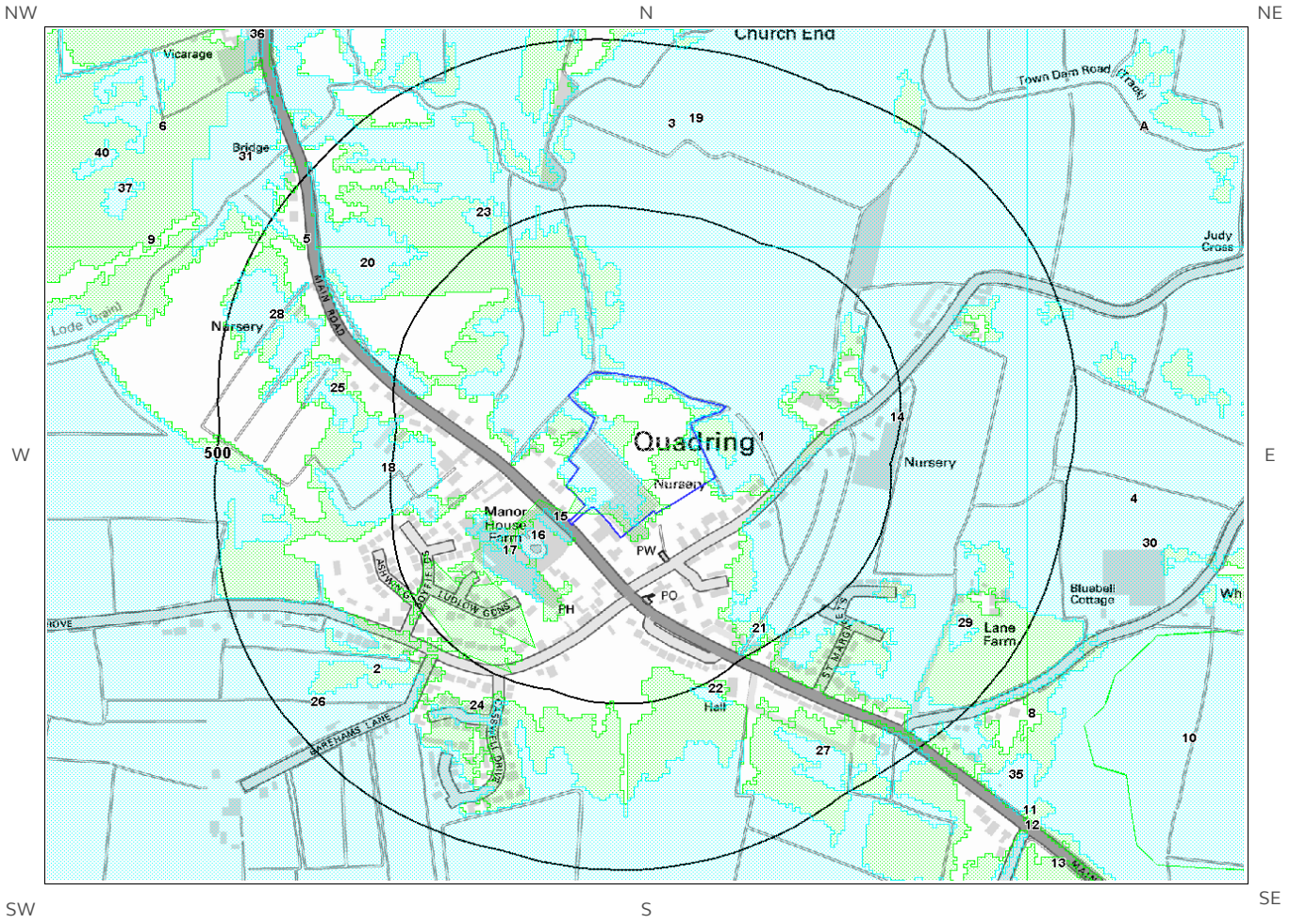
6.11 Surface Water Features

Surface water features within 250m of the study site Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
0	On Site
0	On Site
18	SE
20	N
49	SW
85	NW
89	SE
151	E
160	W
168	E
182	E
195	E
197	E
198	SE
208	W
217	W
237	E

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



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

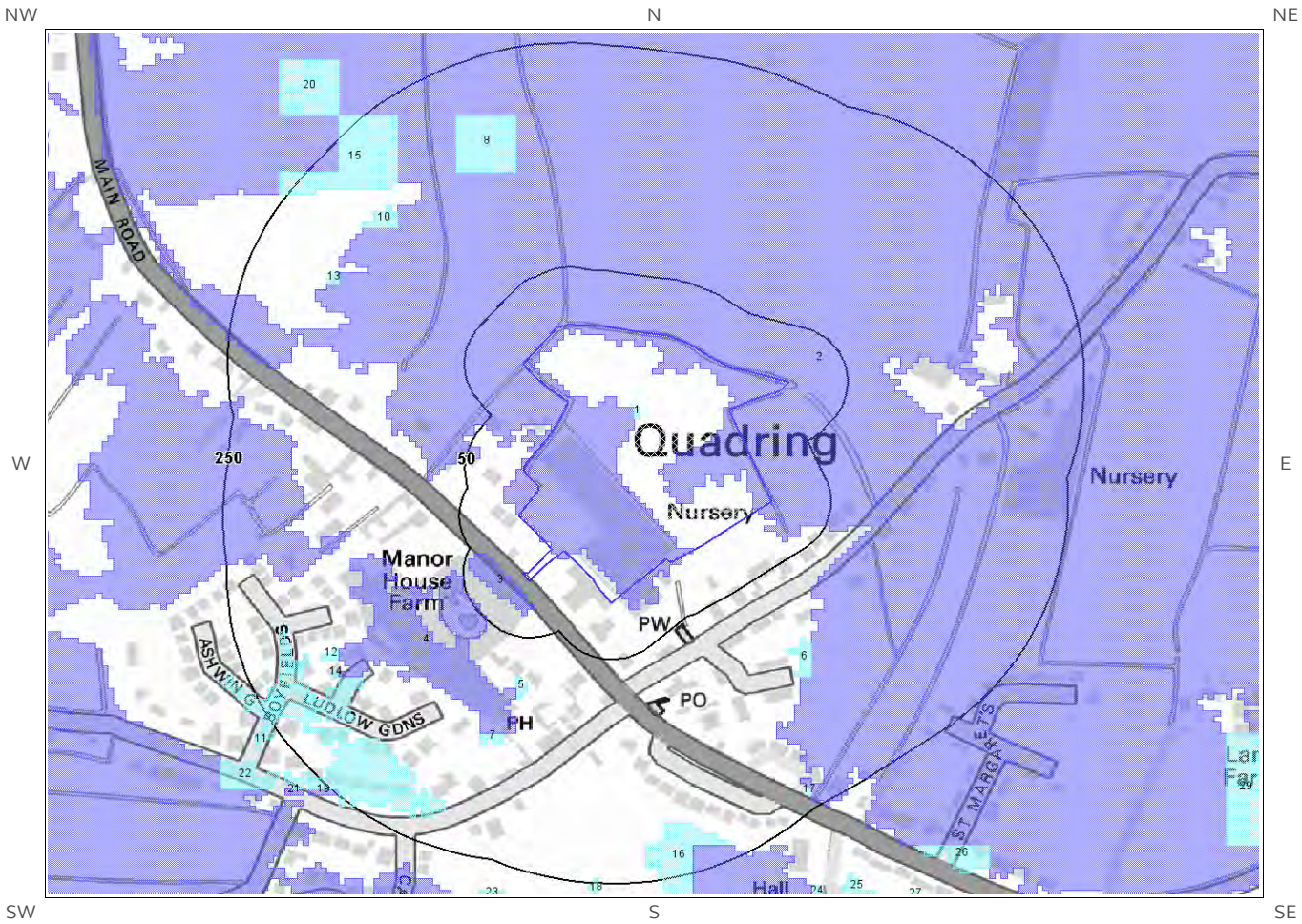
Zone 3 Floodplain

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



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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 — Identified

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

ID	Distance (m)	Direction	Update	Type
1	0	On Site	19-Nov-2019	Zone 2 - (Fluvial /Tidal Models)
2	143	W	19-Nov-2019	Zone 2 - (Fluvial /Tidal Models)
3	189	N	19-Nov-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

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

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

ID	Distance (m)	Direction	Update	Type
1	0	On Site	19-Nov-2019	Zone 3 - (Fluvial Models)
2	8	SW	19-Nov-2019	Zone 3 - (Fluvial Models)
3	44	SW	19-Nov-2019	Zone 3 - (Fluvial Models)
	83	SW	19-Nov-2019	Zone 3 - (Fluvial Models)
	177	W	19-Nov-2019	Zone 3 - (Fluvial Models)
	189	N	19-Nov-2019	Zone 3 - (Fluvial Models)
	202	W	19-Nov-2019	Zone 3 - (Fluvial Models)
	216	SE	19-Nov-2019	Zone 3 - (Fluvial Models)
	246	SE	19-Nov-2019	Zone 3 - (Fluvial Models)

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

Highest risk of flooding onsite — Medium

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 Medium (greater than 1 in 100 but less than 1 in 30) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRas flood Risk
1	0.0	On Site	Low
2	0.0	On Site	Medium
3	9.0	SW	Medium
4	45.0	SW	Medium

