



# **BROWNFIELD SOLUTIONS LTD**

GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

## **ALDI STORES LTD**

Ruthin North Link Road

Desk Study Assessment Report

SF/C3197/6101

June 2016

## PROJECT QUALITY CONTROL DATA SHEET

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## CONTENTS

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	OBJECTIVES .....	1
1.2	PROPOSED DEVELOPMENT .....	1
1.3	LIMITATIONS.....	1
<b>2.0</b>	<b>THE SITE .....</b>	<b>2</b>
2.1	LOCATION & ACCESS.....	2
2.2	SITE DESCRIPTION.....	2
<b>3.0</b>	<b>ENVIRONMENTAL SETTING .....</b>	<b>3</b>
3.1	GEOLOGICAL SEARCH .....	3
3.2	HYDROGEOLOGY.....	3
3.3	HYDROLOGY .....	4
3.4	HISTORICAL SETTING .....	4
3.5	ENVIRONMENTAL SEARCHES .....	5
3.6	RADON .....	6
3.7	COAL AUTHORITY SEARCH .....	6
3.8	BGS BOREHOLES.....	6
<b>4.0</b>	<b>DESK STUDY SUMMARY AND RISK ASSESSMENT .....</b>	<b>7</b>
4.1	INTRODUCTION .....	7
4.2	POTENTIAL CONTAMINATIVE SOURCES.....	7
4.3	PATHWAYS.....	8
4.4	RECEPTORS.....	8
4.5	PRELIMINARY CONCEPTUAL SITE MODEL.....	8
4.6	GROUND GAS RISK ASSESSMENT .....	10
<b>5.0</b>	<b>DEVELOPMENT CONSTRAINTS .....</b>	<b>11</b>
5.1	FOUNDATIONS .....	11
5.2	OTHER CONSTRAINTS .....	11
<b>6.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>12</b>

DRAWINGS		
Drawing Number	Rev	Title
C3197/01	-	Site Location Plan
C3197/02	-	Pertinent Site Features Plan

APPENDICES	
<b>APPENDIX A</b>	<b>Historical Maps</b>
<b>APPENDIX B</b>	<b>Contaminated Land Officers Report</b>
<b>APPENDIX C</b>	<b>GroundSure Report</b>
<b>APPENDIX D</b>	<b>BGS Borehole Logs</b>
<b>APPENDIX E</b>	<b>Risk Assessment Methodology</b>
<b>APPENDIX F</b>	<b>Legislative Background</b>
<b>APPENDIX G</b>	<b>Limitations</b>

**DESK STUDY ASSESSMENT REPORT  
FOR A SITE OFF RUTHIN NORTH LINK ROAD,  
RUTHIN**

## **1.0 INTRODUCTION**

### **1.1 Objectives**

1.1.1 This report describes a Desk Study Assessment carried out by Brownfield Solutions Limited (BSL) for Aldi Stores Ltd on a site off Ruthin North Link Road, Ruthin.

1.1.2 The objectives of the Desk Study Assessment were to determine the sites environmental setting and likely site conditions, highlighting potential areas of concern that may govern the sites redevelopment.

1.1.3 The report has been completed to fulfil the requirements of a preliminary risk assessment in accordance with CLR11 "Model Procedures for the Management of Land Contamination".

### **1.2 Proposed Development**

1.2.1 The proposed development is commercial end use comprising a steel framed retail building and associated car park areas.

### **1.3 Limitations**

1.3.1 This Desk Study Assessment has been carried out based on information obtained from a number of areas, BSL have assumed that this information is correct.

1.3.2 There may be other conditions prevailing on the site which are outside the scope of work and have not been highlighted by this assessment and therefore not been taken into account by this report. Responsibility cannot be accepted for such site conditions not revealed by the assessment.

1.3.3 This report has been prepared for the sole use of the client. No other third parties may rely upon or reproduce the contents of this report without the written permission of Brownfield Solutions Ltd (BSL). If any unauthorised third party comes into possession of this report they rely on it at their own risk and BSL do not owe them any Duty of Care.



## **2.0 THE SITE**

### **2.1 Location & Access**

- 2.1.1 The site covers an area of approximately 3.67 hectares and is situated approximately 1.2 kilometres north west of Ruthin town centre.
- 2.1.2 The site is centred on National Grid Reference 311478, 358984 as shown on the Site Location Plan C3197/01.
- 2.1.3 Access to the site is gained off Lon Gwernydd to the west of the site.

### **2.2 Site Description**

- 2.2.1 The site is irregular in shape and slopes down to the east at an average of circa 1.5°. The site is approximately 1.0m lower topographically than the road in the west, marked by a steep embankment. The site is currently an undeveloped field.
- 2.2.2 Mature broadleaf trees and hedges are present around the perimeter of the site, however no trees are present within the site.
- 2.2.3 The site is bound by trees and hedges in the north, east and south. A steep embankment bounds the site in the west.
- 2.2.4 There are factory buildings to the north of the site, a field immediately to the east, a cattle market to the south and Lon Gwernydd Road immediately to the west with fields beyond.
- 2.2.5 Areas of concern are shown on the pertinent site features plan C3197/02.

## **3.0 ENVIRONMENTAL SETTING**

### **3.1 Geological Search**

3.1.1 The following publications of the British Geological Survey (BGS) were examined in respect of the geology underlying the site:

- 1:50,000 Scale Geological Sheet 108, Flint. Solid Edition.
- 1:50,000 Scale Geological Sheet 108, Flint. Solid and Drift Edition.
- Interactive BGs Map.

#### Made Ground

3.1.2 No made ground is indicated to underlie the site.

#### Superficial Deposits

3.1.3 The east half of the site is indicated to be underlain by alluvium. This strata typically comprises clay, silt, sand and gravel. The west half of the site is indicated to be underlain by alluvial fan deposits. This strata typically comprises sand and gravel.

#### Solid Geology

3.1.4 The solid geology underlying the site is indicated to be the Kinnerton Sandstone Formation. This strata typically comprises Sandstone.

3.1.5 No faults are shown on or within an influencing distance of the site.

### **3.2 Hydrogeology**

3.2.1 The superficial deposits in this area are classified by the Environment Agency as a Secondary A Aquifer. This is defined as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers. They are classified as having a high leaching potential (soils which have little ability to attenuate diffuse source pollutants and therefore have the potential to allow pollutants to travel rapidly).

3.2.2 The bedrock is classified as a Principal Aquifer. These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

3.2.3 There are no source protection zones within 500m of the site.

3.2.4 The nearest groundwater abstraction is 134m south east of the site and is for general washing/ process washing.

### 3.3 Hydrology

- 3.3.1 The nearest watercourse to the site is a secondary river which bounds the site to the east this is directly adjacent to a tertiary river. There is also a secondary river 146m north of the site.
- 3.3.2 Information obtained from the Environment Agency indicates that the northern most corner of the site is classified as a zone 2 floodplain. The EA zone 2 floodplain estimates the annual probability of flooding from rivers as between 1 in 1000 (0.1%) and 1 in 100 (1%).
- 3.3.3 The most recent biological and chemical data for the River Clwyd indicates that the river quality is grade A.
- 3.3.4 The nearest surface water abstraction is 1092m south east of the site.

### 3.4 Historical Setting

- 3.4.1 Information has been obtained from historical Ordnance Survey Maps with the pertinent issues that may have affected the site or its environs summarised below.
- 3.4.2 The following plans produced by the Ordnance Survey were examined.

Scale	Date
1:2500	1876, 1900, 1913, 1968, 1976, 1986, 1992, 1994
1:10000/10560	1874, 1899, 1914, 1938, 1949, 1959, 1975, 1992, 2002, 2010, 2014

#### The Site

- 3.4.3 The earliest map dated 1874 indicates the site to be an undeveloped field. The site has remained largely unchanged and undeveloped up to the present time.
- 3.4.4 Marsh land is indicated within the northern corner of the site on the map of 1968.
- 3.4.5 There are no further changes to the site on the later maps.

#### Surrounding Area

- 3.4.6 The earliest map available of 1874 shows the site to be surrounded by undeveloped fields. There is a road immediately adjacent the south west boarder of the site. A brick field is located circa 450m north east of the site. The Denbigh Ruthin and Corwen railway line runs north west to south east circa 700m north east of the site. A tannery is located approximately 750m south east.
- 3.4.7 The map of 1876 shows **old limekilns** circa 250m north west of the site.
- 3.4.8 A **mineral railway** is shown approximately 250m north of the site on the map of 1899.

- 3.4.9 There are no significant changes until the map of 1962, where a **repair garage** is shown circa 200m north east of the site. A well is shown approximately 190m north west of the site.
- 3.4.10 By 1975 **depots** are shown circa 20m north and 670m east of the site. Works buildings are shown 400m north of the site and a sewage works is approximately 700m north east.
- 3.4.11 The map of 1986 shows a **factory** and additional **depot** 30m north of the site. A **sawmill** is shown circa 200m north east adjacent to the pre-existing repair garage.
- 3.4.12 The map of 1992 shows a **livestock market** 10m south of the site.
- 3.4.13 An additional **depot** is shown 100m north east of the site on the map of 1994.
- 3.4.14 The latest map of 2014 shows a large building circa 75m east of the site.
- 3.4.15 The Historical Maps are presented in Appendix A.

### 3.5 Environmental Searches

- 3.5.1 A formal request was made to Denbighshire Contaminated Land Department for information pertaining to the site this information is presented in Appendix B. A summary of the relevant findings is presented below:
- 3.5.2 There have been no recorded pollution incidents at the site.
- 3.5.3 There are no records of contamination at the site.
- 3.5.4 There are no open or closed landfill sites within 250m of the site.
- 3.5.5 An Environmental Search has been conducted through Groundsure, which utilises British Geological Survey and Environment Agency databases. The full report can be found in Appendix C. Although a summary of the more relevant findings is presented below.

Entry	0 – 249m	250 – 500m	Details
Authorised industrial processes (IPC/IPPC/LAPPC)	0	0	
Pollution Incidents	1	0	There is one recorded pollution incident relating to diesel which occurred 246 north east of the site in August 2001. The incident cause Category 3 (minor) incident to water and land and had a Category 4 (no impact) to the air.
Landfill and Waste treatment	0	1	There is a recycling facility 381m north east of the site.
Discharge consent	1	5	Closest discharge consent is 113m to the north east and relates to sewage

Entry	0 – 249m	250 – 500m	Details
			discharges.
Control of Major Accident Hazard (COMAH) sites	0	0	
Consents issued under planning (Hazardous substances) Act 1990	1	0	There is one consent issued under planning 18m north west of the site at L E Jones Ltd, however no details are available.
Radioactive substances	0	0	
Fuel Station entries	0	1	The nearest fuel station entry is an Esso garage 260 south east of the site.
Other Current industrial land uses	16	0	There are four industrial site uses within 100m of the site, including storage facilities, cutting, drilling and welding services and a photographic and optical equipment business.

### 3.6 Radon

3.6.1 Map 13 Northern Welsh Marches and Liverpool was inspected which defines areas which require radon protective measures. The site is in an area requiring full Radon precautions in foundations in accordance with BRE Report 211 'Radon – Guidance on protective measures for new dwellings' 2015 Edition.

3.6.2 BRE Report 211 provides a general indication of which areas require radon protection, a site specific assessment should be carried out through UK Radon or BGS.

### 3.7 Coal Authority Search

3.7.1 The site is outside the area of a designated coalfield, the Law Society and Coal Authority state a mining search is not required.

### 3.8 BGS Boreholes

3.8.1 There are five trial pit logs directly adjacent to the south of the site on the livestock market to circa 2.0m bgl. All of the logs indicate silt or clay alluvium overlying loose sand and gravel which correlates with the published geology.

3.8.2 The BGS Borehole Logs are presented in Appendix D.

## 4.0 DESK STUDY SUMMARY AND RISK ASSESSMENT

### 4.1 Introduction

4.1.1 The risk posed by any contaminants in soil or groundwater will depend on the nature and level of the source, the probability of exposure occurring, the potential pollution pathway and the likely effects on the receptors.

4.1.2 A contaminant is defined as a substance that has the potential to cause harm, a risk is considered to exist if such a substance is present at sufficient concentrations to cause harm and if a pathway is present a receptor could be exposed to the contaminant.

4.1.3 The following sections discuss the identified potential on-site and off-site sources, and any pollution that could impact receptors associated with the proposed development. Pollution linkages are assessed which may represent a risk to human health and/or controlled water receptors from the information gained from the desk study searches. The assessment has been carried out on a qualitative basis and aims to produce a complete and comprehensive Preliminary Conceptual Site Model.

4.1.4 Three potential impacts exist for any given site and all three need to be considered in the qualitative risk assessment, these are:

- On- site impacts;
- The site impacting its surroundings;
- Off-site sources impacting the subject site.

### 4.2 Potential Contaminative Sources

#### On-Site

4.2.1 From the information obtained during the desk study there are no potential on-site sources which may affect the redevelopment of the site for commercial end use.

#### Off-Site

4.2.2 The information examined during the desk study has highlighted multiple potential off-site sources of contamination which may affect the redevelopment of the site for commercial end use, these are listed below:

- Livestock Market - 10m south
- Depot - 20m north (closest)
- Factory - 30m north
- Sawmill - 200m north east
- Repair Garage - 200m north east
- Old Lime Kilns - 250m north west
- Mineral Railway - 250m north

#### Associated Contaminants

- 4.2.3 The contaminants commonly associated with the potential off-site sources of contamination include heavy metals, PAHs, hydrocarbons, PCBs, sulphides, acids, alkalis, creosote and ash.

### **4.3 Pathways**

- 4.3.1 A pathway is defined as a medium by which a contaminant comes into contact with, or otherwise impacts a receptor. Due to the sites proposed end use being commercial potential pollution pathways for contaminant migration at the site will exist.

- 4.3.2 At this stage the potential contaminants identified above are considered to present potential risks to site end users and controlled waters through the following pathways:

- Ingestion of contaminated soils;
- Dermal contact with contamination;
- Inhalation of gases or vapours in both indoor and outdoor air;
- Direct contact by buried structures such as services pipes;
- Surface run-off;
- Leaching of mobile contamination into groundwater;
- Migration of perched groundwater in any permeable soils or along existing or proposed service runs
- Saturated zone flow through the Secondary A Aquifer underlying the site;

### **4.4 Receptors**

- 4.4.1 Receptors generally fall into the categories of human health or controlled waters. The identified receptors are listed below:

- Site end users
- Secondary A Aquifer Superficial Deposits
- Principal Aquifer Bedrock
- Secondary River Immediately West
- Tertiary River Immediately West

- 4.4.2 Contaminants within the soil and groundwater could potentially attack the clean potable water supply pipe, the contaminants should be assessed to determine the correct pipe material and level of precautions.

### **4.5 Preliminary Conceptual Site Model**

- 4.5.1 The information obtained in the previous sections has been used to compile a Preliminary CSM. The identified potential contaminants and receptors have been assessed in the table below as to whether a plausible source-pathway-receptor pollutant linkage for the proposed end use of the site exists. The risk classification has been estimated in accordance with information in Appendix E.

#### Human Health

- 4.5.2 The Preliminary CSM for human health is presented in the table below:

Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk
<b><u>ON-SITE</u></b>					
Radon	Inhalation of gases, accumulation of radioactive gases.	End Users	Likely	Medium	Moderate
<b><u>OFF-SITE</u></b>					
Livestock Market	Ingestion, direct contact, inhalation of dusts/ vapours.	End Users	Low likelihood	Medium	Moderate/Low
Depot	Ingestion, direct contact, inhalation of dusts/ vapours.	End Users	Low likelihood	Medium	Moderate/Low
Factory	Ingestion, direct contact, inhalation of dusts/ vapours.	End Users	Low likelihood	Medium	Moderate/Low
Sawmill	Ingestion, direct contact, inhalation of dusts/ vapours.	End Users	Unlikely	Medium	Low
Repair Garage	Ingestion, direct contact, inhalation of dusts/ vapours.	End Users	Unlikely	Medium	Low
Old Lime Kilns	Ingestion, direct contact, inhalation of dusts.	End Users	Unlikely	Medium	Low
Mineral Railway	Ingestion, direct contact, inhalation of dusts.	End Users	Unlikely	Medium	Low

### Human Health Justification

- 4.5.3 Historically the site has always been an undeveloped field, therefore no on-site sources of contamination are anticipated to impact the site. Between 1986 and 1992 a livestock market was established immediately south of the site. Due to the close proximity to the site it may have impacted the southern portion of the site. Therefore the risk is considered moderate/ low.
- 4.5.4 A depot and factory are located 20m – 30m north of the site which have potentially impacted the site with an array of contaminants including heavy metal, PAHs and hydrocarbons. Due to the relative immobility of the associated contaminants there is a low likelihood of impaction in the north of the site and therefore the risk is considered moderate/ low.
- 4.5.5 The site is indicated to be in an area requiring full radon precautions, therefore any development at the site is likely to be impacted by radon gas. Due to the likelihood and severity the risk is considered moderate.
- 4.5.6 There are a number of contaminants associated with further off-site sources highlighted in the table above, however due to the proximity to site and relatively immobile nature of the associated contaminants risk to site end users is considered low.





### Controlled Waters

4.5.7 No on-site sources of contamination have been identified by the desk study, therefore no risk to controlled waters is present at the site.

### **4.6 Ground Gas Risk Assessment**

4.6.1 No on or off-site sources of ground gas have been identified by the desk study, therefore no ground gas monitoring is required.



## **5.0 DEVELOPMENT CONSTRAINTS**

### **5.1 Foundations**

- 5.1.1 The proposed development is a commercial end use comprising a steel framed retail store with associated external hardstanding areas.
- 5.1.2 No made ground is anticipated at the site.
- 5.1.3 Natural strata underlying the site is indicated by BGS trial pit logs to be alluvial deposits of soft silt and clay over loose alluvial fan sands and gravels. Sands and gravels are likely to be shallower in the west as indicated by the published geology.
- 5.1.4 Foundations may be affected by trees near the boundaries of the site if cohesive strata are encountered at the foundation depth.
- 5.1.5 Due to the soft and variable nature of alluvial deposits shallow foundations may not be feasible at the site.
- 5.1.6 Granular deposits of sand and gravel are indicated to be present in the west of the site, therefore soakaways may be feasible at the site.
- 5.1.7 This should be confirmed by on site intrusive investigations.

### **5.2 Other Constraints**

- 5.2.1 The site is approximately 1.0m lower than the road level and slopes shallowly to the east.

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Environmental**

- 6.1.1 The site has not previously been developed and is considered Greenfield, therefore there are no on-site sources of contamination and no risk to groundwater.
- 6.1.2 Several off-site sources of contamination have been identified by the desk study which are considered a risk to site end users. A cattle market immediately south of the site is considered a moderate/ low risk. A depot and factory 20m – 30m north of the site are considered a moderate/ low risk. The remaining off-site sources are considered low risk due to their proximity to the site and the relative immobility of the associated contaminants.
- 6.1.3 No on or off-site ground gas sources have been identified by the desk study therefore there is no risk from ground gases at the site. However the site is in an area where full radon precautions are required, therefore a moderate risk from radon gas is present.
- 6.1.4 Proposed hardstanding at the site will generally mitigate from any contamination associated with off-site sources at the site. Full radon precautions incorporated within proposed buildings will remove the pathway for migration of radon gas.

### **6.2 Geotechnical**

- 6.2.1 Traditional shallow foundations may not be suitable at the site due to soft and variable alluvial deposits.
- 6.2.2 Foundations will be determined by an intrusive site investigation.

### **6.3 Further Work**

- 6.3.1 Therefore to allow future development of the site the following further works are recommended, although this list is not exhaustive and should be read in conjunction with any planning conditions that are applicable to the site.

- Topographical survey
- Intrusive site investigations comprising cable percussive boreholes, trial pitting and soakaways.
- Design of remedial strategy if required.
- Foundation design
- Confirmation of Remedial Strategy Local Authority

## DRAWINGS

**APPENDIX A  
HISTORICAL MAPS**

**APPENDIX B  
Contaminated Land Officers Report**

**APPENDIX C  
GroundSure Report**

**APPENDIX D  
BGS Borehole Logs**



**APPENDIX E**  
**Risk Assessment Methodology**

## Contaminated Land Risk Assessment

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:

Hazard Identification ⇨ Hazard Assessment ⇨ Risk Estimation ⇨ Risk Evaluation

CLR11 outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process. Under CLR11, three tiers of risk assessment exist - Preliminary, Generic Quantitative and Detailed Quantitative.

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

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

- **High likelihood:** There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- **Likely:** There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- **Low likelihood:** There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term;
- **Unlikely:** There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.

The severity is also classified using a system based on CIRIA C552. The terms and definitions are:

- **Severe:** Short term (acute) risk to human health likely to result in ‘significant harm’ as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000);

*Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse;*
- **Medium:** Chronic damage to human health (‘significant harm’ as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000);

*Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve;*
- **Mild:** Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000). Damage to sensitive buildings, structures, services or the environment;

*Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.*
- **Minor:** harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.

*Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.*

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

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

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:

- **Very high:** 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 currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required;
- **High:** Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term;
- **Moderate:** It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term;
- **Low:** It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild;
- **Very Low:** 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.

**APPENDIX F**  
**Legislative Background**

## Legislative Background

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act;
- The Contaminated Land (England) Regulations 2000;
- The DETR circular 02/2000 Environmental Protection Act 1990: Part IIA Contaminated Land.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

- 1) Significant harm is being caused or there is a significant possibility of such harm being caused;
- 2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

- **Source** - substances that are potential contaminants or pollutants that may cause harm;
- **Pathway** - a potential route by which contaminants can move from the source to the receptor;
- **Receptor** - a receptor that may be harmed, for example the water environment, humans and water.

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused. The presence of a source does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm. The nature and importance of both pathways and receptors are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the SPR approach is 'suitable for use' criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

## Relevant Guidance Documents

This report has been prepared in accordance with the list of guidance below however the list is not exhaustive:

- CLR11 – Model Procedures;
- Contamination and Environmental Matters - Their implications for Property Professionals (2nd Edition RICS Nov 2003);
- Brownfields – Managing the development of previously developed land – A client's guide, CIRIA 2002;
- DEFRA and Environment Agency publications CLR7 – 10, supported by the TOX guides and SGV guides, dated March 2002;
- DETR Circular 02/2000, Contaminated Land: Implementation of Part IIA of the Environmental Protection Act 1990;
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002;

## Relevant Legislative Documents

The following is a non-exhaustive list of legislative framework documents that has been considered in the production of this report:

- The Environment Act (1995);
- The Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012);
- The Environment Protection Act (1990);
- The Contaminated Land (England) Act (2000);
- Contaminated Land (England) Regulations (2012);
- The Water Resources Act (1991);
- The Pollution Prevention and Control (England and Wales) Regulations (2000);
- The Landfill Regulations (England and Wales) Regulations (2002);
- The Landfill (England and Wales) (Amendment) Regulations (2004);
- Health and Safety at Work Act;

**APPENDIX H  
Limitations**

## **Standard Limitations**

This desk study report was conducted and has been prepared for the sole internal use and reliance of the Client, Aldi Stores Ltd. This report shall not be relied upon or transferred to any other parties without the express written authorisation of BSL. If an unauthorised third party comes into possession of this report they rely on it at their risk and the authors owe them no duty of care or skill.

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Any recommendations made in this report should be confirmed with the Regulatory bodies and Planning Authority prior to implementation to ensure compliance.

No existing manhole covers were lifted or drainage runs inspected during the course of this ground investigation.

The site plans enclosed in this report should not be scaled off.



## DRAWINGS

**APPENDIX A  
HISTORICAL MAPS**

**APPENDIX B  
Contaminated Land Officers Report**

**APPENDIX C  
GroundSure Report**

**APPENDIX D  
BGS Borehole Logs**

**APPENDIX E**  
**Risk Assessment Methodology**

## Contaminated Land Risk Assessment

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:

Hazard Identification ⇨ Hazard Assessment ⇨ Risk Estimation ⇨ Risk Evaluation

CLR11 outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process. Under CLR11, three tiers of risk assessment exist - Preliminary, Generic Quantitative and Detailed Quantitative.

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

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

- **High likelihood:** There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- **Likely:** There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- **Low likelihood:** There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term;
- **Unlikely:** There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.

The severity is also classified using a system based on CIRIA C552. The terms and definitions are:

- **Severe:** Short term (acute) risk to human health likely to result in ‘significant harm’ as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000);  
*Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse;*
- **Medium:** Chronic damage to human health (‘significant harm’ as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000);  
*Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve;*
- **Mild:** Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000). Damage to sensitive buildings, structures, services or the environment;  
*Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.*
- **Minor:** harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.  
*Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.*

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

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

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:



- **Very high:** 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 currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required;
- **High:** Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term;
- **Moderate:** It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term;
- **Low:** It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild;
- **Very Low:** 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.

**APPENDIX F  
Legislative Background**

## Legislative Background

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act;
- The Contaminated Land (England) Regulations 2000;
- The DETR circular 02/2000 Environmental Protection Act 1990: Part IIA Contaminated Land.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

- 1) Significant harm is being caused or there is a significant possibility of such harm being caused;
- 2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

- **Source** - substances that are potential contaminants or pollutants that may cause harm;
- **Pathway** - a potential route by which contaminants can move from the source to the receptor;
- **Receptor** - a receptor that may be harmed, for example the water environment, humans and water.

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused. The presence of a source does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm. The nature and importance of both pathways and receptors are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the SPR approach is 'suitable for use' criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

## Relevant Guidance Documents

This report has been prepared in accordance with the list of guidance below however the list is not exhaustive:

- CLR11 – Model Procedures;
- Contamination and Environmental Matters - Their implications for Property Professionals (2nd Edition RICS Nov 2003);
- Brownfields – Managing the development of previously developed land – A client's guide, CIRIA 2002;
- DEFRA and Environment Agency publications CLR7 – 10, supported by the TOX guides and SGV guides, dated March 2002;
- DETR Circular 02/2000, Contaminated Land: Implementation of Part IIA of the Environmental Protection Act 1990;
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002;

## Relevant Legislative Documents

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- Health and Safety at Work Act;

**APPENDIX H  
Limitations**

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The findings and opinions conveyed via the desk study are based on information obtained from a variety of sources as detailed within this report, which BSL believes are reliable. Nevertheless, BSL cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

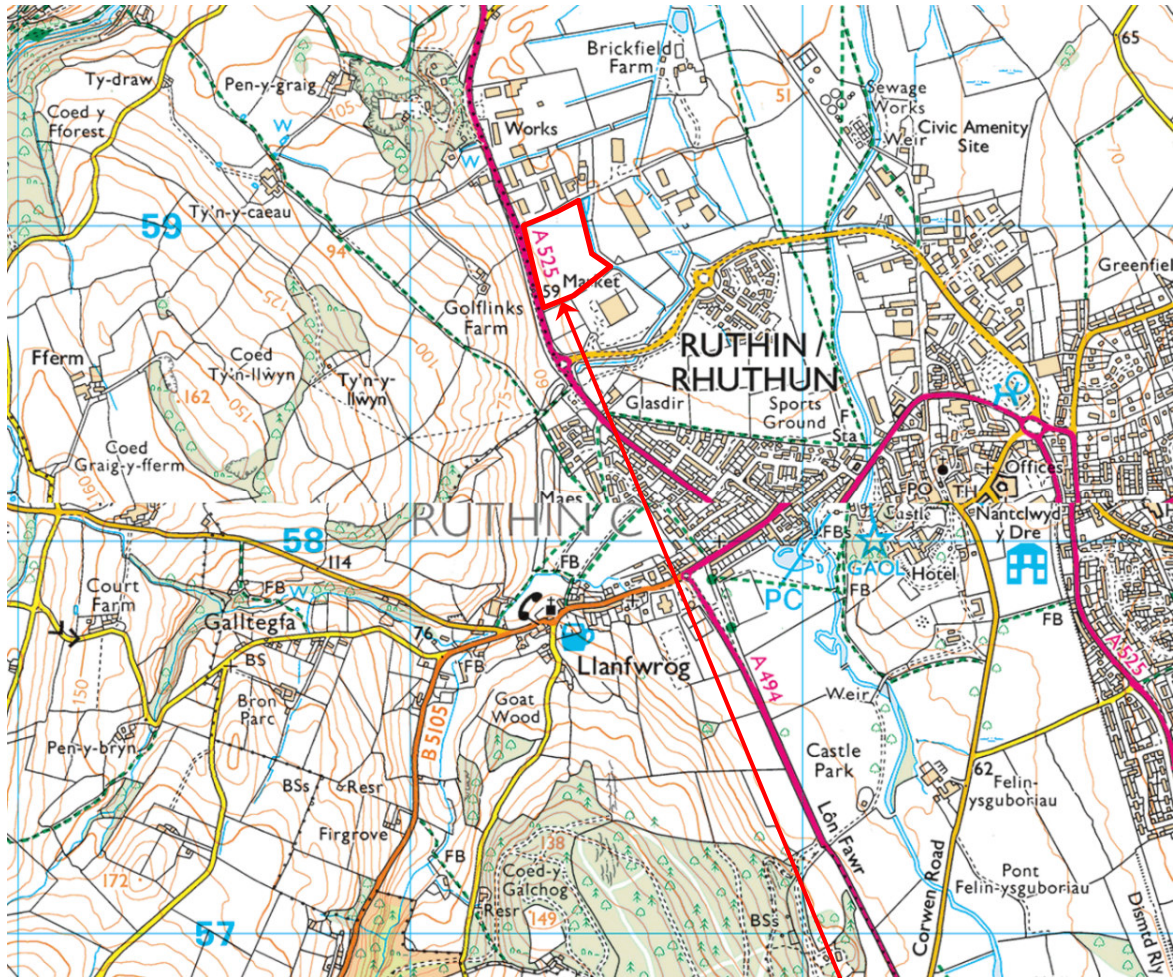
Any recommendations made in this report should be confirmed with the Regulatory bodies and Planning Authority prior to implementation to ensure compliance.

No existing manhole covers were lifted or drainage runs inspected during the course of this ground investigation.