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 — None identified

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

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

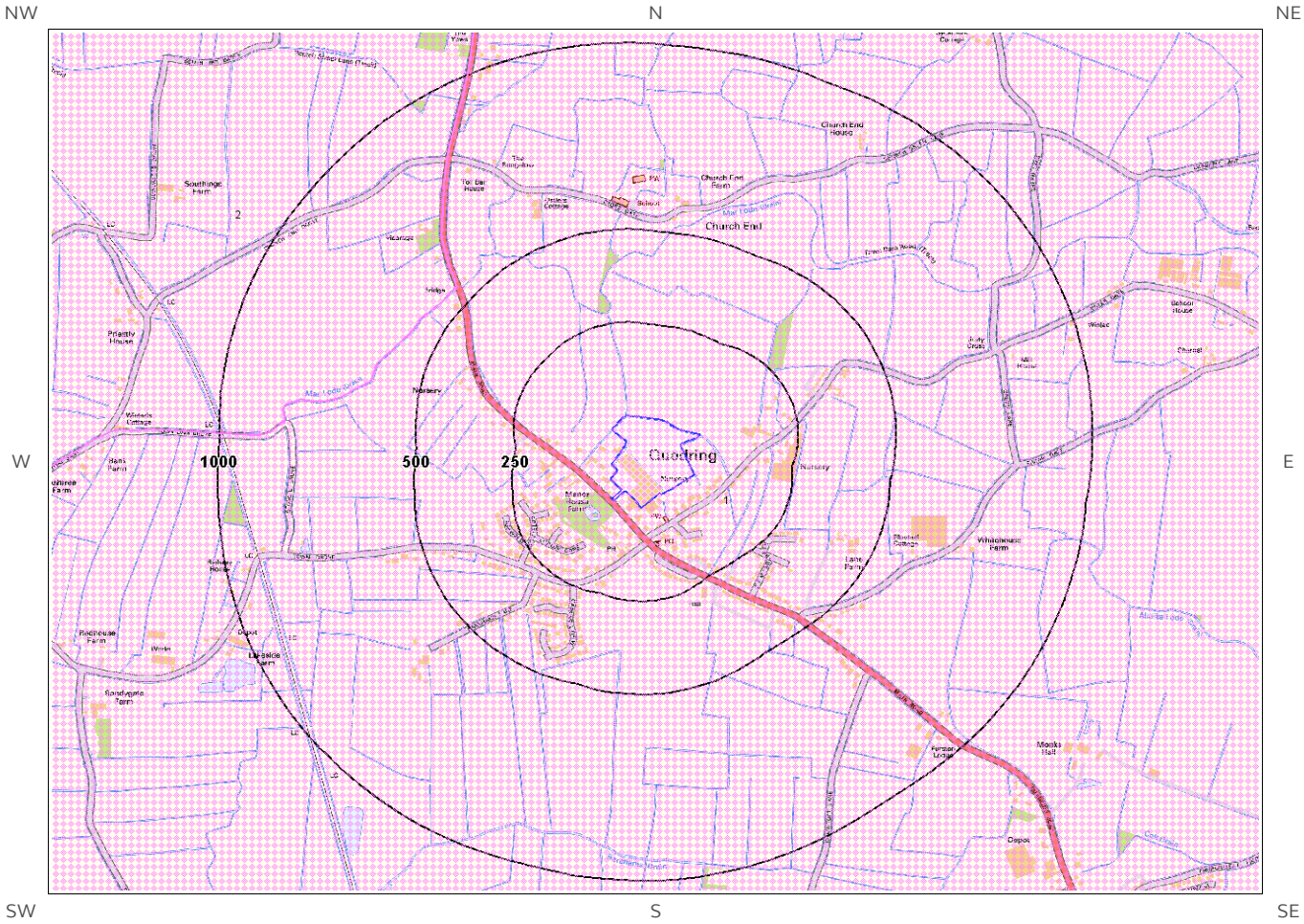
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result — Not Applicable

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

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

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

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

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:

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

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

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0	On Site	Existing	DEFRA
2	547	NW	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 — Low

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

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

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 — Moderate

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

Hazard
Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

9.1.5 Collapsible Rocks

Maximum Collapsible 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
No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. 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 — Moderate

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

Hazard
Significant potential for running sand problems with relatively small changes in ground conditions. Avoid large amounts of water entering the ground (for example through pipe leakage or soak-aways). Do not dig (deep) holes into saturated ground near the property without technical advice. For new build consider the consequences of soil and groundwater conditions during and after construction. For existing property possible increase in insurance risk from running sand, for example, due to water leakage, high rainfall events or flooding.

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

9.2 Radon

9.2.1 Radon Affected Areas

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

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — 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: South Holland District Council
Phone: 01775 761 161
Web: http://www.sholland.gov.uk/
Address: Council Offices, Priory Road, Spalding, Lincolnshire, PE11

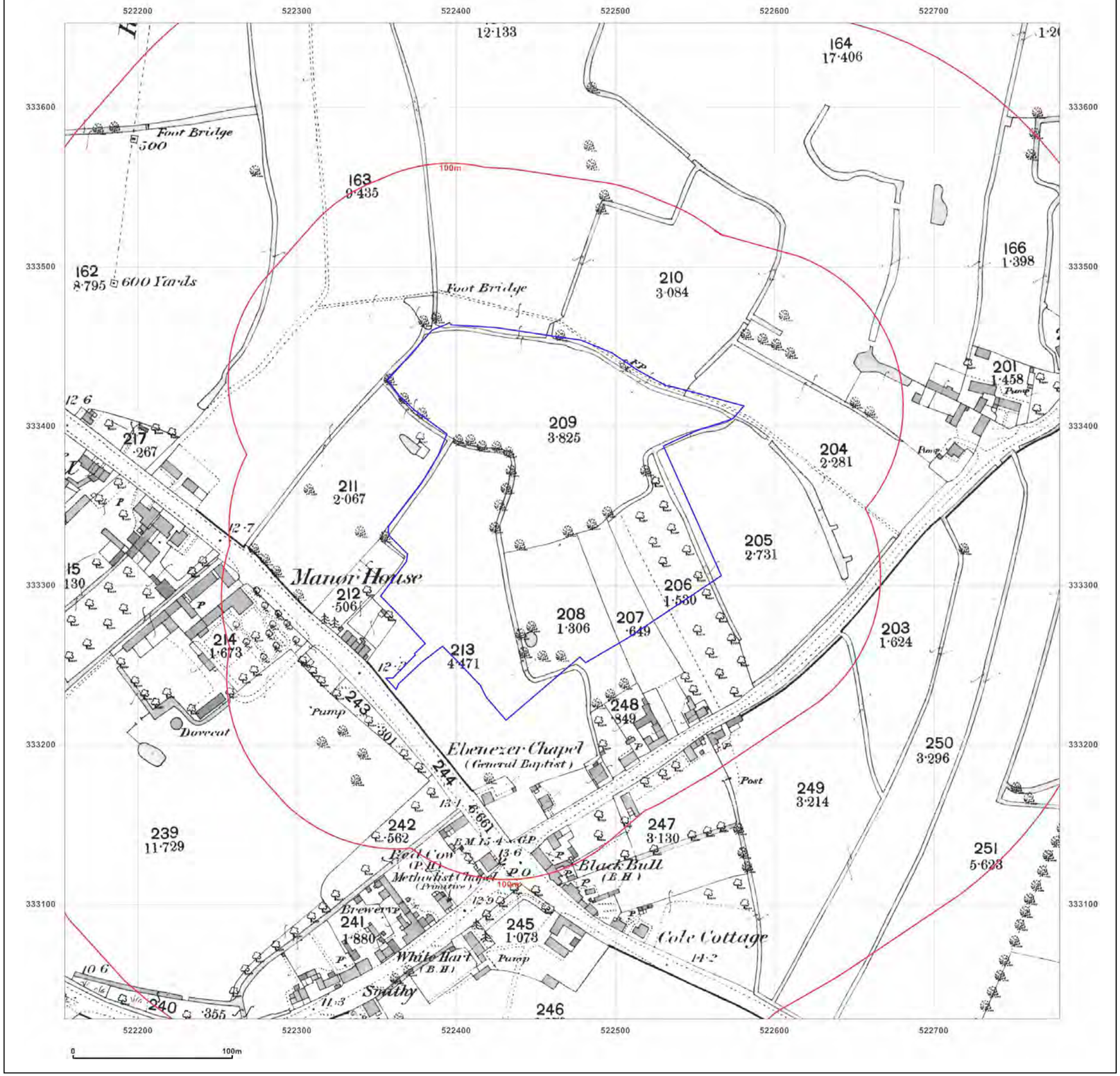
Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