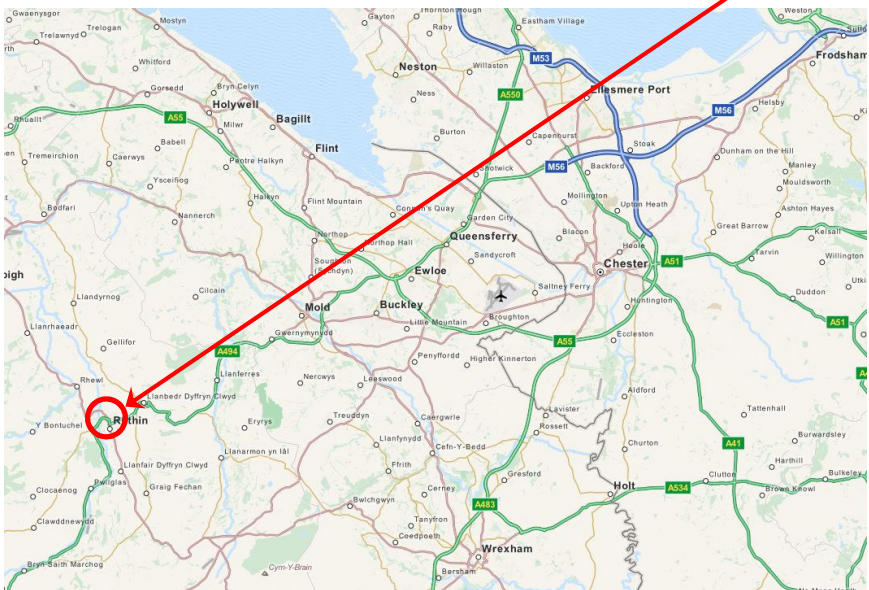
The site plans enclosed in this report should not be scaled off.

## DRAWINGS

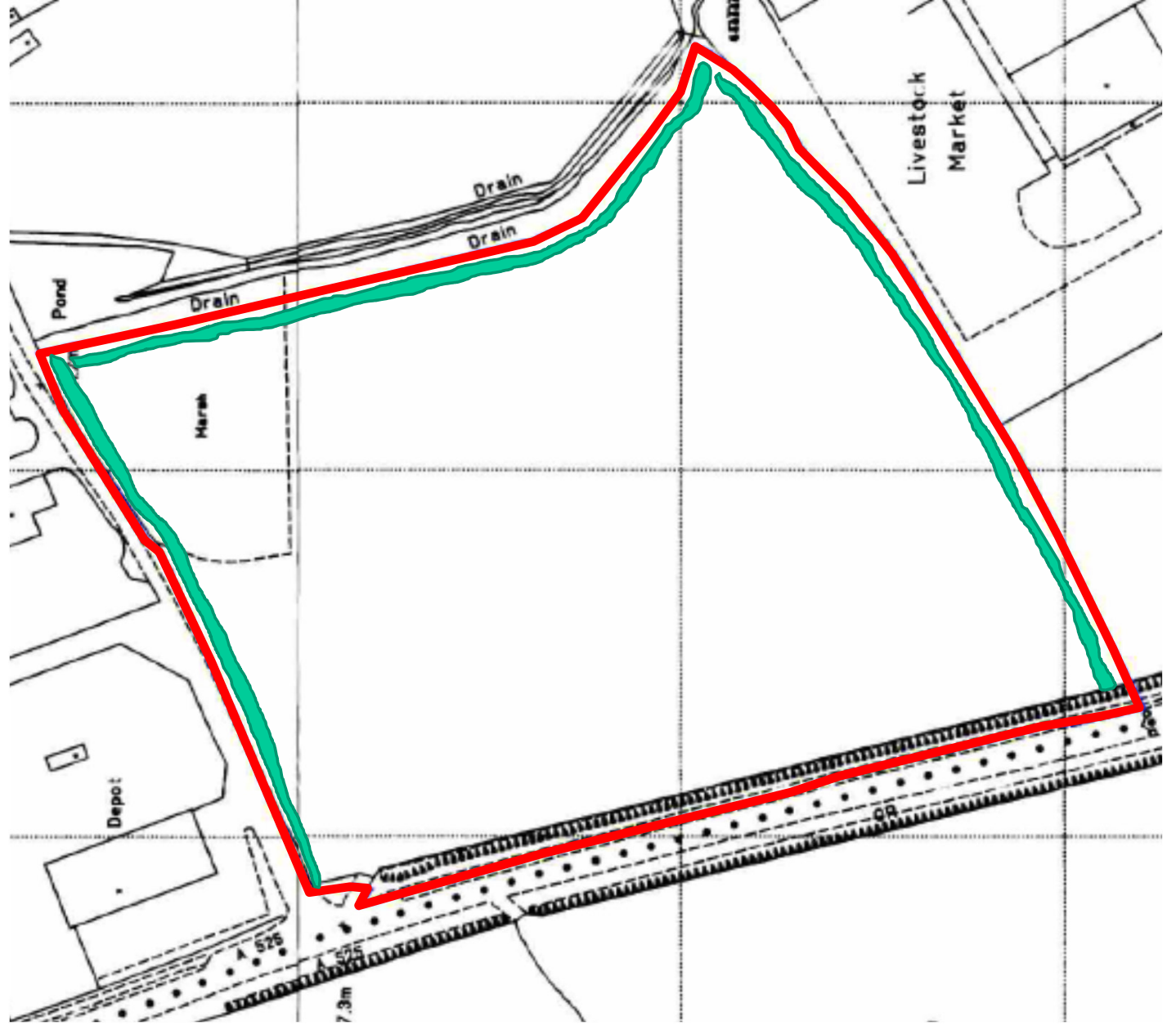




**SITE**



 <b>BROWNFIELD SOLUTIONS LTD</b> <small>GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE</small>	
<b>ALDI STORES LTD</b>	
<b>Ruthin North Link Road</b>	
<b>Site Location Plan</b>	
<b>Drawing Number C3197/01</b>	
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Drawn By: DMG	Checked By: DV



KEY:

Site Boundary

Trees and Hedges



**BROWNFIELD SOLUTIONS LTD**  
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

**ALDI STORES LTD**

Ruthin North Link Road

Pertinent Site Features Plan

Drawing No. C3197/02

Scale: NTS

Drawn By: SF

Checked By: AJH



**APPENDIX A  
HISTORICAL MAPS**

**Site Details:**

Ruthin North Link Road

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**Report Ref:** EMS-353300\_474526  
**Grid Ref:** 311399, 358924

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**Map date:** 1875-1876

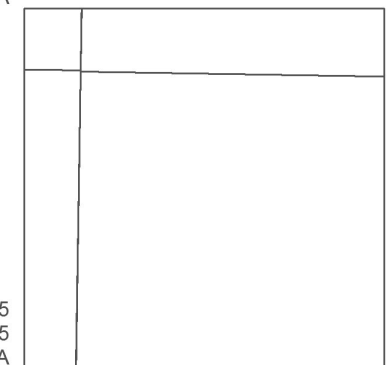
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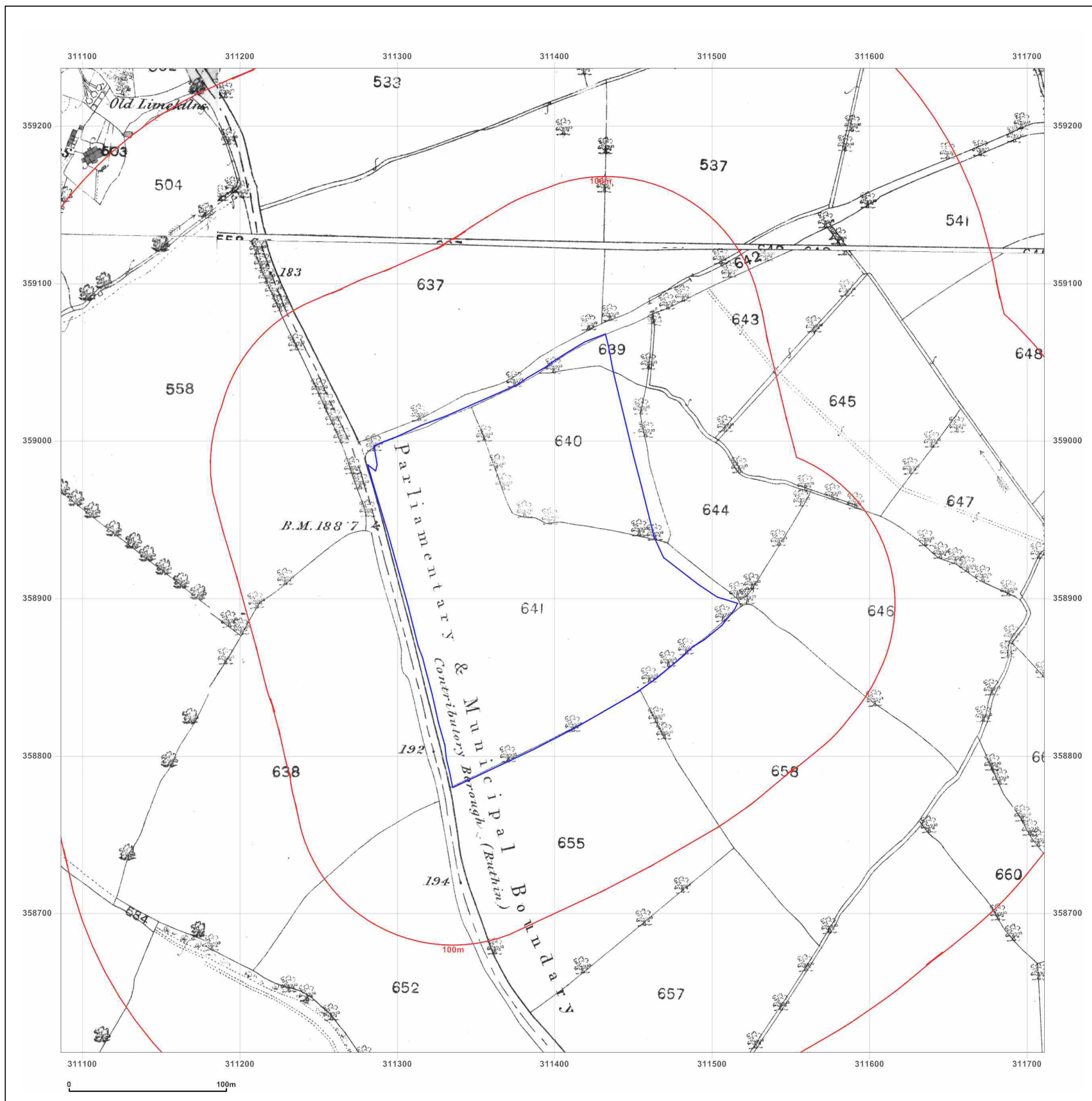


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**Site Details:**

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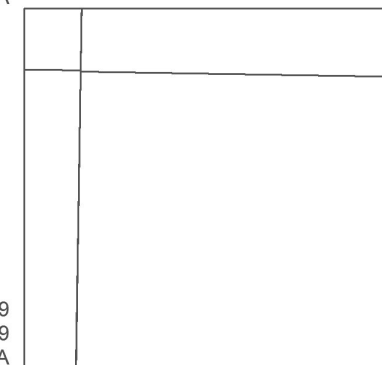


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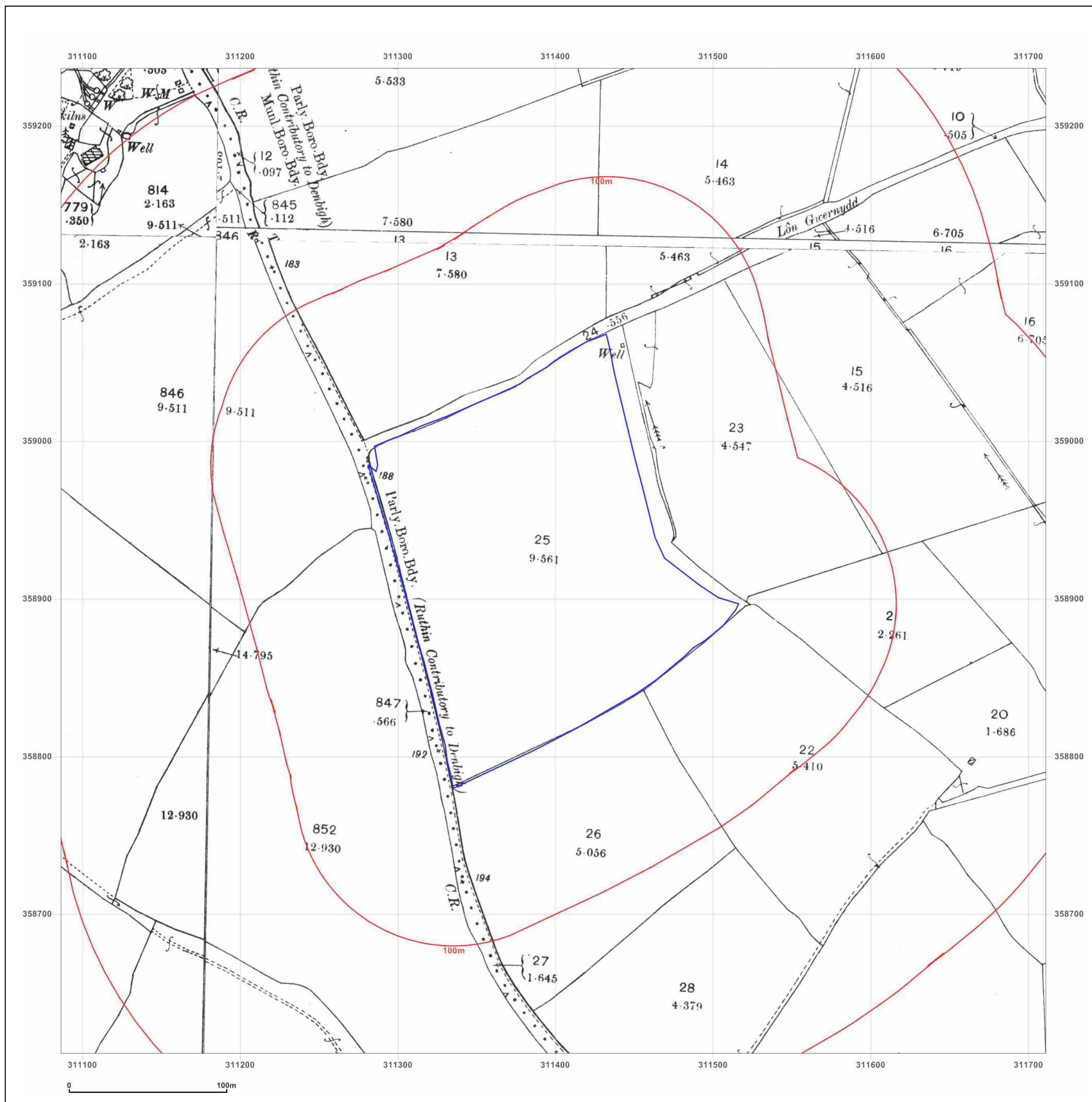


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**Site Details:**

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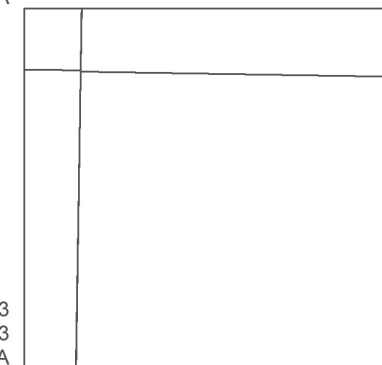
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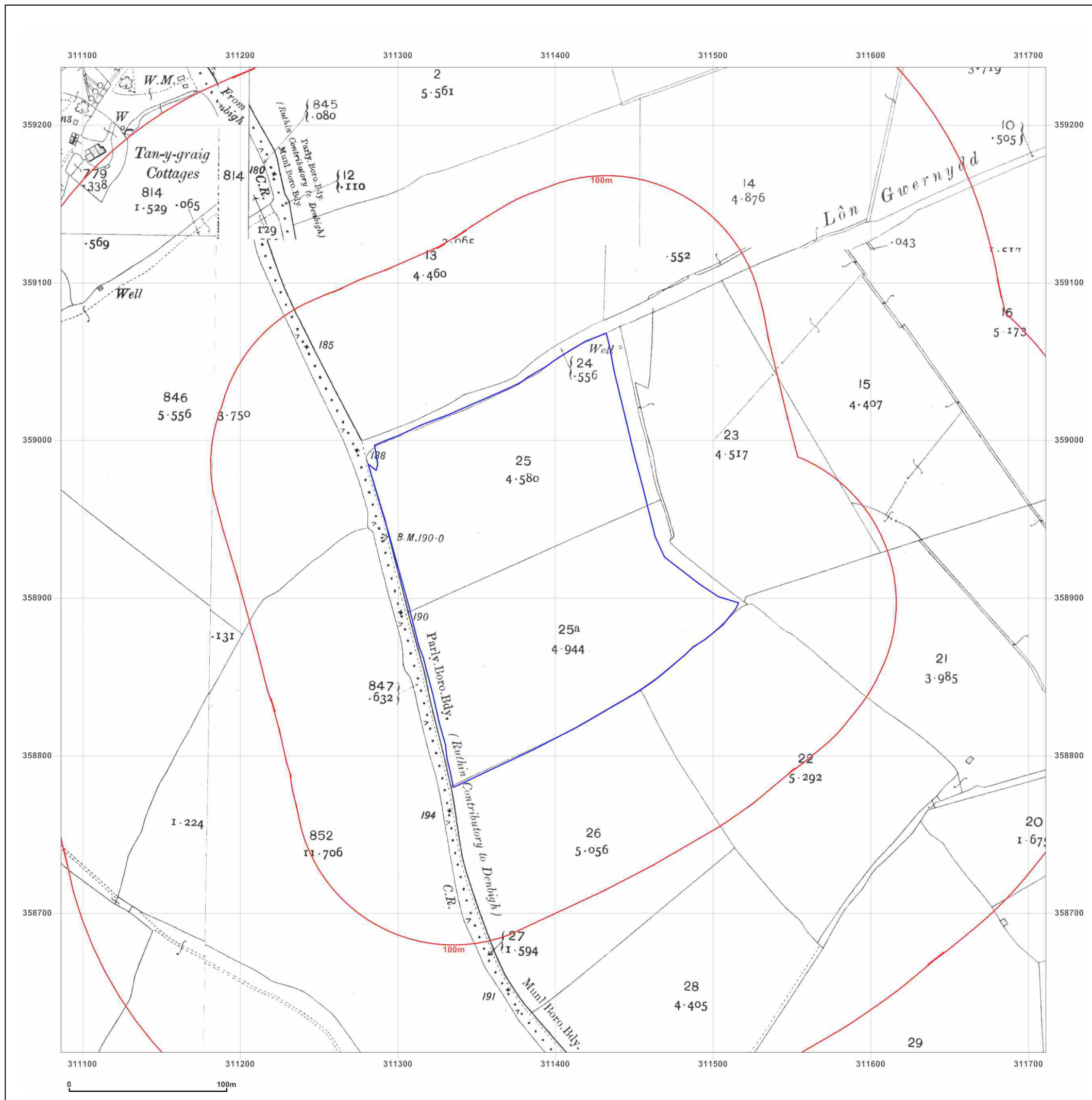
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**Site Details:**

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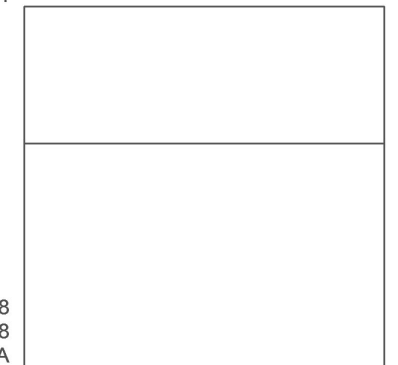
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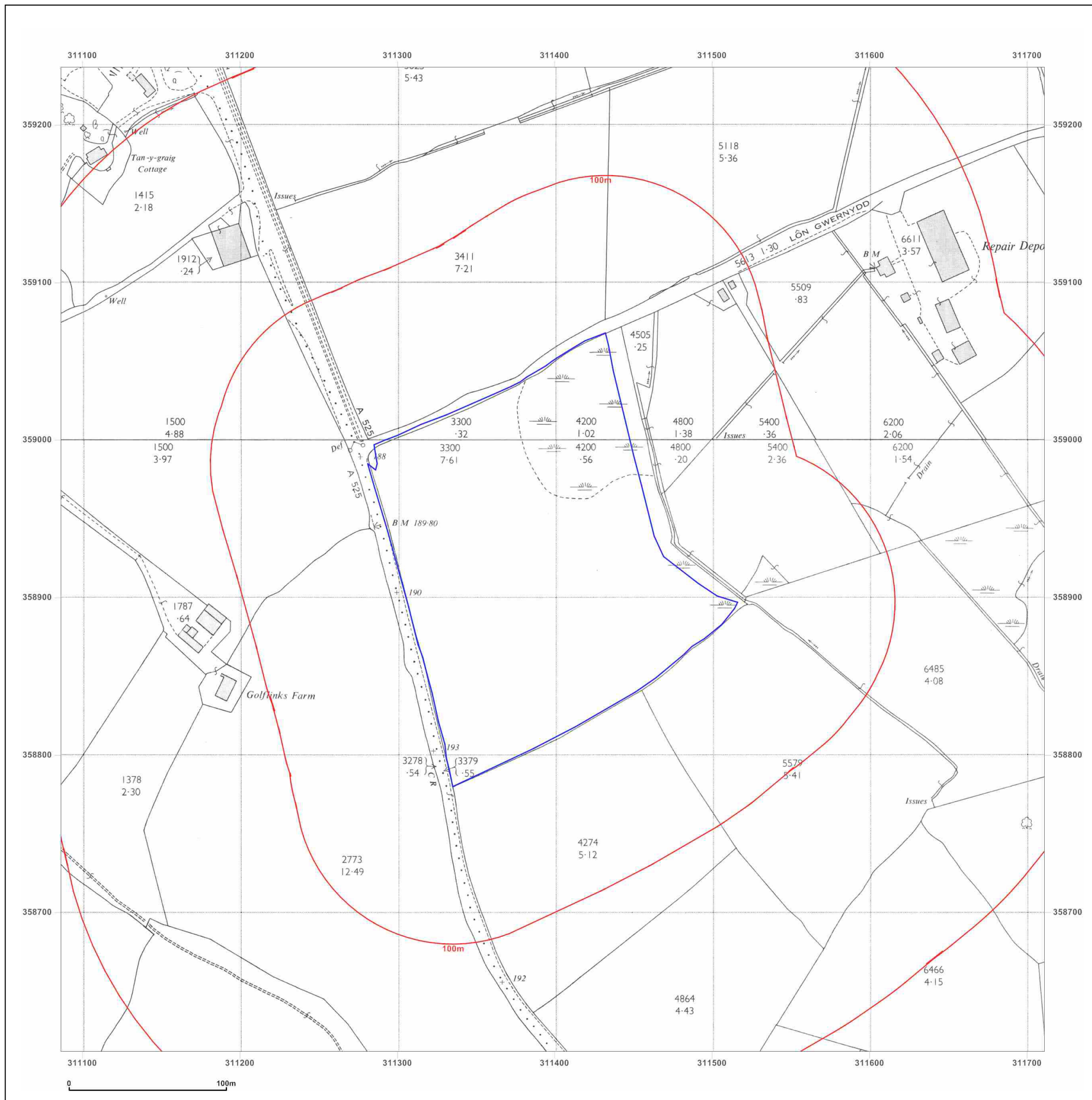
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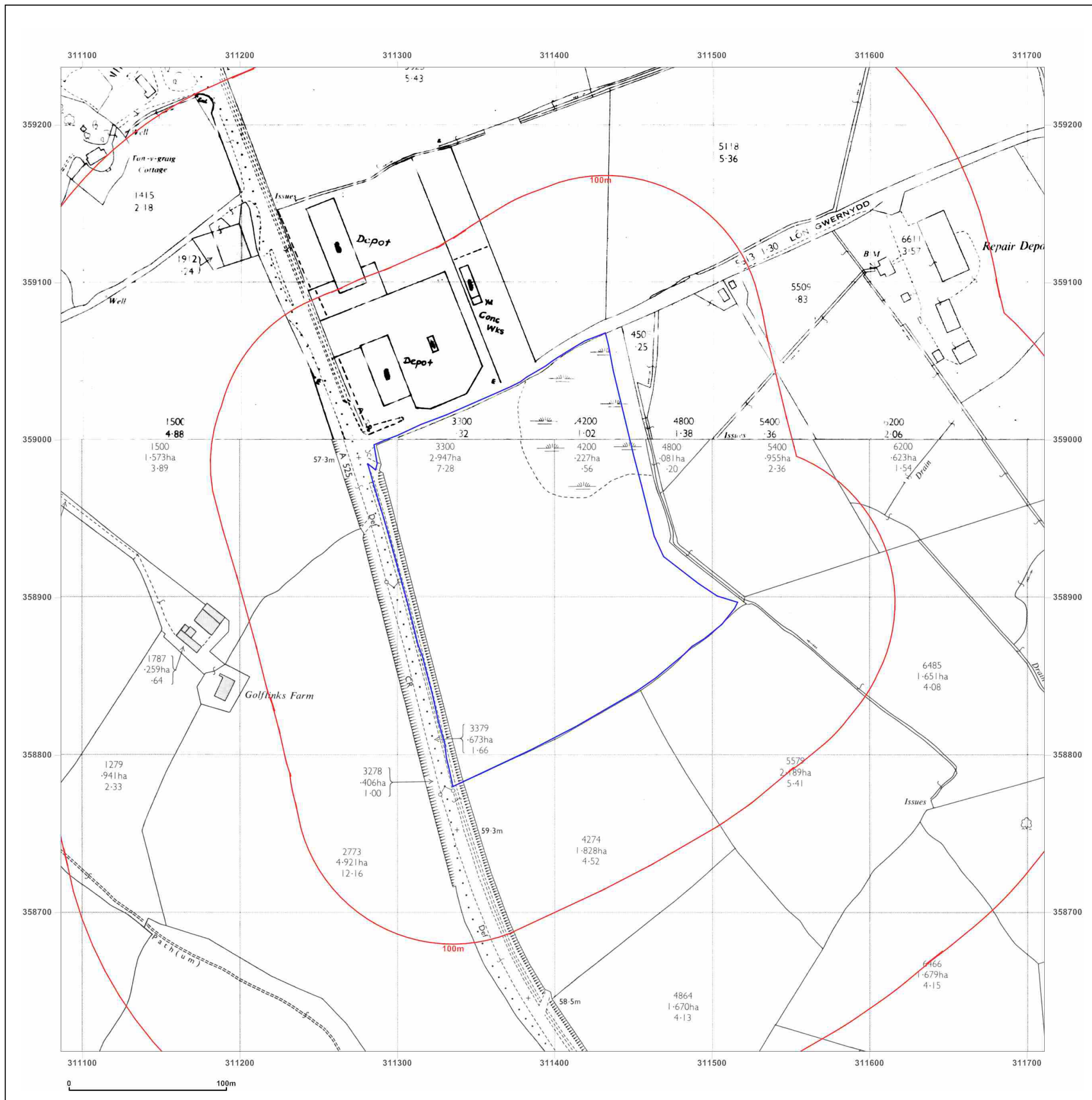


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Map date: 1986

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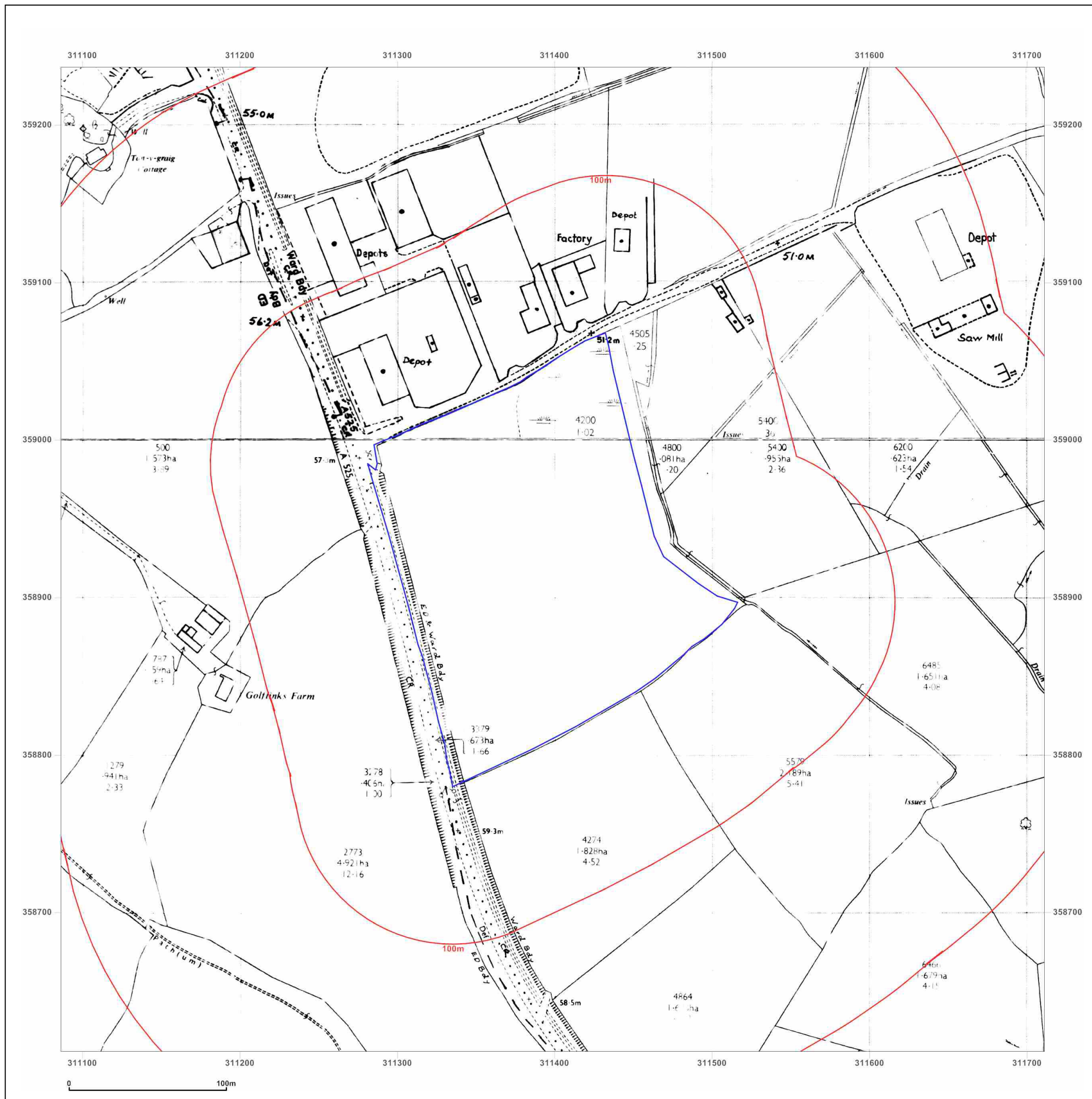