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Map Name: County Series

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Printed at: 1:2,500

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Revised 1888
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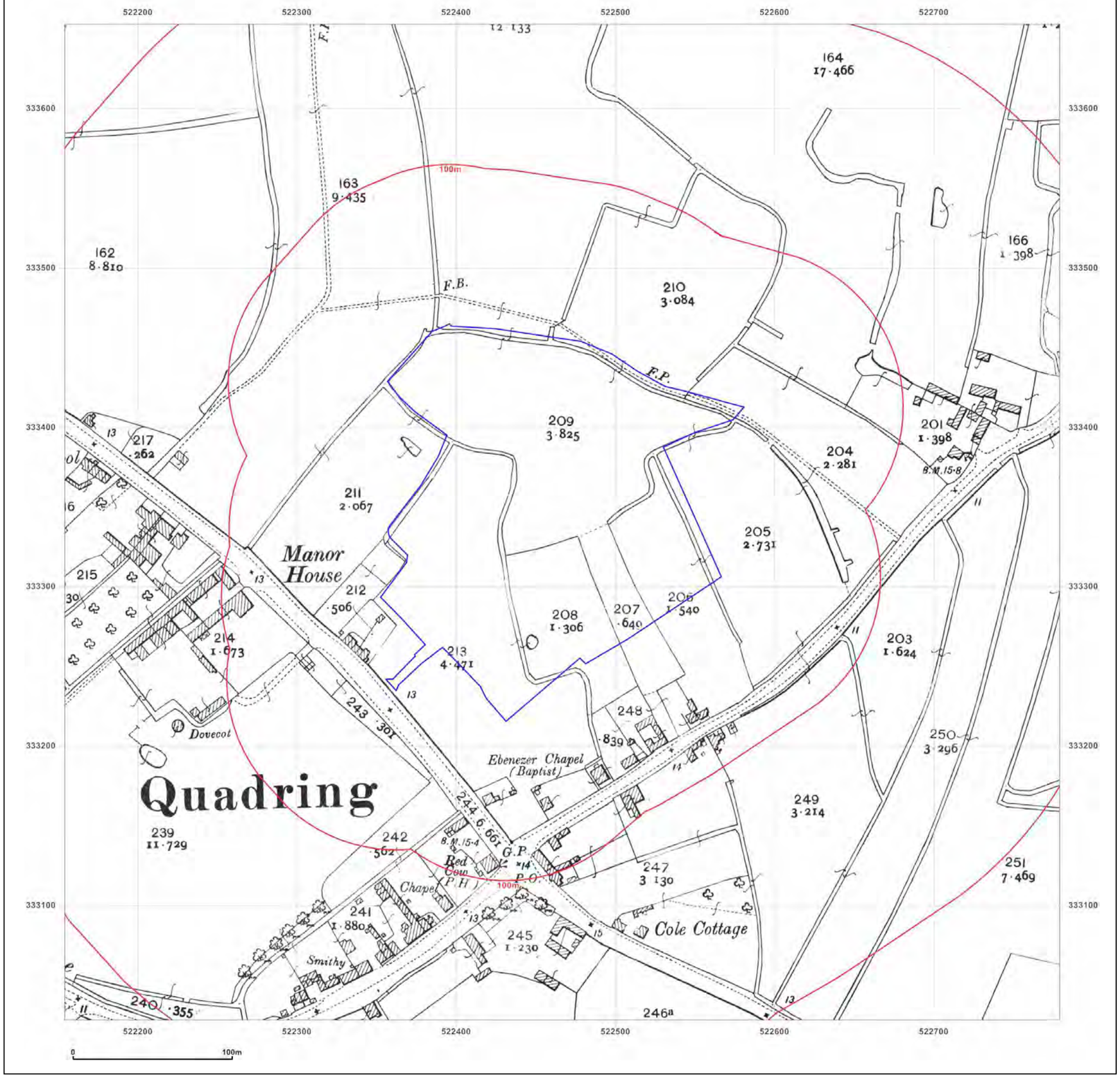
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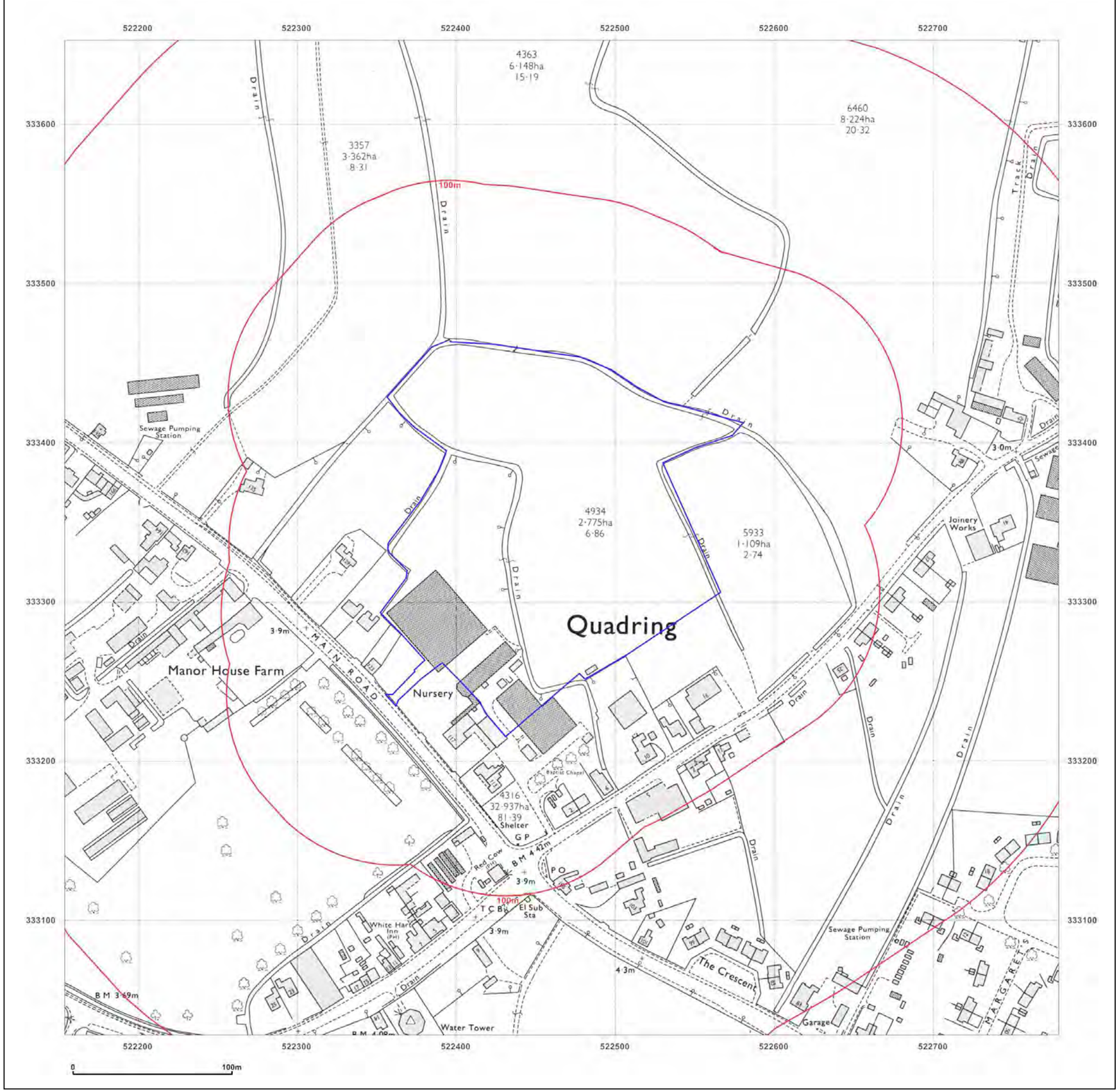
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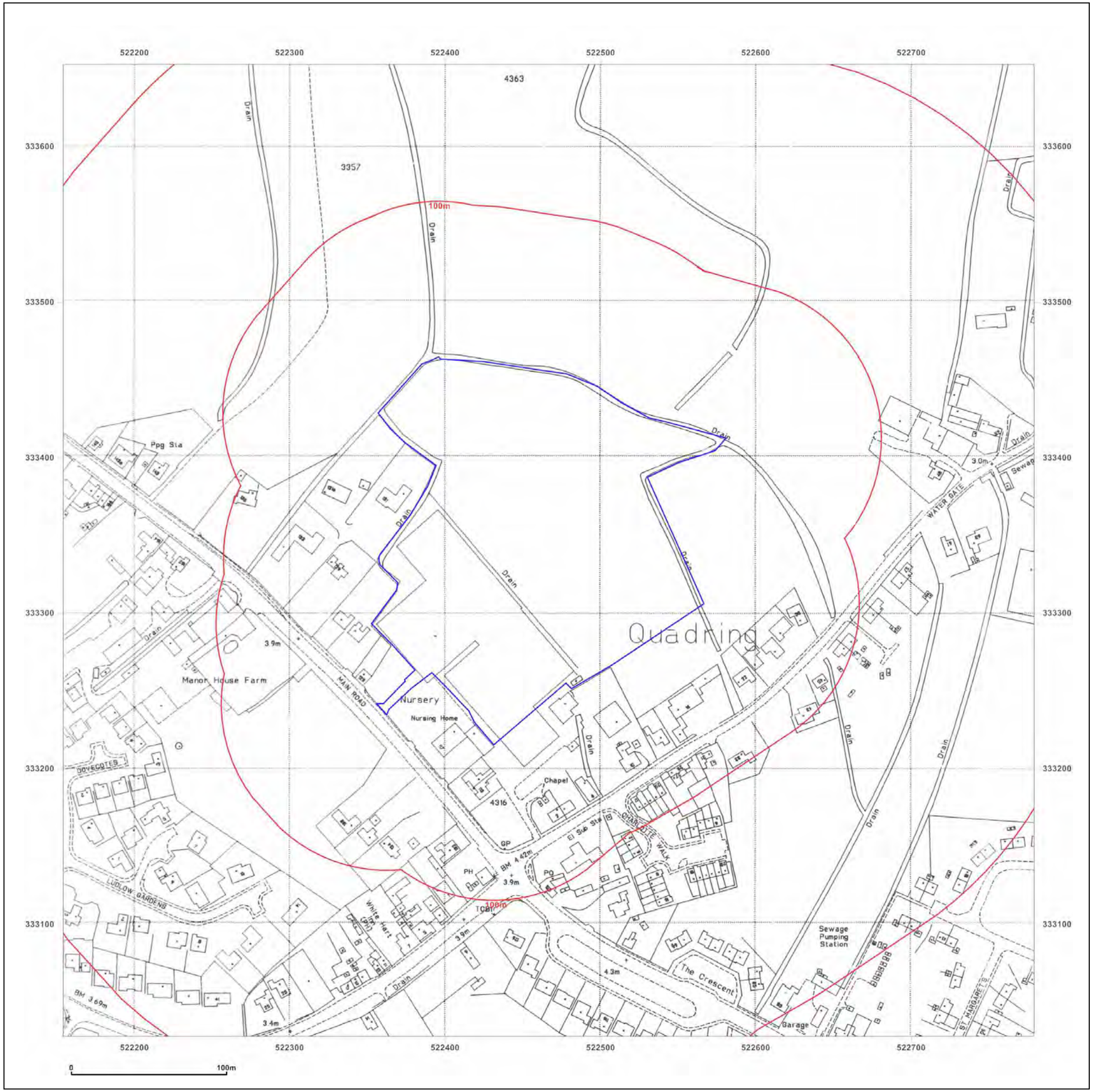
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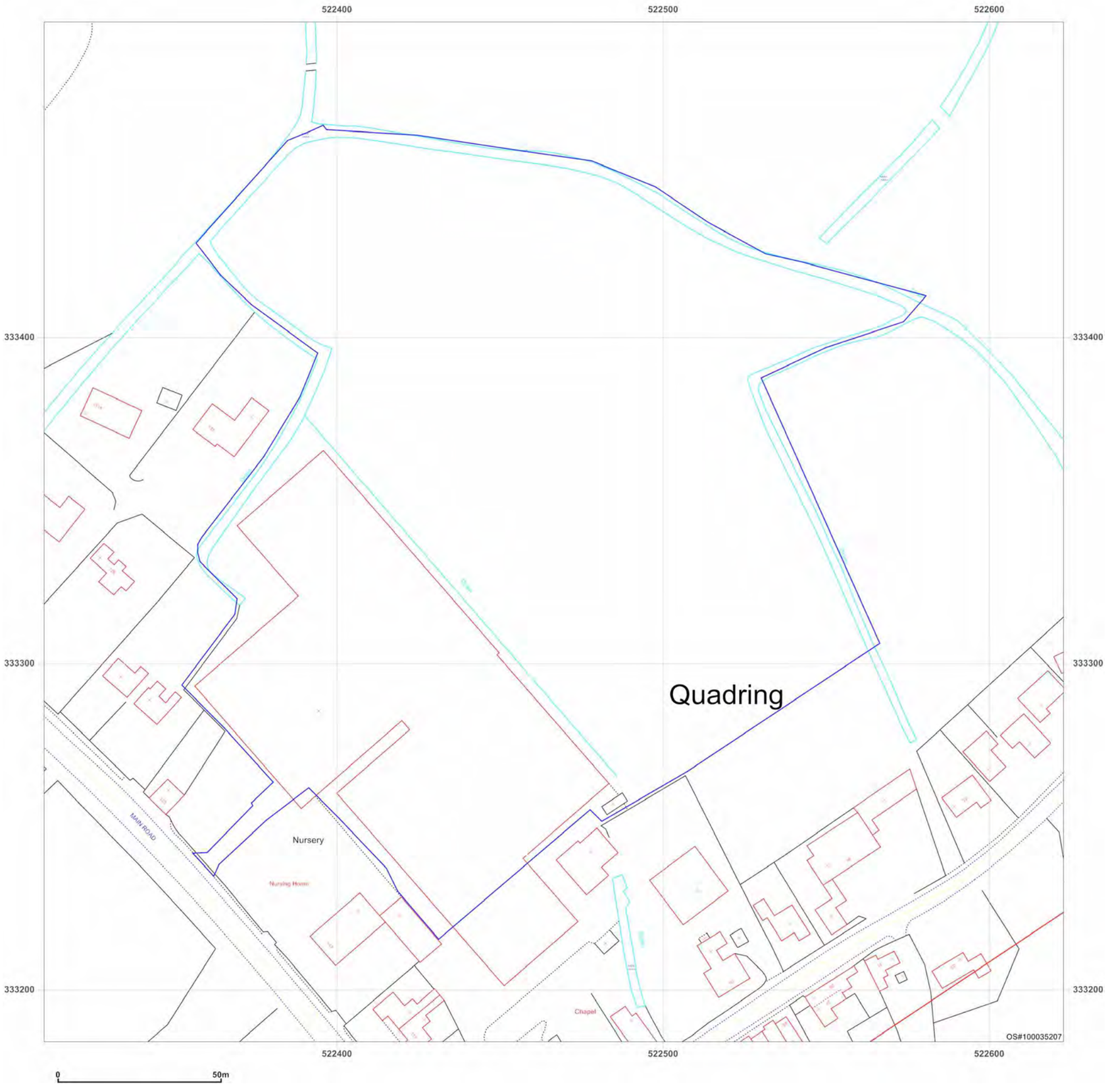
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Map Name: LandLine