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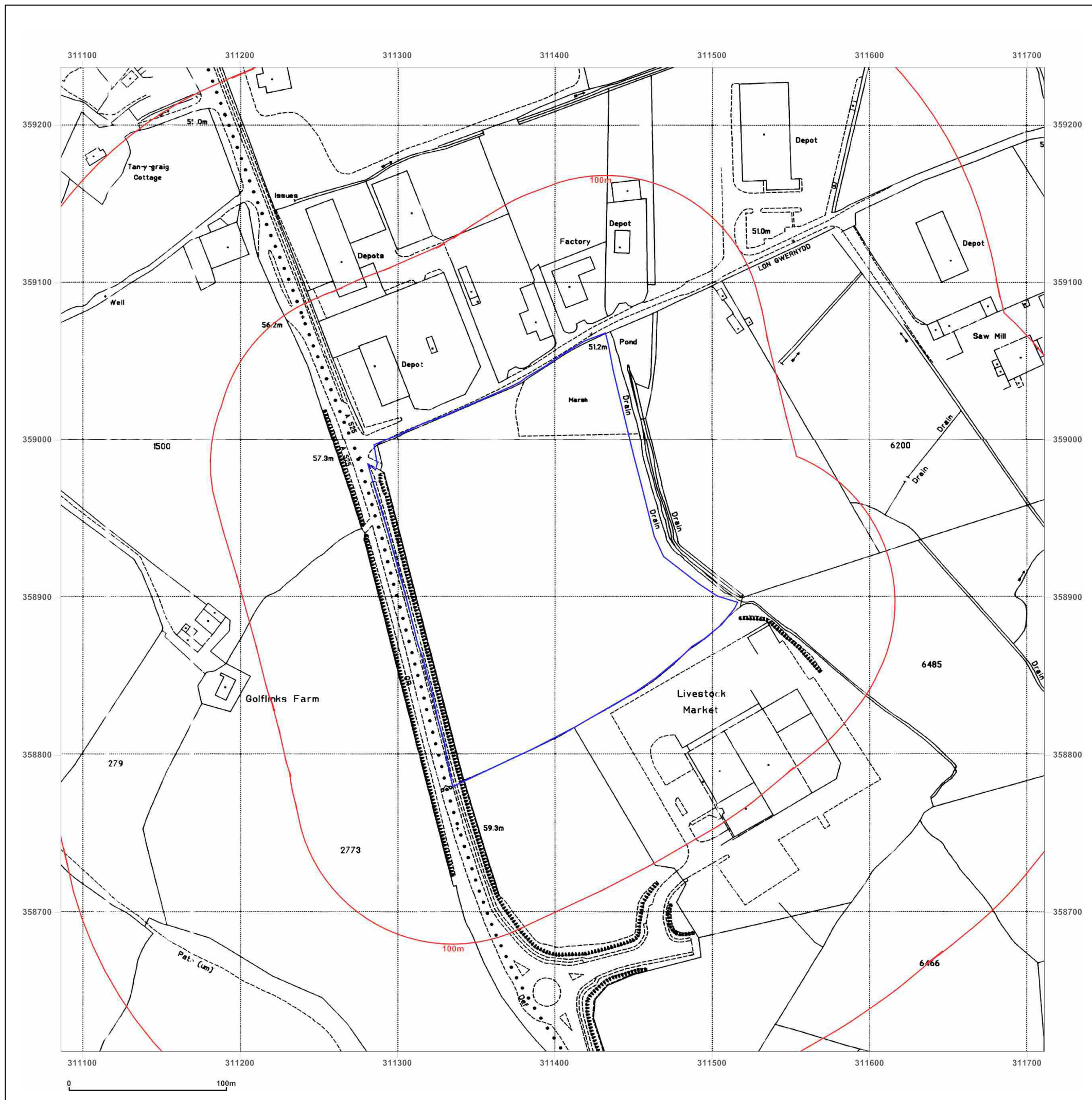


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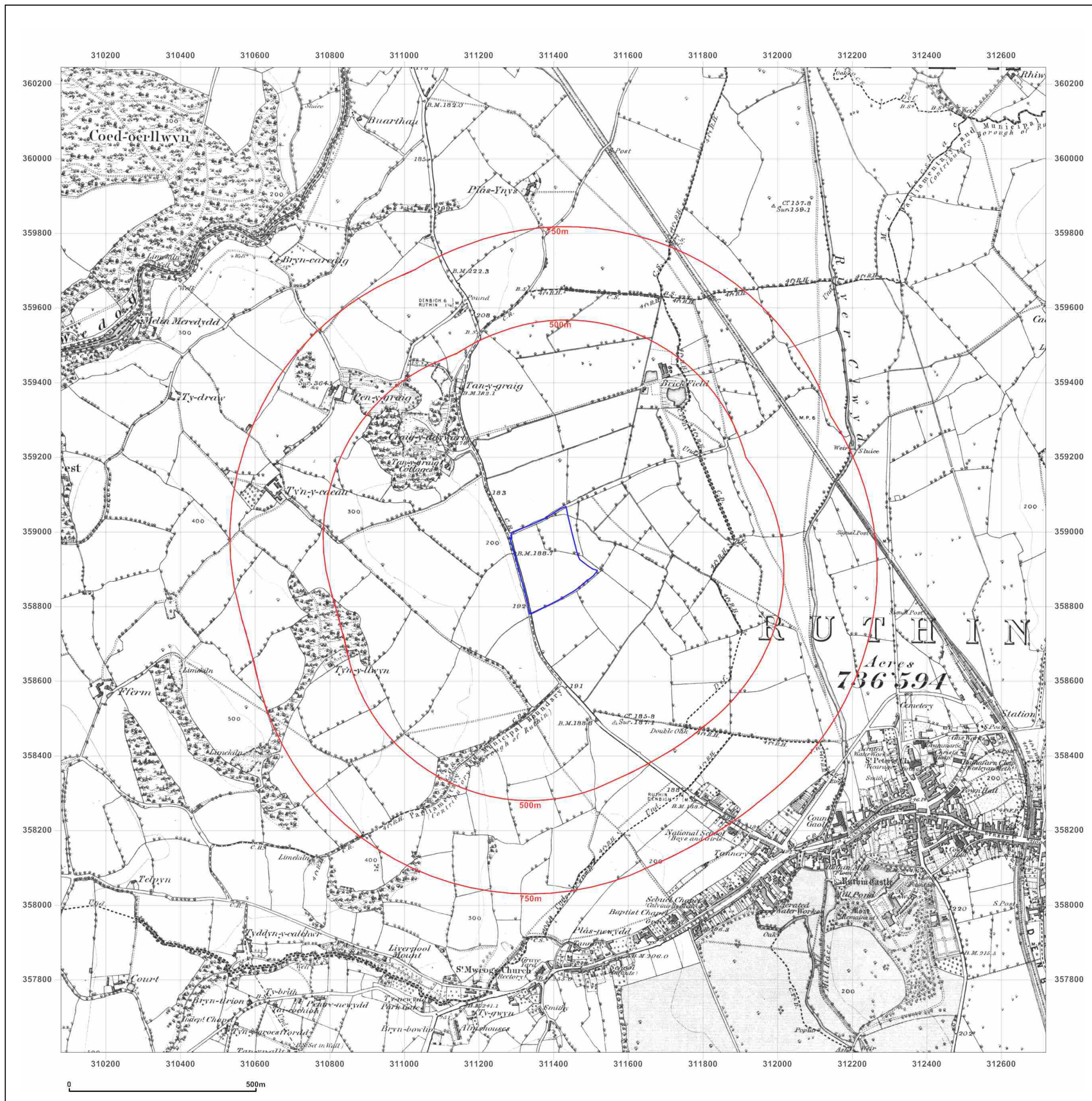


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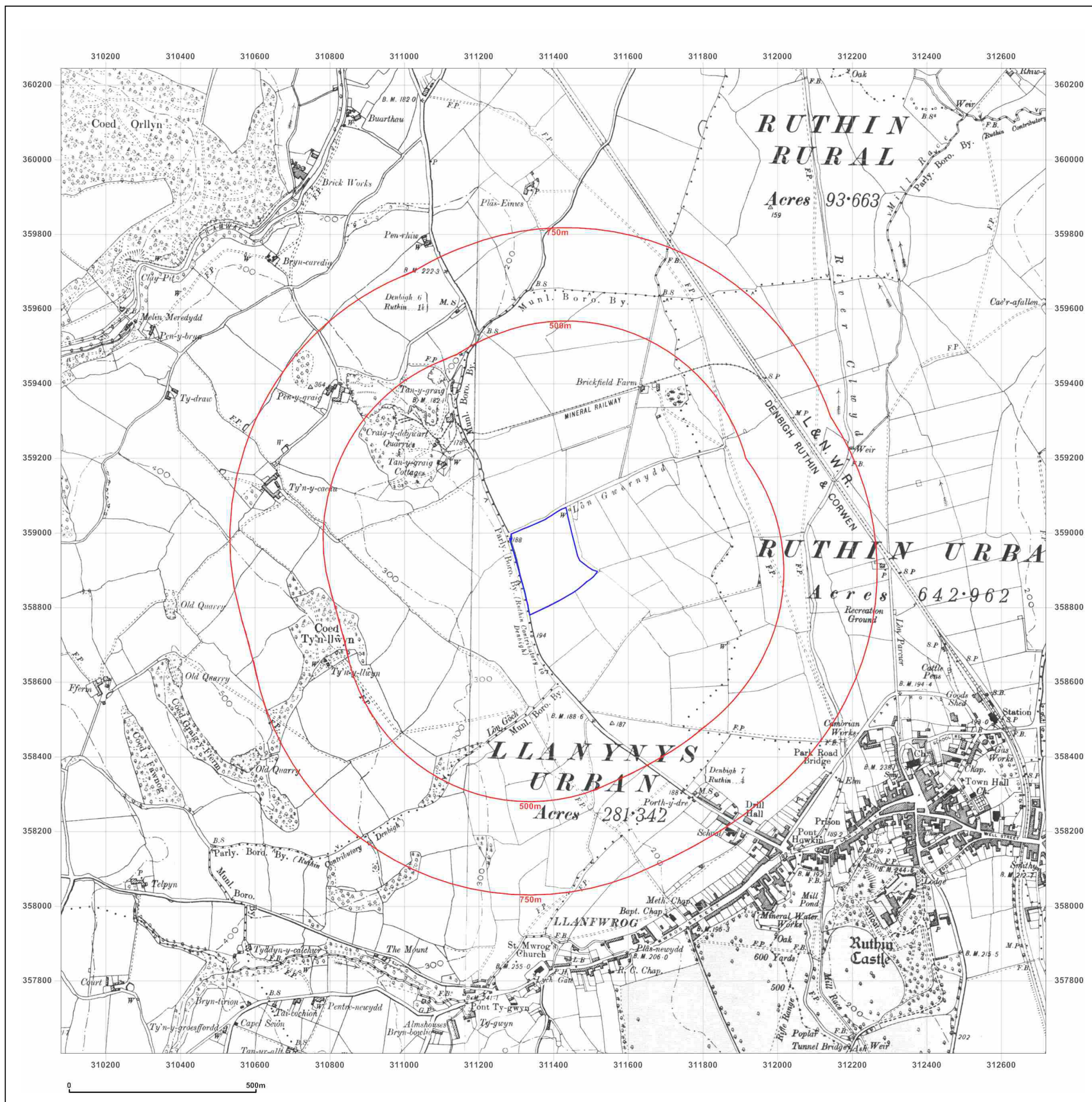


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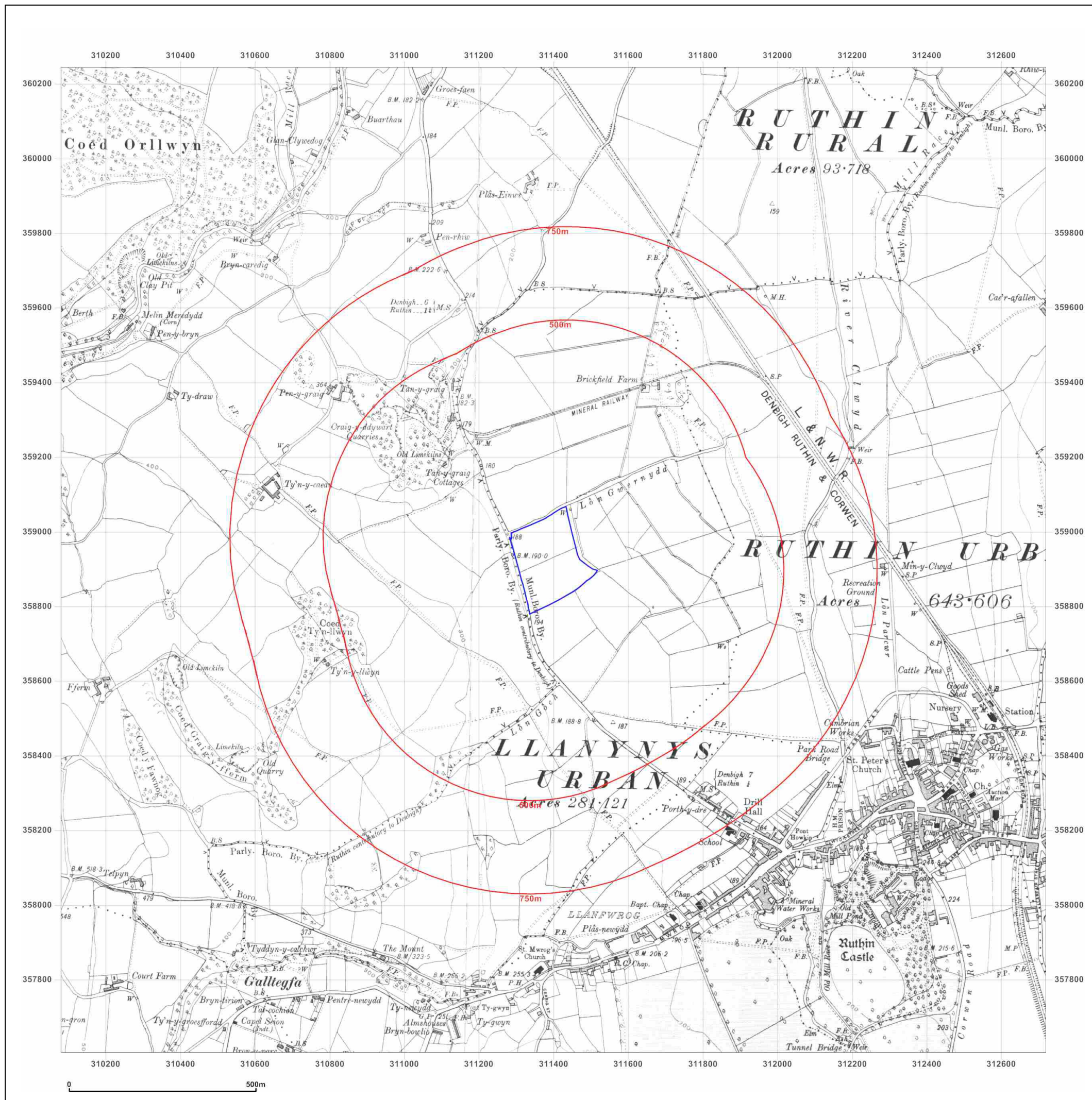