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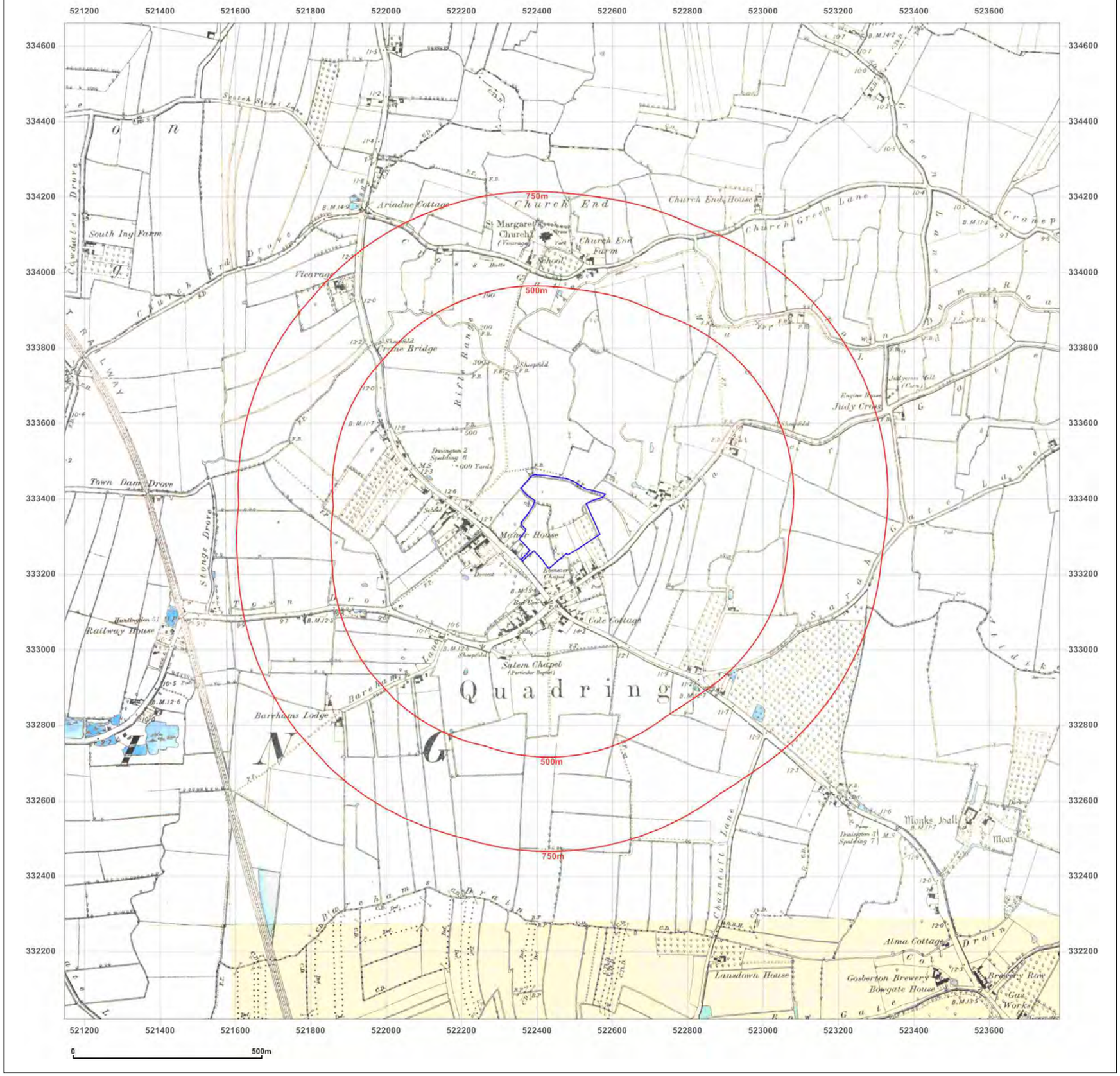
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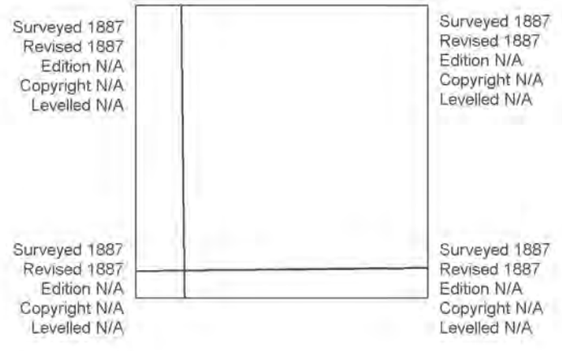
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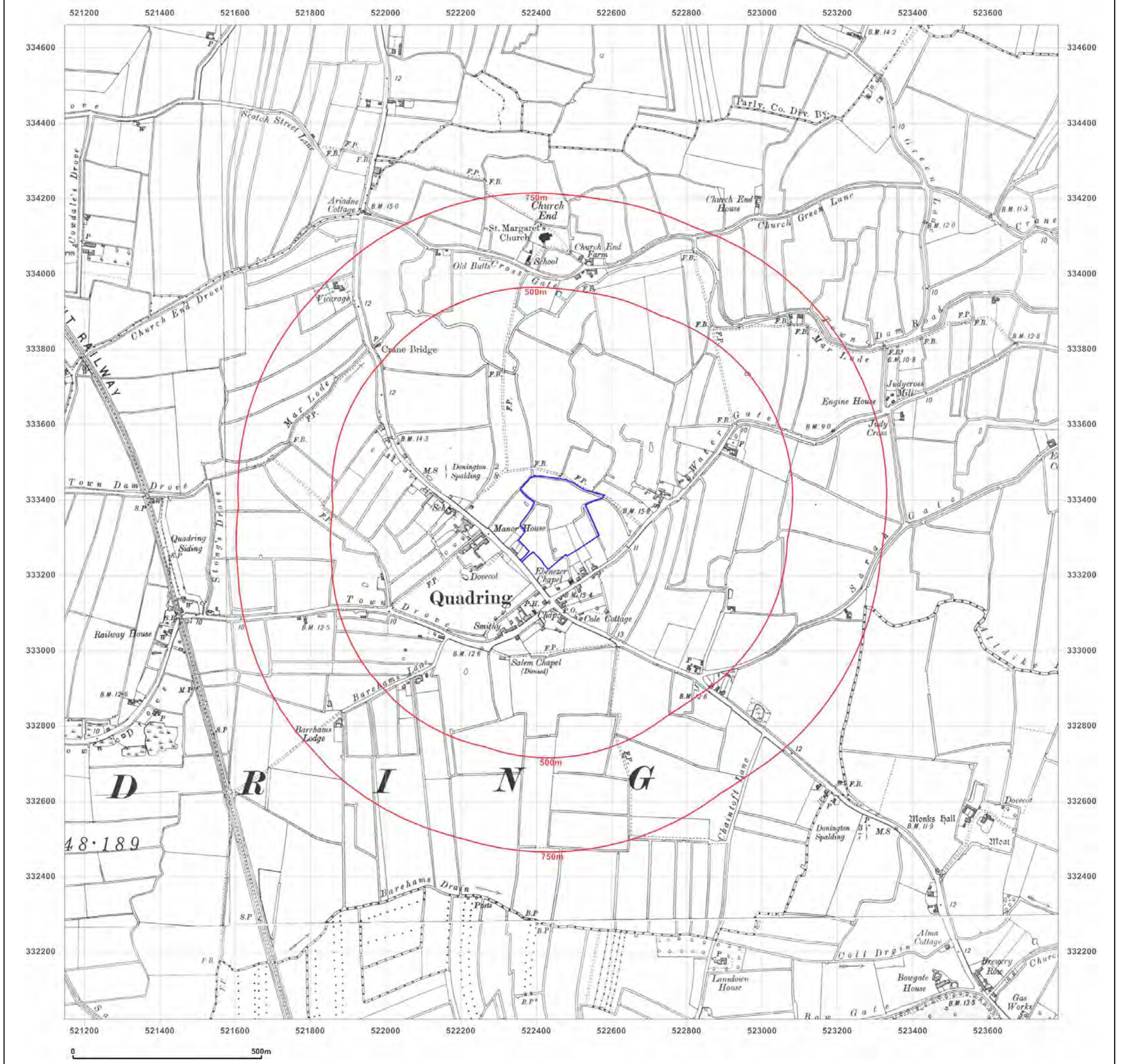
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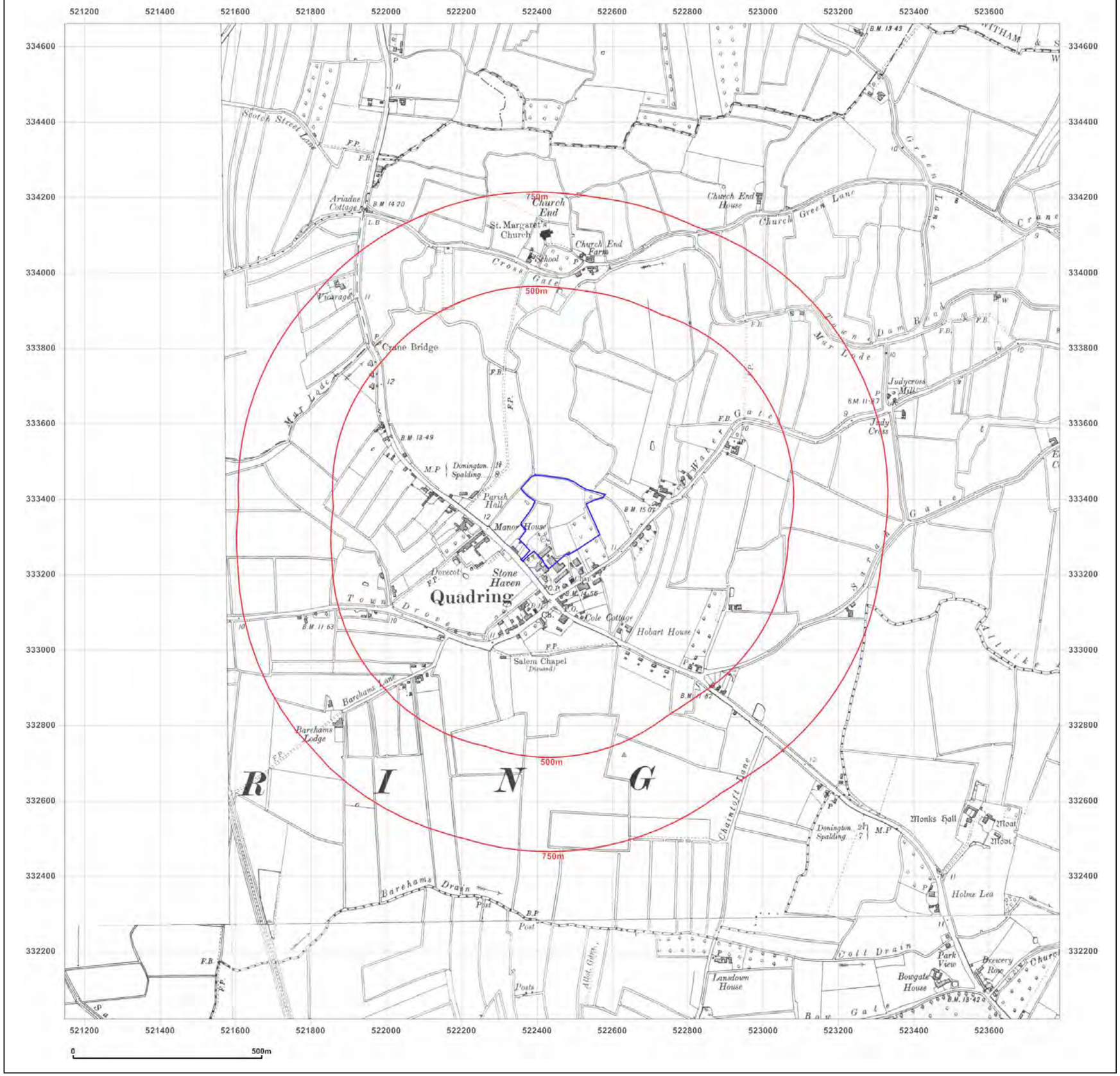
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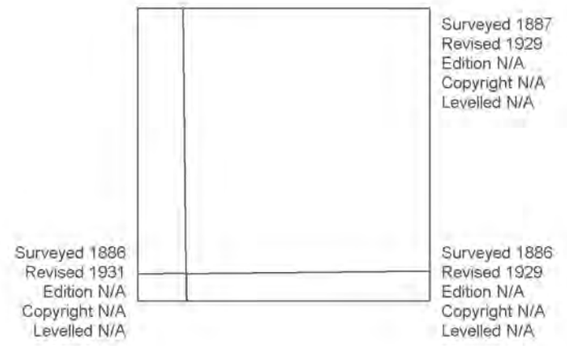
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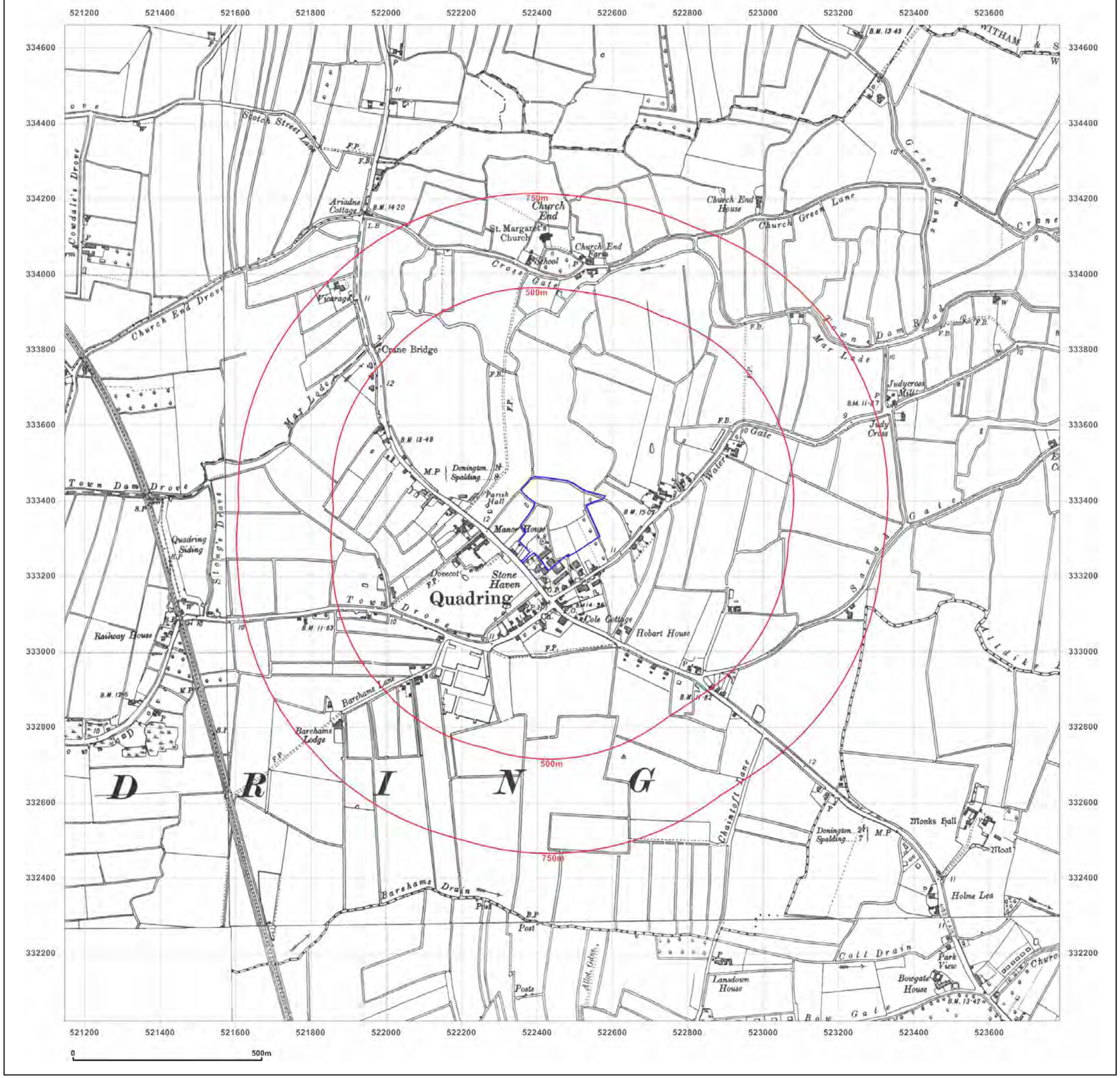
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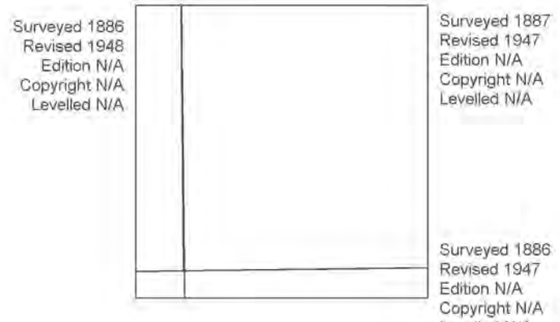
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Map date: **1947-1948**

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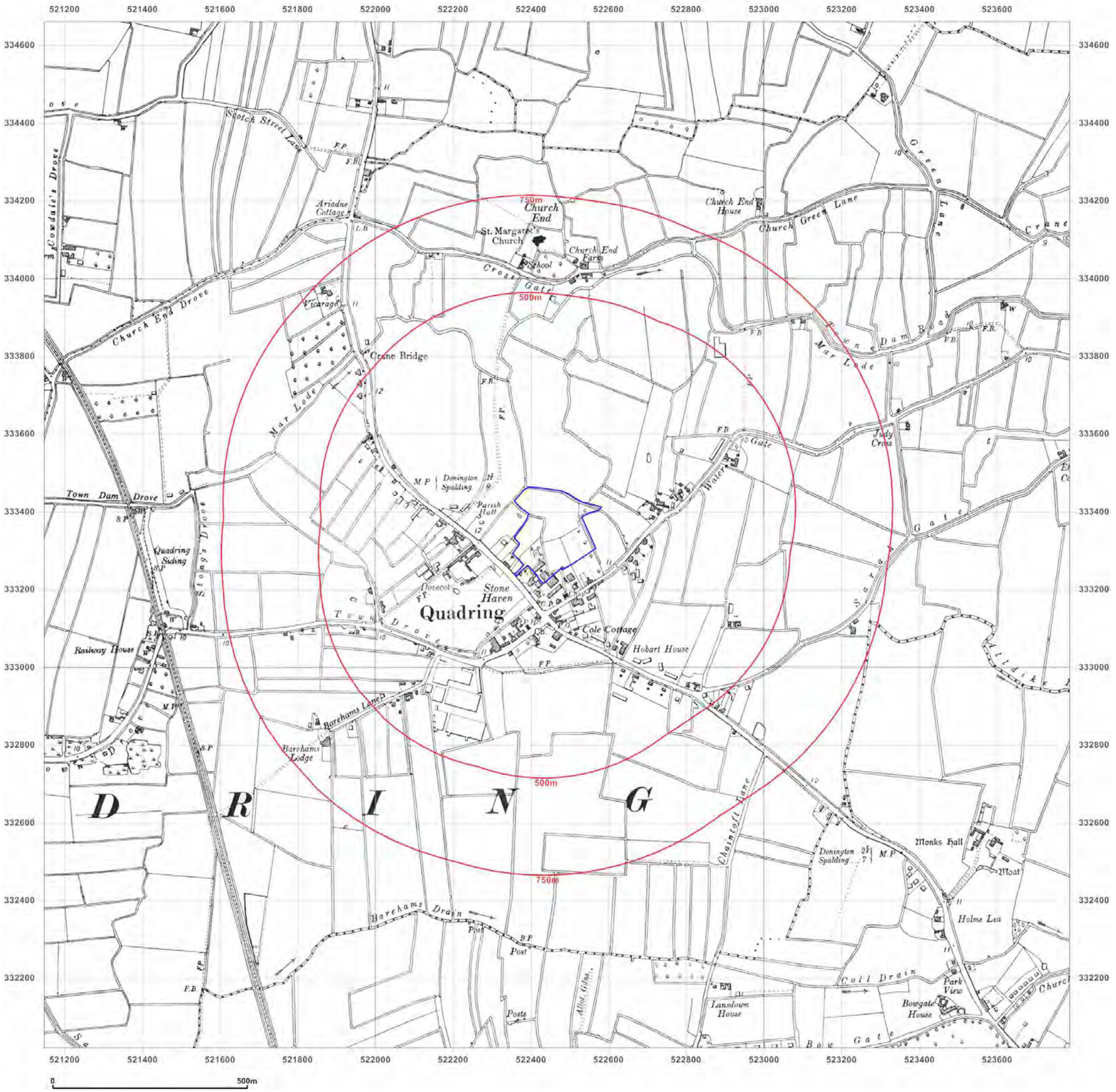
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Report Ref: GS-6534543
Grid Ref: 522466, 333340