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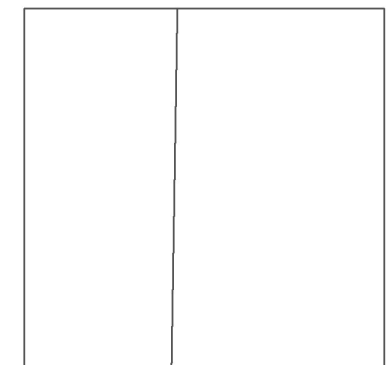
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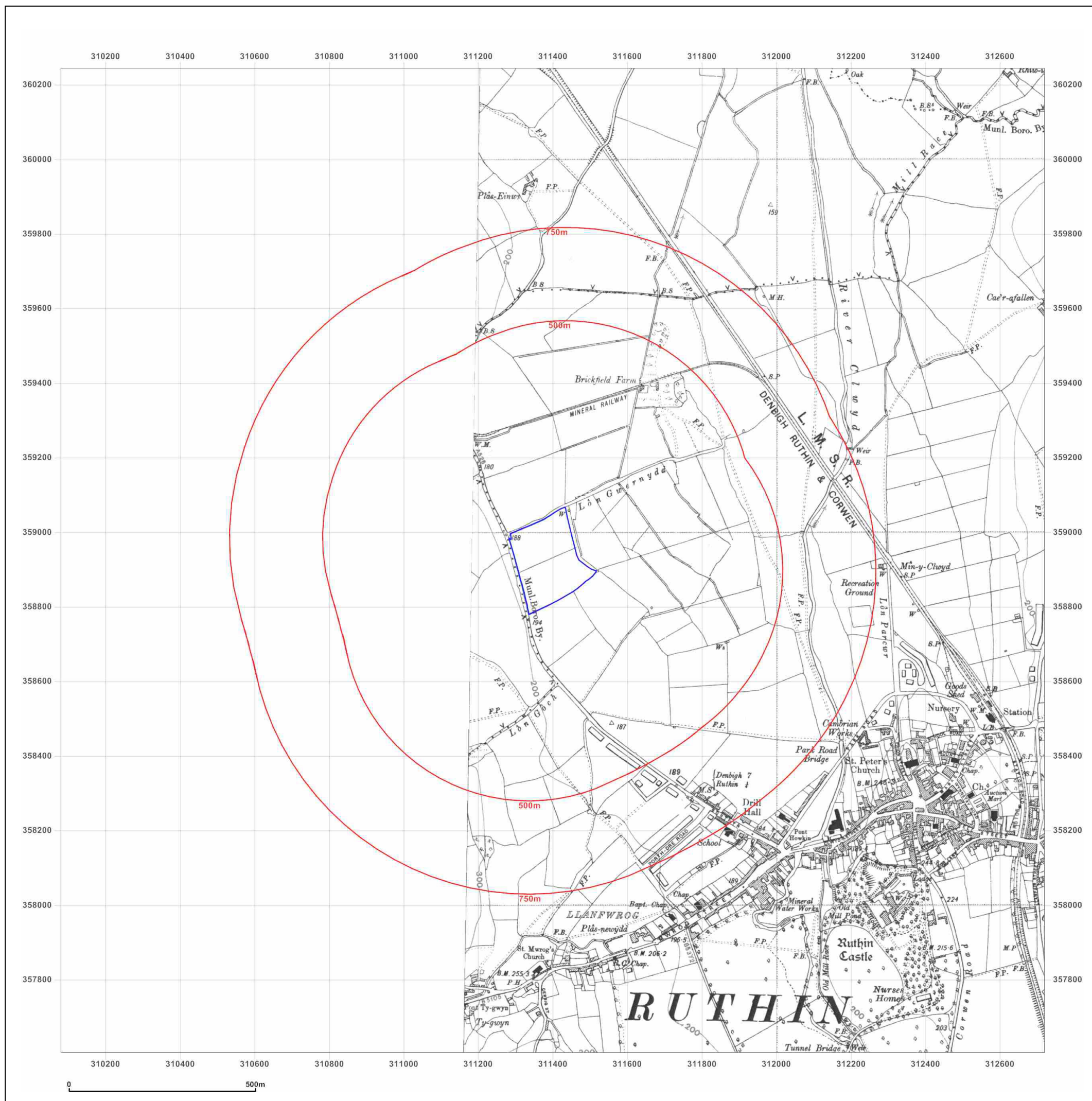


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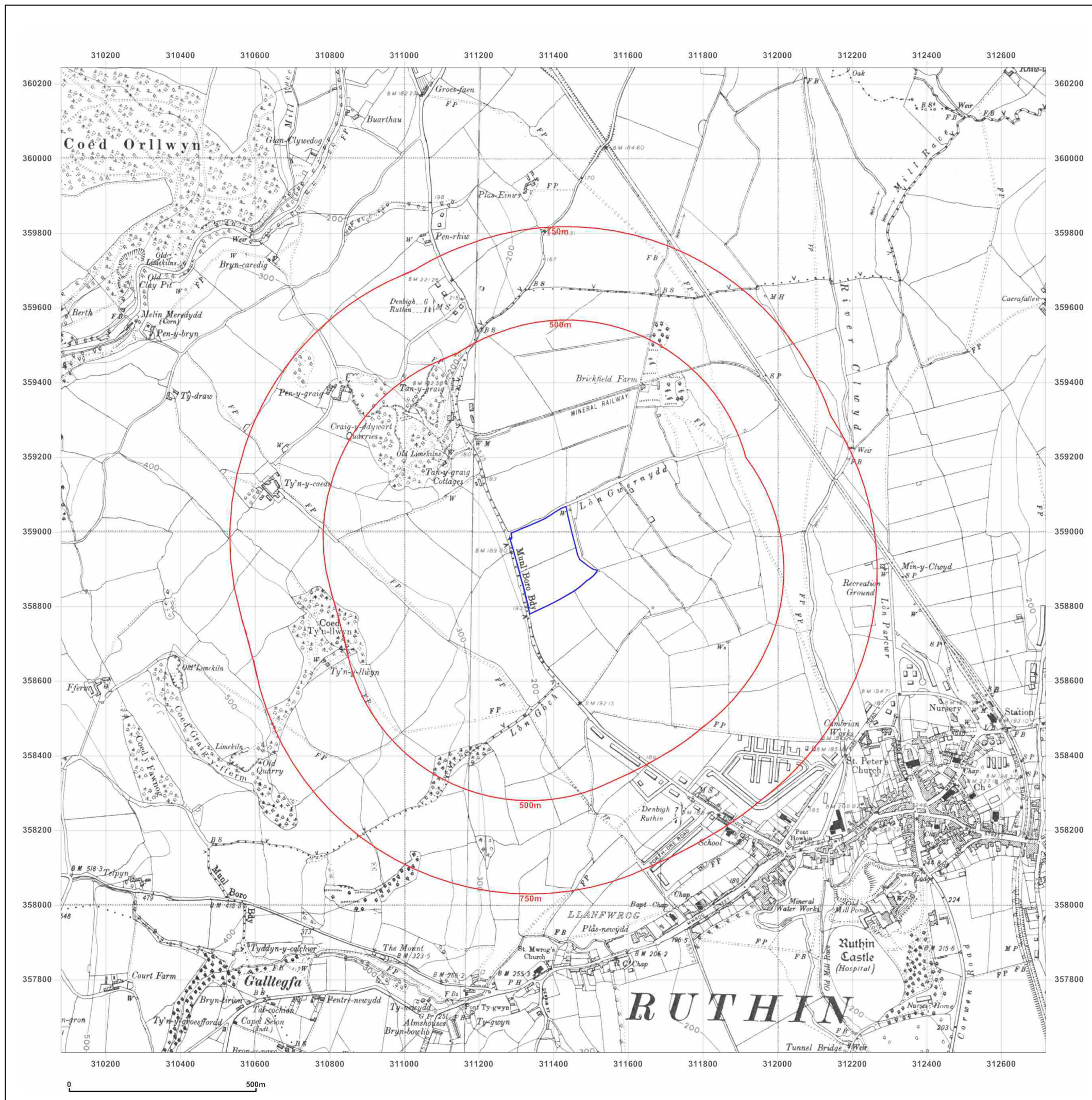


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0 500m



**Site Details:**

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**Client Ref:** EMS\_353300\_474526  
**Report Ref:** EMS-353300\_474526  
**Grid Ref:** 311399, 358924

**Map Name:** Provisional

**Map date:** 1959

**Scale:** 1:10,560

**Printed at:** 1:10,560



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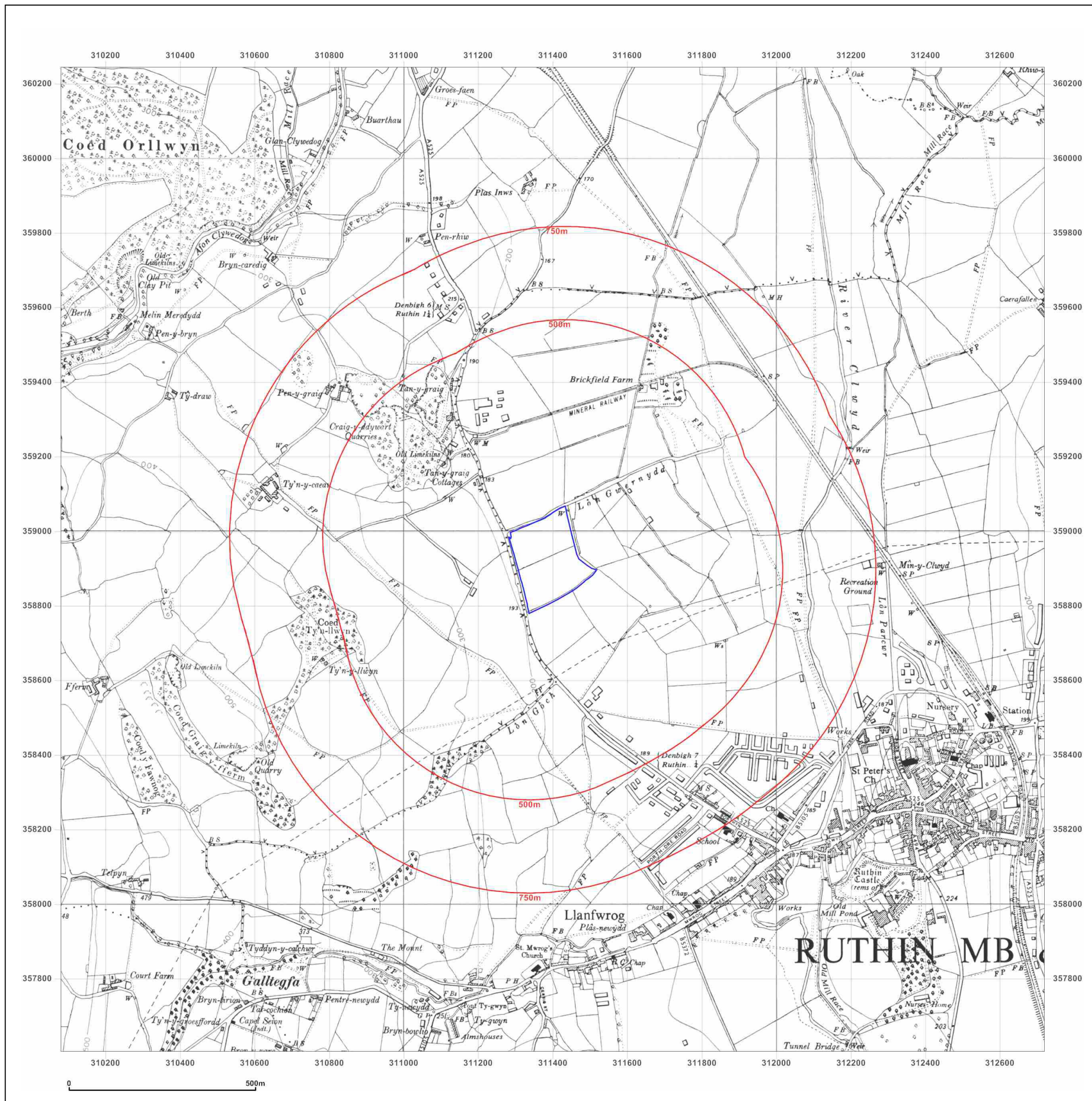


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**Site Details:**

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**Report Ref:** EMS-353300\_474526  
**Grid Ref:** 311399, 358924

**Map Name:** National Grid

**Map date:** 1971-1975

**Scale:** 1:10,000

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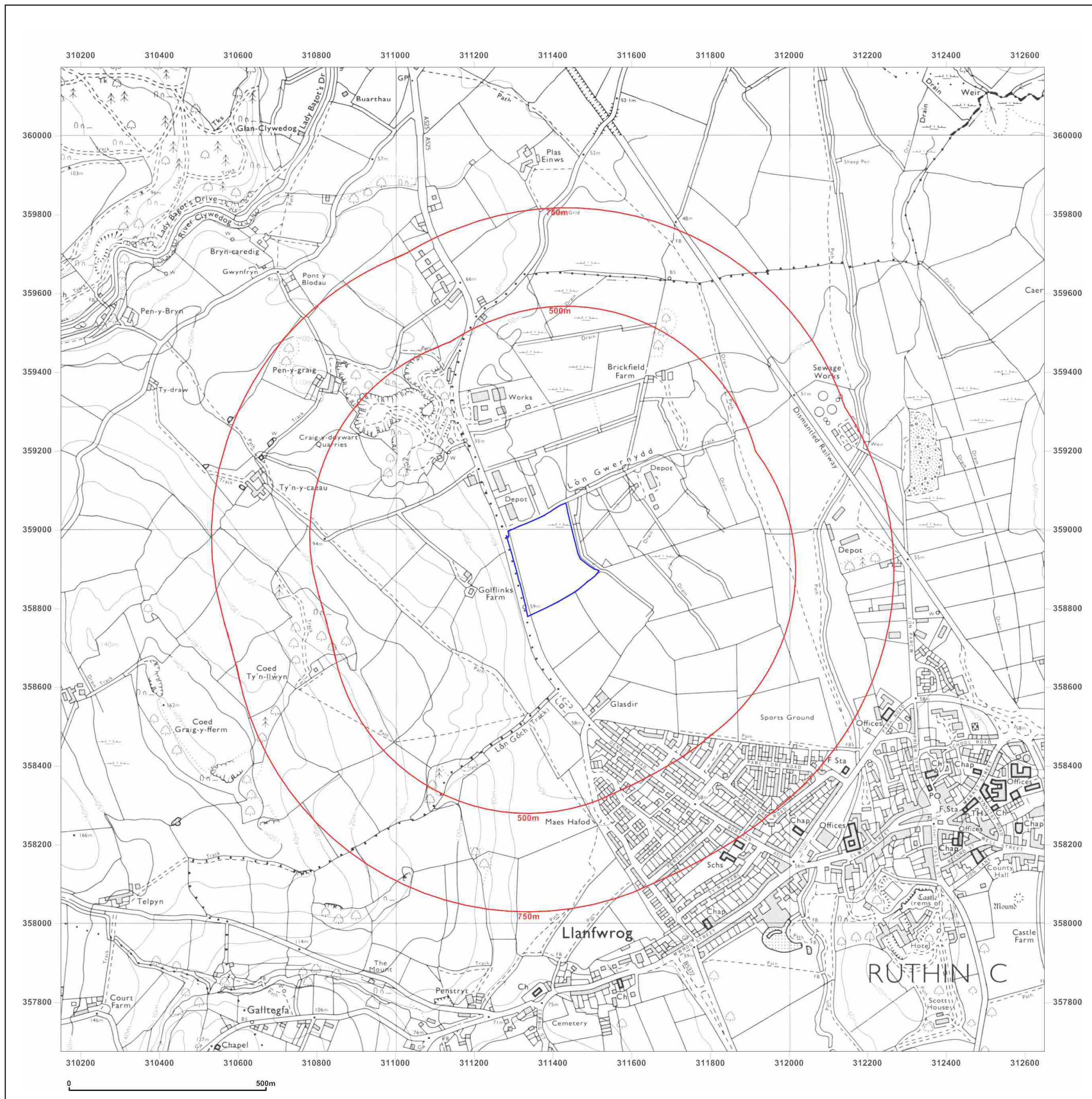


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**Site Details:**

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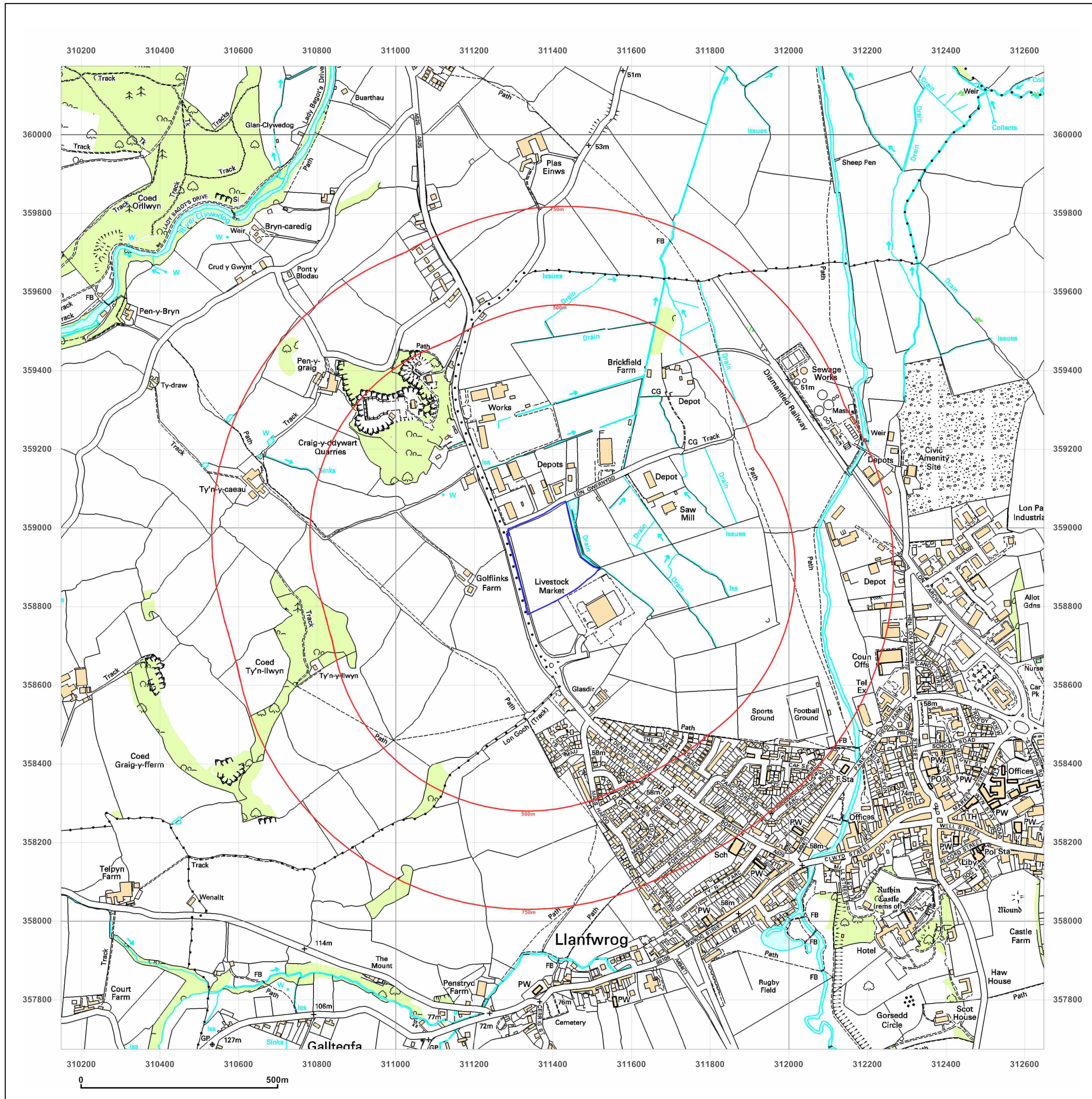
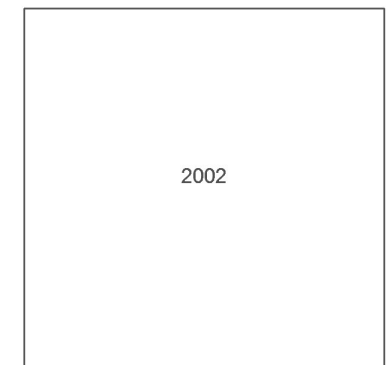
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**Grid Ref:** 311399, 358924

**Map Name:** 1:10,000 Raster

**Map date:** 2002

**Scale:** 1:10,000

**Printed at:** 1:10,000



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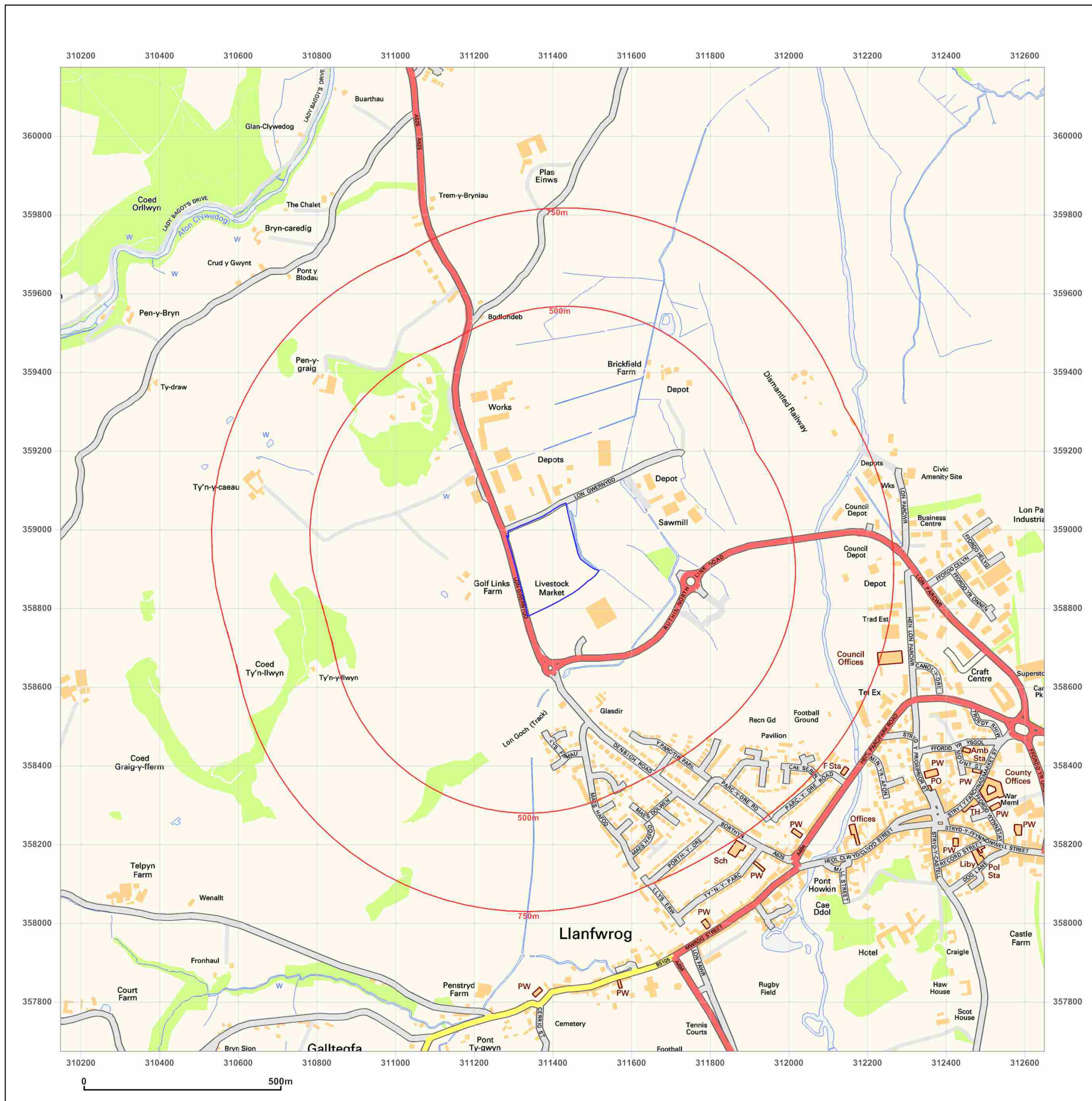
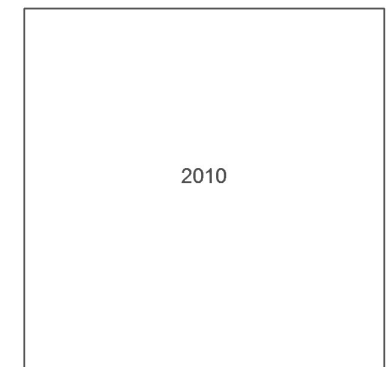
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**Report Ref:** EMS-353300\_474526  
**Grid Ref:** 311399, 358924

**Map Name:** National Grid

**Map date:** 2010

**Scale:** 1:10,000

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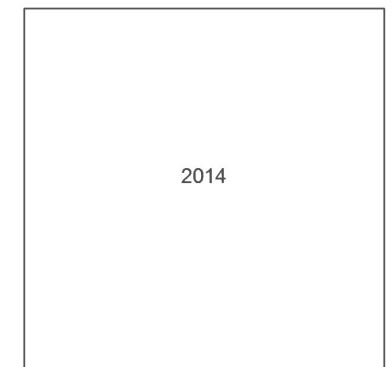
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 Report Ref: EMS-353300\_474526  
 Grid Ref: 311399, 358924

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000



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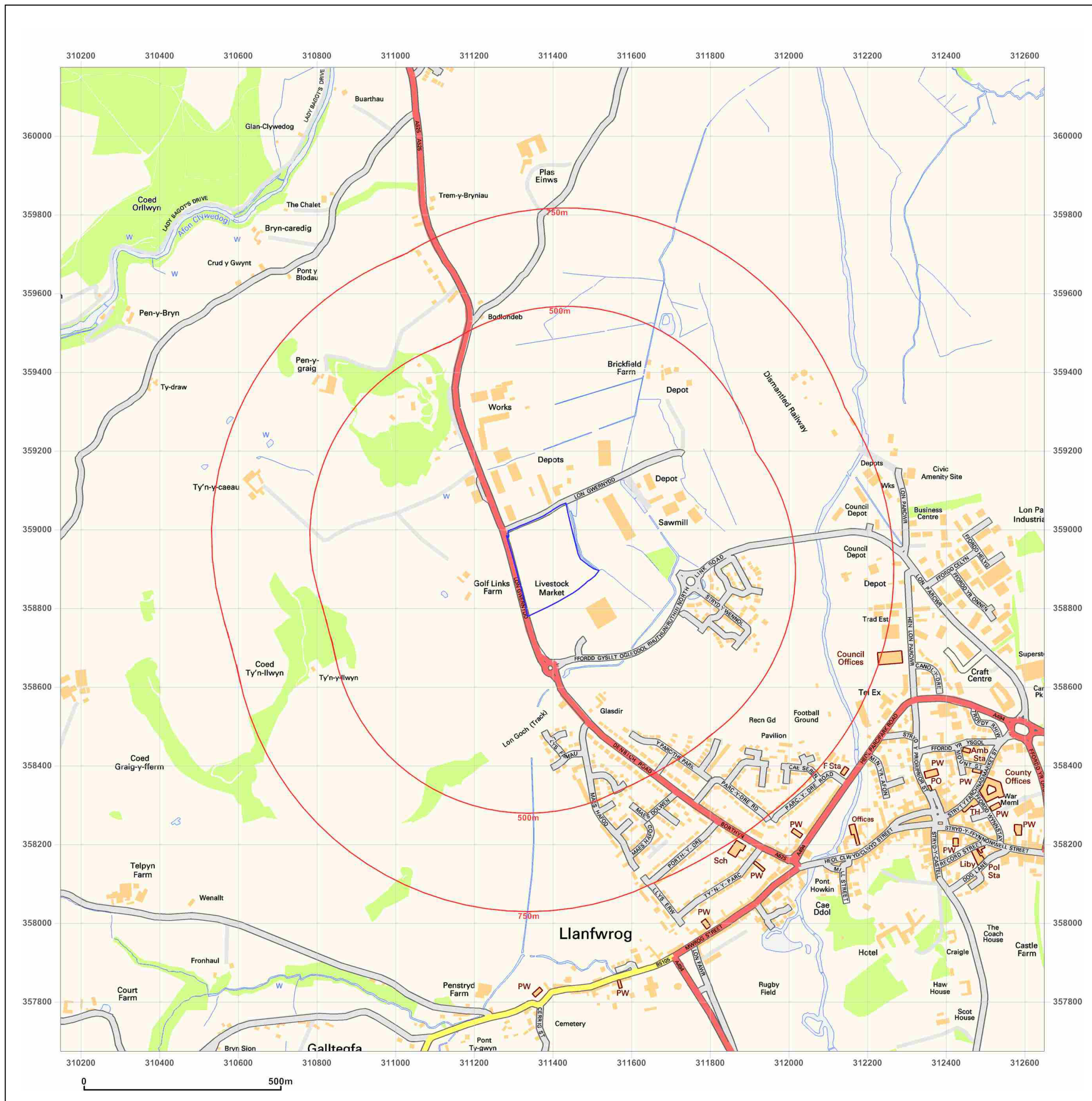


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**APPENDIX B  
Contaminated Land Officers Report**



24/03/2016

Dear Daniel.

Thank you for your request for contaminated land information at Land off Lon Gwernydd, Ruthin. Having inspected the records available to us I can respond as follows;

- Pollution incidents – There have been none to the best of our knowledge.
- Records of contamination – There are none to the best of our knowledge.
- At this time there are no intentions to enter either the property or land adjoining/adjacent onto a contaminated land register.
- To the best of our knowledge, there are no open or closed landfill sites within 250meters of the search site.

The Authority has not yet commenced its Contaminated Land Strategy Investigations therefore the above site, to date, has not been identified as 'contaminated land' although we can confirm that the area of the site could, in the future, be subject to further desk top study and/or investigations under the statutory requirements of Part IIA of the Environmental Protection Act 1990. However, please note that if the site is redeveloped then Denbighshire County Council would address any potential contamination issues through the planning regime.

If you require further information or would like to discuss any of the above, please do not hesitate to contact me on the below telephone number.

Information disclosed by the Council may be based on opinion rather than fact, it could be based on the information from a third party or it could be inferred dependent on forecasts or derived from samples. It is therefore not possible for the Council to be certain of the accuracy of the information given and the Council can accept no liability for any inaccuracy.