Map Name: Provisional

Map date: **1956**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1955
Edition 1956
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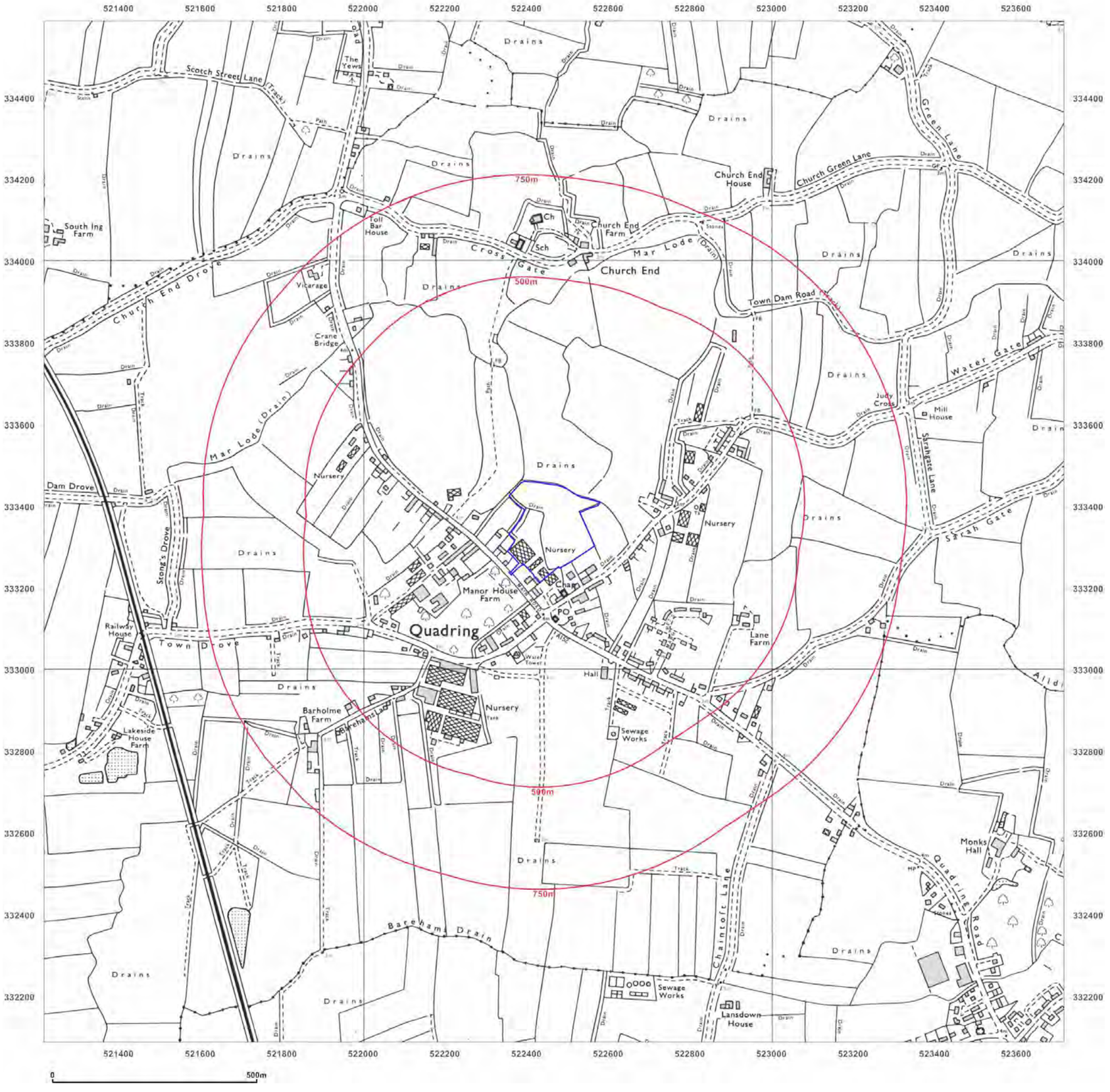
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Client Ref: BJH_20_005
Report Ref: GS-6534543
Grid Ref: 522466, 333340

Map Name: National Grid

Map date: **1977**

Scale: 1:10,000

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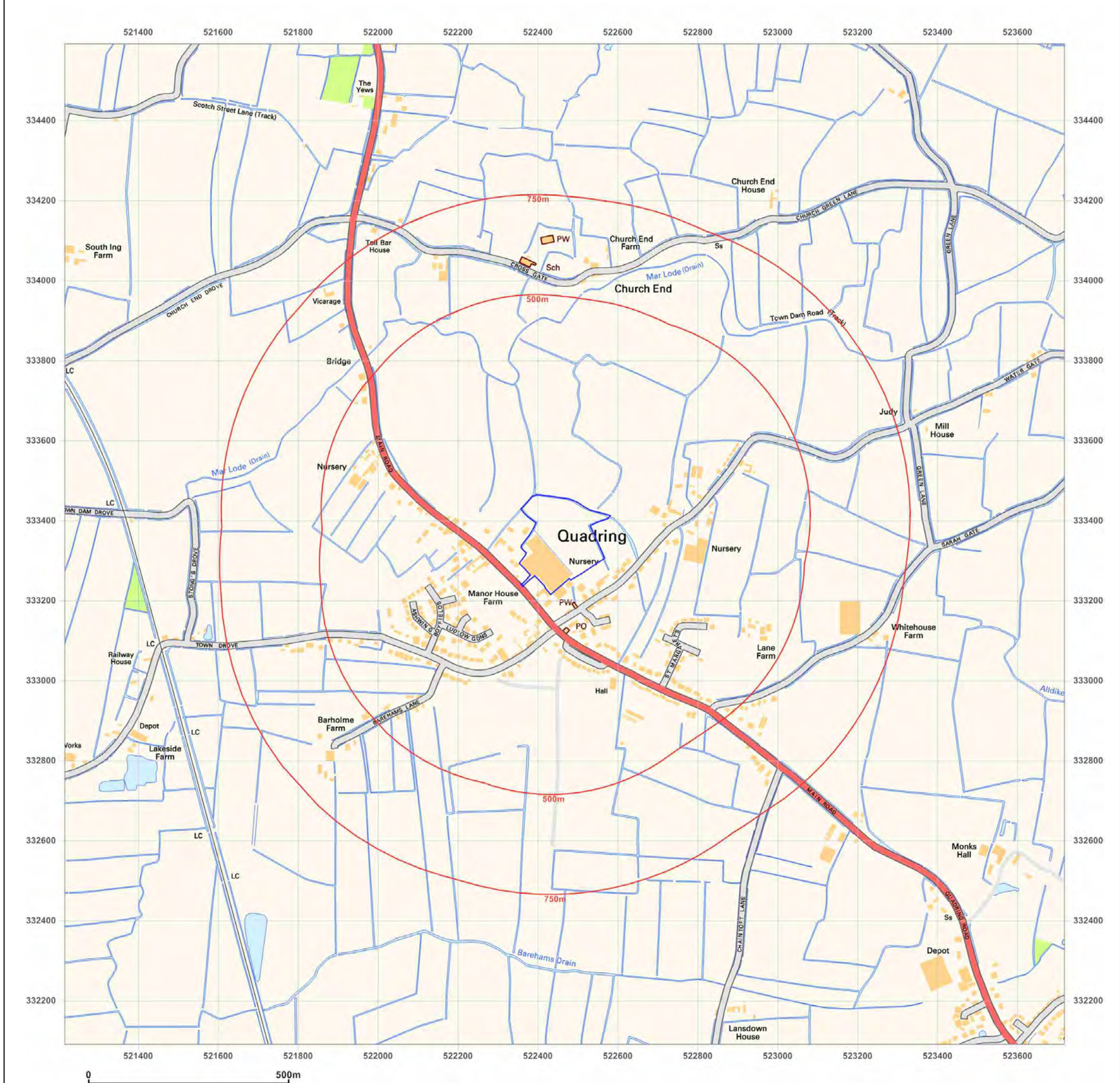
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Groundsure INSIGHTS

Site Details:

CROSSROADS NURSERIES,
MAIN ROAD, QUADRING,
SPALDING, PE11 4PJ

Client Ref: BJH_20_005
Report Ref: GS-6534543
Grid Ref: 522466, 333340

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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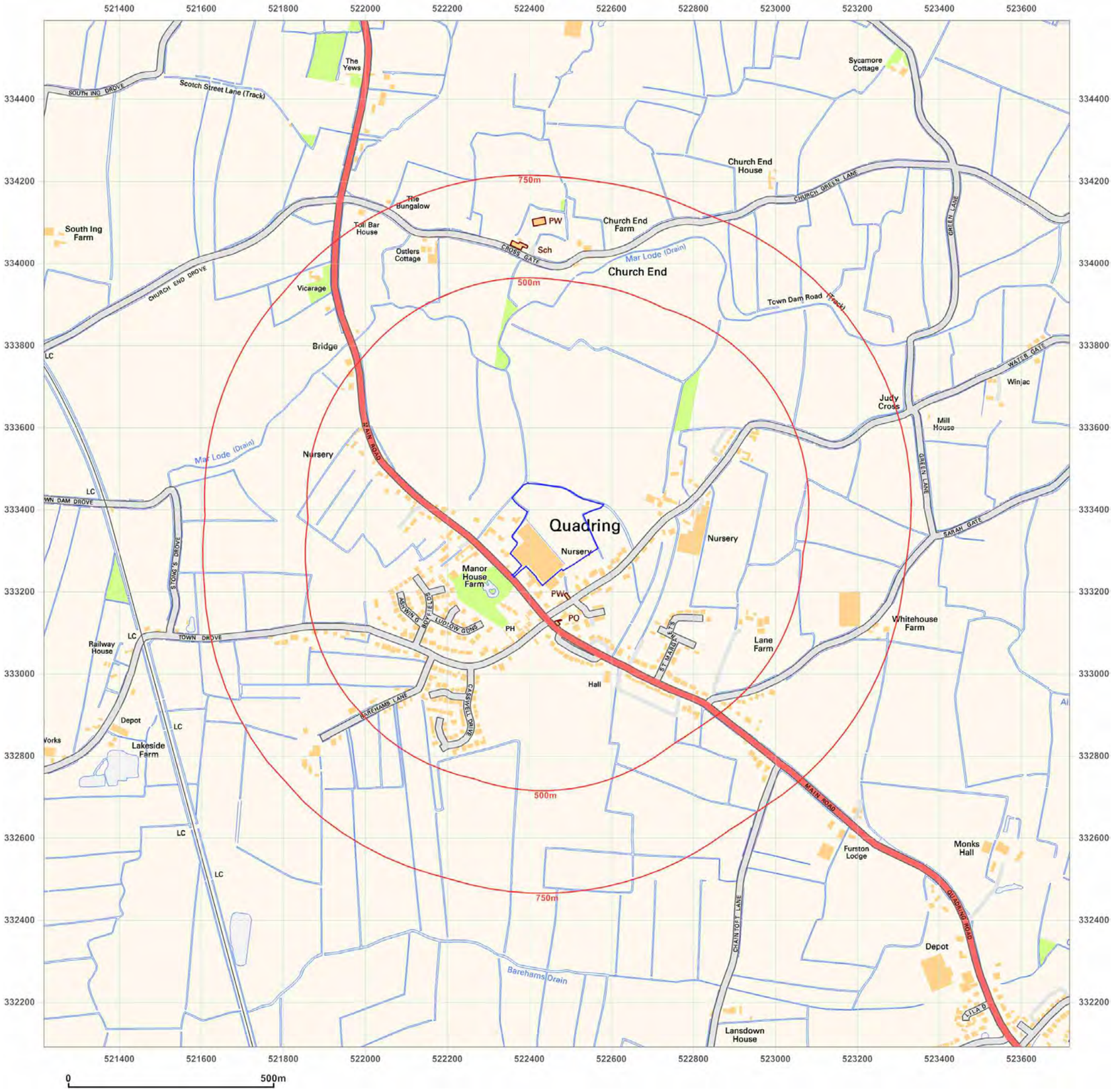
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Groundsure INSIGHTS

Site Details:

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SPALDING, PE11 4PJ

Client Ref: BJH_20_005
Report Ref: GS-6534543
Grid Ref: 522466, 333340

Map Name: National Grid
Map date: **2010**
Scale: 1:10,000
Printed at: 1:10,000

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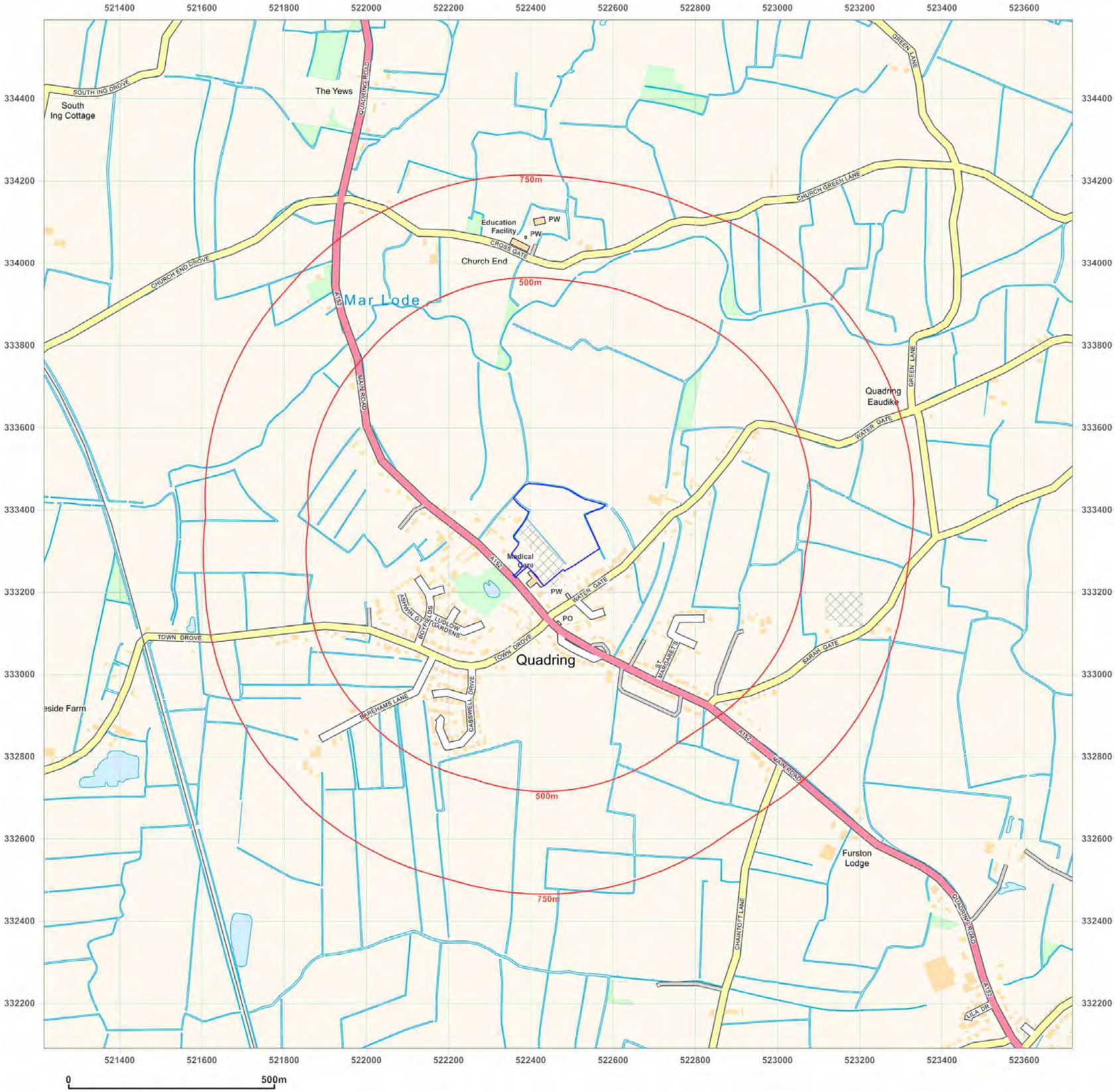
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Groundsure INSIGHTS

Site Details:

CROSSROADS NURSERIES,
MAIN ROAD, QUADRING,
SPALDING, PE11 4PJ

Client Ref: BJH_20_005
Report Ref: GS-6534543
Grid Ref: 522466, 333340

Map Name: National Grid

Map date: **2020**

Scale: 1:10,000

Printed at: 1:10,000

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Production date: 03 January 2020

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APPENDIX C: DRAWINGS

Drawing 21.320/PhaseI/01	Site Location Plan
Drawing 21.320/PhaseI/02	Relevant Feature Plan
Drawing CN/pl/phasing	Phasing Plan (Moulton Land and Planning, dated October 2019)

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North

Box indicates approximate location of drawing 21.320/Phasel/02

Scale 1: 50,000 @ A4

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A F Howland Associates
Geotechnical Engineers

Site: Crossroads Nursery, Quadring, Lincolnshire, PE11 4PJ

SITE LOCATION PLAN

Client : Crossroads Nursery Limited

Date : October 2021 **Dwg :** 21.320/Phasel/01

A F Howland Associates
Geotechnical Engineers

Drawing 21.320/PhaseI/02
Relevant Feature Plan

Photo 1 - Looking into south west corner from western boundary



Photo 2 - View along western boundary along ditch to rear of greenhouses



Photo 3 - Site overview looking south



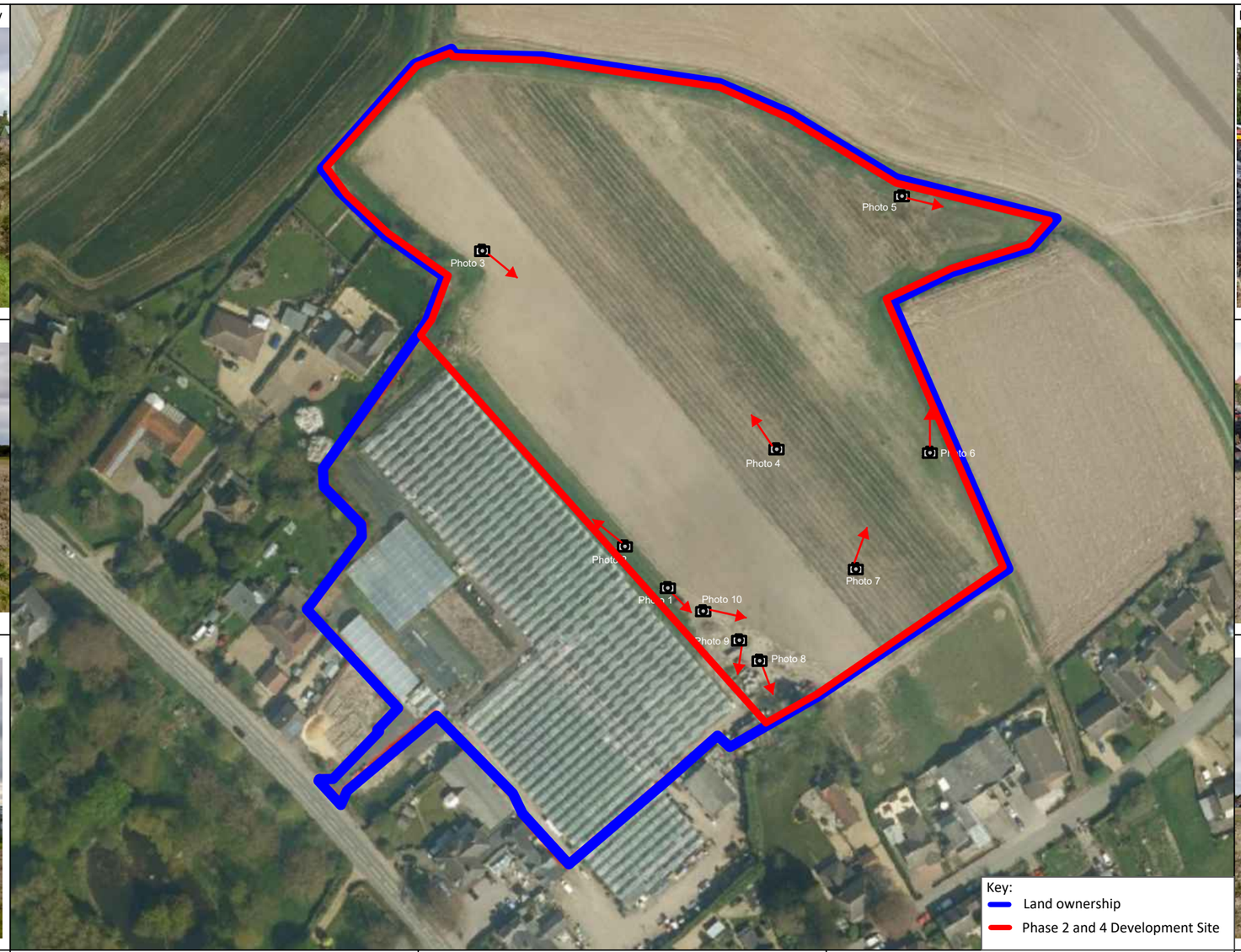


Photo 8 - Plastic crates and plant plug trays in south west corner



Photo 9 - Crates and machinery in south west corner



Photo 10 - Site overview looking east in southern half of site



Photo 4 - Site overview looking north



Photo 5 - Drainage ditch along eatern boundary, looking south



Photo 6 - Drainage ditch along eastern boundary, looking north



Photo 7 - Site overview looking north east



A F Howland Associates
Geotechnical Engineers

A F Howland Associates Ltd.
The Old Exchange
Newmarket Road
Cringleford
Norwich
NR4 6UF
Tel: 01603 250754
Website: www.howland.co.uk Email: admin@howland.co.uk

Client:	Crossroads Nursery Limited
Site:	Crossroads Nursery, Quadring, Lincolnshire, PE11 4PJ
Job No.:	21.320
Drawing title:	Relevant Feature Plan
Drawing No.:	21.320/PhaseI/02
Date:	October 2021

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Quadring

INDICATIVE SITE LAYOUT - Phase 1

MAIN ROAD

Main Road

Stonehaven Care Home

Adoptable Estate Road

Phase 1.
9 DWELLINGS

Phase 2

Phase 3
glasshouses

Phase 4

P.O.S.
inc. S.W. Attenuation

existing yard

new development

Restaurant

Post Office

Town Drove

Water Gate

drain

N

preliminary issue

total site 3.5 ha.
outline planning granted for
'up to 60 dwellings'
(ref H15-1207-18)

"FOR INITIAL CONSULTATION PURPOSES ONLY"
dpf oct 19.

mlp Moulton Land and Planning
moultonlandandplanning.co.uk 7 Broad Lane Moulton Lincs PE12 6PN
tel 01406 370081 mob 07484 101655 e-mail alan@moultonland.co.uk

Project
Proposed Residential Development
Crossroads Nurseries Ltd.
Main Road, Quadring, Lincs PE11 4PJ

Drawing
"Phasing Plan"

date oct 2019
scale(s) 1:1250 @A3
DRG. No. CN/pl/phasing

APPENDIX D: RISK ASSESSMENT CLASSIFICATION

Classification	Definition	Examples
High Likelihood	There is a pollution linkage and an event which would either appear very likely in the short term and almost inevitable over the long term, or, there is evidence at the receptor of harm or pollution.	Free product visible on surface of sensitive water body or in the soil. On site or adjacent gassing 'landfill site'.
Likely	There is a pollution linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.	Potentially contaminative land use i.e. 'Brownfield' site, fuel storage depot, factory, petrol station etc. Sensitive receptors to be introduced as part of site redevelopment. Potentially infilled land identified on site or off-site with credible migration pathway.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.	Potential source of contamination identified i.e. historical land use as allotments or domestic above ground fuel storage tanks, areas of burning garden waste. Possible off-site infilled land.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.	No significant potential sources of contamination identified e.g. 'Greenfield' site. No potential sources of ground gas.

TABLE D1: CLASSIFICATION OF PROBABILITY

Classification	Definition	Examples
Severe	**Short term (acute) risk to human health.** Short term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short term risk to a particular ecosystem.	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Credible source of ground gas.
Medium	**Chronic damage to Human Health.** **Pollution of sensitive water resources.** A significant change in a particular ecosystem, or organism forming part of such ecosystem.	Concentrations of a contaminant from site exceeds the generic, or site specific assessment criteria. Leaching of contaminants from a site to a Secondary or Principal aquifer or watercourse.
Mild	**Pollution of non-sensitive water resources.** Significant damage to buildings/structures and crops ("significant harm" as defined in the Circular on Contaminated Land, DETR, 2000). Damage to sensitive buildings/structures or the environment.	Concentrations of a contaminant do not exceed the generic, or site specific assessment criteria. Leaching of contaminants from a site to an Unproductive Aquifer. Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as Personal Protective Equipment, etc).	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme.

TABLE D2: CLASSIFICATION OF CONSEQUENCE

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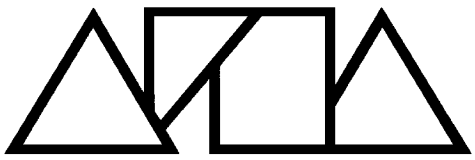
Classification	Definition
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard or there is evidence that severe harm is occurring. The risk, if realised, is likely to result in a substantial liability. **Urgent investigation and remediation will be required.**
High Risk	Harm or chronic damage is likely to arise to a designated receptor from an identified hazard. **Investigation is required and remediation is likely to be required** to ensure the site is suitable for a proposed use.
Moderate Risk	It is possible that harm or chronic damage could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe. **Investigation and remediation are likely to be required** to ensure the site is suitable for a proposed use.
Low/Moderate Risk	It is possible that harm or chronic damage could arise to a designated receptor from an identified hazard. **Investigation is likely to be required.** However, circumstances are such that investigation may prove the consequence to be mild and the site suitable for use without remediation.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard but it is likely that this harm, if realised, would at worst be mild. **Investigation is unlikely to be required.**
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe. **Investigation is not required.**

TABLE D3: DESCRIPTION OF RISK

		CONSEQUENCE			
		Severe	**Medium**	**Mild**	**Minor**
PROBABILITY	**High likelihood**	**Very High**	**High**	**Moderate**	**Low/Moderate**
	Likely	**High**	**Moderate**	**Low/Moderate**	**Low**
	Low likelihood	**Moderate**	**Low/Moderate**	**Low**	**Very Low**
	Unlikely	**Low/Moderate**	**Low**	**Very Low**	**Very Low**

TABLE D4: DETERMINATION OF RISK

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A F Howland Associates
The Old Exchange
Newmarket Road
Cringleford
Norwich
NR4 6UF

Tel: 01603 250754
Fax: 01603 250749
Email: admin@howland.co.uk
www: http://www.howland.co.uk