Regards  
Philip Caldwell

**APPENDIX C  
GroundSure Report**



EmapSite  
Masdar House, ,  
Eversley, RG27 ORP

Groundsure      EMS-353300\_474527  
Reference:

Your Reference:    EMS\_353300\_474527

Report Date      21 Mar 2016

Report Delivery    Email - pdf  
Method:

## Groundsure Enviroinsight

Address: Ruthin North Link Road,

Dear Sir/ Madam,

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

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

Yours faithfully,

emapsite customer services team

Enc.  
Groundsure Enviroinsight



# Groundsure Envirosight

Address: Ruthin North Link Road,  
Date: 21 Mar 2016  
Reference: EMS-353300\_474527  
Client: EmapSite



Aerial Photograph Capture date: 04-Jun-2013  
Grid Reference: 311386,358923  
Site Size: 3.67ha

Report Reference: EMS-353300\_474527  
Client Reference: EMS\_353300\_474527

# Contents Page

Contents Page	3
Overview of Findings	6
Using this report	10
1. Historical Land Use	11
1. Historical Industrial Sites	12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping	12
1.2 Additional Information – Historical Tank Database	13
1.3 Additional Information – Historical Energy Features Database	13
1.4 Additional Information – Historical Petrol and Fuel Site Database	13
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	13
1.6 Potentially Infilled Land	13
2. Environmental Permits, Incidents and Registers Map	15
2. Environmental Permits, Incidents and Registers	16
2.1 Industrial Sites Holding Licences and/or Authorisations	16
2.1.1 Records of historic IPC Authorisations within 500m of the study site	16
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site	16
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site	16
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site	16
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site	16
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site	17
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	17
2.1.8 Records of Licensed Discharge Consents within 500m of the study site	18
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site	18
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	19
2.2 Dangerous or Hazardous Sites	19
2.3 Environment Agency Recorded Pollution Incidents	19
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site	19
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site	20
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	20
3. Landfill and Other Waste Sites Map	21
3. Landfill and Other Waste Sites	22
3.1 Landfill Sites	22
3.1.1 Records from Environment Agency landfill data within 1000m of the study site	22
3.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site	22
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site	22
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site	23
3.2 Other Waste Sites	23
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site	23
3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site	24
4. Current Land Use Map	26
4. Current Land Uses	27
4.1 Current Industrial Data	27
4.2 Petrol and Fuel Sites	28
4.3 National Grid High Voltage Underground Electricity Transmission Cables	28
4.4 National Grid High Pressure Gas Transmission Pipelines	28
5. Geology	29
5.1 Artificial Ground and Made Ground	29



- 5.2 Superficial Ground and Drift Geology ..... 29
- 5.3 Bedrock and Solid Geology ..... 29
- 6 Hydrogeology and Hydrology ..... 30
- 6a. Aquifer Within Superficial Geology ..... 30
- 6b. Aquifer Within Bedrock Geology and Abstraction Licenses ..... 31
- 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses ..... 32
- 6d. Hydrogeology – Source Protection Zones within confined aquifer ..... 33
- 6e. Hydrology – Detailed River Network and River Quality ..... 34
- 6.Hydrogeology and Hydrology ..... 35
- 6.1 Aquifer within Superficial Deposits..... 35
- 6.2 Aquifer within Bedrock Deposits..... 35
- 6.3 Groundwater Abstraction Licences..... 36
- 6.4 Surface Water Abstraction Licences..... 36
- 6.5 Potable Water Abstraction Licences..... 37
- 6.6 Source Protection Zones..... 37
- 6.7 Source Protection Zones within Confined Aquifer..... 37
- 6.8 Groundwater Vulnerability and Soil Leaching Potential..... 38
- 6.9 River Quality..... 38
- 6.9.1 Biological Quality:..... 38
- 6.9.2 Chemical Quality:..... 39
- 6.10 Detailed River Network..... 39
- 6.11 Surface Water Features..... 41
- 7a. Environment Agency Flood Map for Planning (from rivers and the sea) ..... 42
- 7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map ..... 43
- 7 Flooding ..... 44
- 7.1 River and Coastal Zone 2 Flooding..... 44
- 7.2 River and Coastal Zone 3 Flooding..... 45
- 7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating..... 46
- 7.4 Flood Defences..... 46
- 7.5 Areas benefiting from Flood Defences..... 46
- 7.6 Areas benefiting from Flood Storage..... 46
- 7.7 Groundwater Flooding Susceptibility Areas..... 46
- 7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes..... 46
- 7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?..... 46
- 7.8 Groundwater Flooding Confidence Areas..... 47
- 8. Designated Environmentally Sensitive Sites Map ..... 48
- 8. Designated Environmentally Sensitive Sites ..... 49
- 8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:..... 49
- 8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:..... 49
- 8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:..... 49
- 8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:..... 49
- 8.5 Records of Ramsar sites within 2000m of the study site:..... 49
- 8.6 Records of Ancient Woodland within 2000m of the study site: ..... 50
- 8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:..... 55
- 8.8 Records of World Heritage Sites within 2000m of the study site:..... 55
- 8.9 Records of Environmentally Sensitive Areas within 2000m of the study site: ..... 55
- 8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: ..... 55
- 8.11 Records of National Parks (NP) within 2000m of the study site: ..... 56
- 8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:..... 56
- 8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:..... 56





8.14 Records of Green Belt land within 2000m of the study site:.....	56
9. Natural Hazards Findings.....	57
9.1 Detailed BGS GeoSure Data.....	57
9.1.1 Shrink Swell.....	57
9.1.2 Landslides.....	57
9.1.3 Soluble Rocks.....	57
9.1.4 Compressible Ground.....	58
9.1.5 Collapsible Rocks.....	58
9.1.6 Running Sand.....	58
9.2 Radon.....	58
9.2.1 Radon Affected Areas.....	58
9.2.2 Radon Protection.....	59
10. Mining.....	60
10.1 Coal Mining.....	60
10.2 Non-Coal Mining.....	60
10.3 Brine Affected Areas .....	60
Contact Details.....	61
Standard Terms and Conditions.....	63

# Overview of Findings

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

<b>Section 1: Historical Industrial Sites</b>	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	2	6	21
1.2 Additional Information – Historical Tank Database	0	0	0	0
1.3 Additional Information – Historical Energy Features Database	0	0	0	0
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	0
1.6 Potentially Infilled Land	0	0	0	11

<b>Section 2: Environmental Permits, Incidents and Registers</b>	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	3	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	1	5
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	1	0	0
2.2 Records of COMAH and NIHHS sites	0	0	1	0
2.3 Environment Agency Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	1	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
<b>3.1 Landfill Sites</b>						
3.1.1 Environment Agency Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency Historic Landfill Sites	0	0	0	0	2	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	2	0
<b>3.2 Landfill and Other Waste Sites Findings</b>						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	1	Not searched	Not searched
3.2.2 Environment Agency Licensed Waste Sites	0	0	0	0	10	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	15	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	1
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 Are there any records of Artificial Ground and Made Ground present beneath the study site?	Yes
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
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 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes					
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes					
	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	1	0	1	1
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	3
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	1
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)	3	0	0	1	Not searched	Not searched
	On-site	0-50m	51-250	251-500	501-1000	1000-1500

## Section 6: Hydrogeology and Hydrology

0-500m

6.9 Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	Yes	Yes
6.10 Detailed River Network entries within 500m of the site	1	3	10	10	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	Yes	Yes	Not searched	Not searched	Not searched

## Section 7: Flooding

7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	Yes
7.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site	Yes
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	Yes
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low

## Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	6	21	93
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
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0

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

Section 9: Natural Hazards	
9.1 What is the maximum risk of natural ground subsidence?	High
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Very Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	High
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining	
10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No



# Using this report

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

## 1. Historical Industrial Sites

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

## 2. Environmental Permits, Incidents and Registers

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

## 3. Landfills and Other Waste Sites

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

## 4. Current Land Uses

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

## 5. Geology

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

## 6. Hydrogeology and Hydrology

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

## 7. Flooding

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

## 8. Designated Environmentally Sensitive Sites

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

## 9. Natural Hazards

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

## 10. Mining

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

## 11. Contacts

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

### Note: Maps

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

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

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

# 1. Historical Land Use



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# 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: 29

ID	Distance [m]	Direction	Use	Date
1A	9	N	Unspecified Depot	1974
2A	9	N	Unspecified Depot	1992
3	85	NW	Unspecified Depots	1992
4B	167	NE	Unspecified Depot	1992
5B	167	NE	Unspecified Depot	1974
6	209	E	Sawmill	1992
7	244	N	Mineral Railway Sidings	1959
8	247	N	Mineral Railway Sidings	1938
9	251	NW	Mineral Railway Sidings	1949
10C	253	N	Unspecified Works	1974
11C	253	N	Unspecified Works	1992
12D	258	NW	Old Lime Kilns	1949
13D	268	NW	Old Lime Kilns	1914
14D	268	NW	Old Lime Kilns	1959
15H	269	NW	Unspecified Quarries	1914
16E	271	NW	Railway Sidings	1914
17D	271	NW	Old Lime Kilns	1949
18E	272	NW	Railway Sidings	1949
19E	278	NW	Railway Sidings	1899
20F	307	NW	Unspecified Quarries	1899
21F	309	NW	Unspecified Quarries	1974
22F	309	NW	Unspecified Quarries	1992
23I	314	NW	Unspecified Quarry	1874
24F	321	NW	Unspecified Quarries	1959
25F	334	NW	Unspecified Quarries	1874
26F	350	NW	Unspecified Quarries	1949
27G	381	NE	Brick Field	1874
28	415	NE	Railway Sidings	1874
29G	453	NE	Unspecified Tanks	1874

## 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: 0

Database searched and no data found.

## 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: 0

Database searched and no data found.

## 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: 1

ID	Distance (m)	Direction	Use	Date
30B	159	NE	Repair Depot	1968

## 1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 11

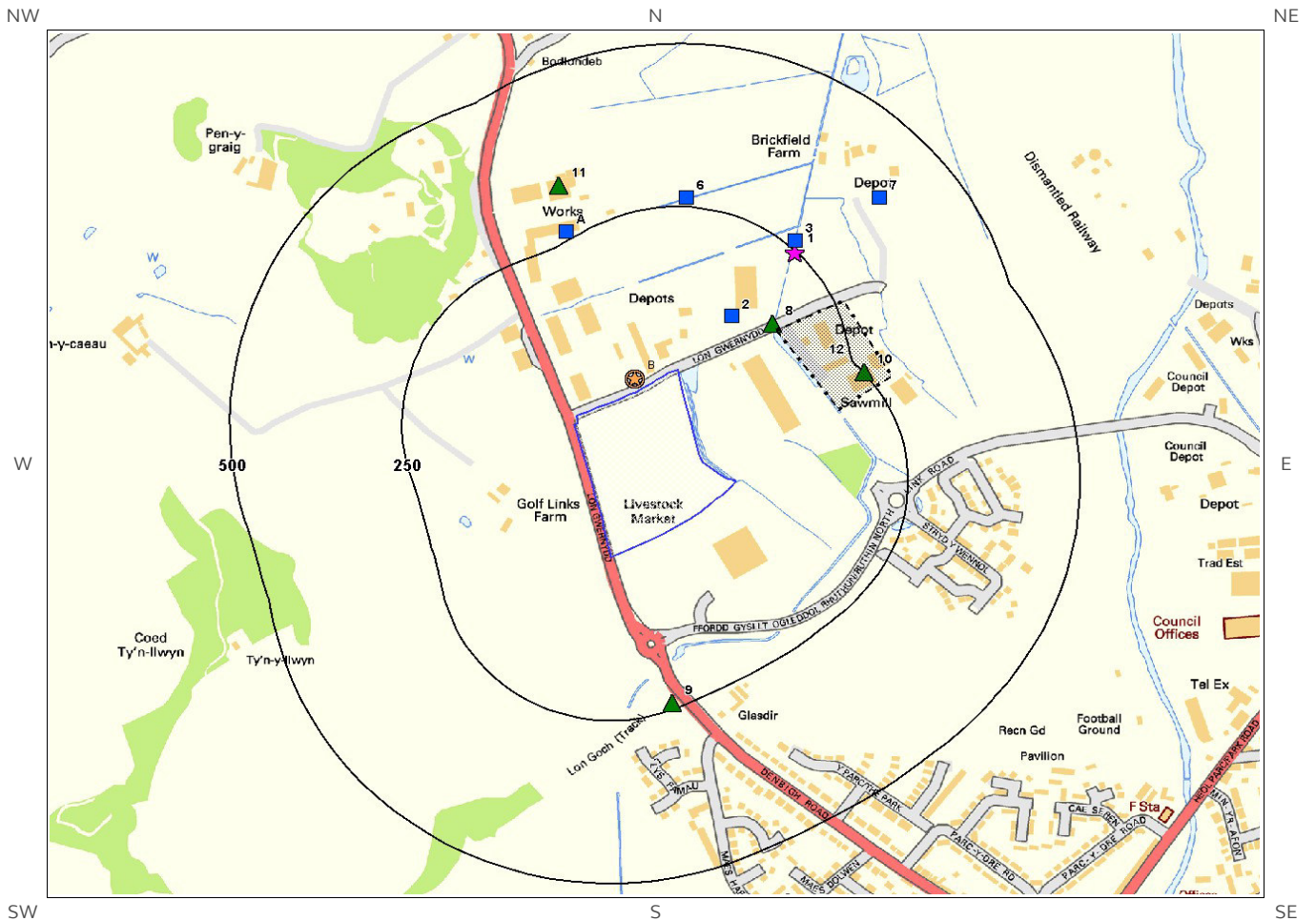
The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:


















ID	Distance(m)	Direction	Use	Date
31H	269	NW	Unspecified Quarries	1914
32F	307	NW	Unspecified Quarries	1899
33F	309	NW	Unspecified Quarries	1974
34F	309	NW	Unspecified Quarries	1992
35I	314	NW	Unspecified Quarry	1874
36F	321	NW	Unspecified Quarries	1959
37F	334	NW	Unspecified Quarries	1874
38F	350	NW	Unspecified Quarries	1949
39G	381	NE	Brick Field	1874
40	391	NE	Pond	1874
41	394	NE	Pond	1874



# 2. Environmental Permits, Incidents and Registers Map



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

4

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
8	154	NE	311570 359136	Address: Huw Howatson Ltd, Cae Bricks, Brickfield Lane, Denbigh Road, Ruthin, Denbighshire, LL15 2TN Process: Waste oil burner. Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
9	243	S	311424 358554	Address: Dyffryn Service Station, Denbigh Road, Ruthin, Denbighshire, LL15 1PE Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
10	249	NE	311703 359062	Address: Clifford Jones Timber Ltd, Brickfield Lane Ruthin, Ruthin, Denbighshire, LL15 2TN Process: Turning of wood / sawmilling Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
11	327	NW	311258 359348	Address: RPC Concrete Solutions, Quarryfields, Ruthin, Denbighshire, LL15 2UG Process: Pre-cast concrete production. Status: Current Permit Permit Type: Part B Enforcement: Enforcement Notified Date of Enforcement: 11/02/1994 Comment: EPA 1990 S10 Variation Notice (Non-substantial Change)

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:

6

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

ID	Distance (m)	Direction	NGR	Details
2	113	NE	311510 359150	<p>Address: HAULAGE DEPOT BRICKFIELD LANE RUTH, HAULAGE DEPOT BRICKFIELD LANE R, BRICKFIELD LANE RUTHIN ,, RUTHIN ,, RUTHIN ,, , ,</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: CG0330001 Permit Version: 1</p> <p>Receiving Water: Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 29/05/1992 Effective Date: 29-May-1992 Revocation Date: -</p>
3	261	NE	311602 359266	<p>Address: L E JONES LIMITED, BRICKFIELD LANE, DENBIGH ROAD, RUTHIN, DENBIGHSHIRE, LL15 1PE</p> <p>Effluent Type: TRADE DISCHARGES - SITE DRAINAGE (CONTAM SURFACE WATER, NOT WASTE SIT</p> <p>Permit Number: CG0441701 Permit Version: 1</p> <p>Receiving Water: Status: NEW CONSENT (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 16/03/2006 Effective Date: 16-Mar-2006 Revocation Date: -</p>
4A	263	NW	311270 359280	<p>Address: QUARRYFIELDS, RUTHIN, ,</p> <p>Effluent Type: UNSPECIFIED</p> <p>Permit Number: CM0177301 Permit Version: 1</p> <p>Receiving Water: Status: REVOKED - UNSPECIFIED Issue date: 29/12/1988 Effective Date: 29-Dec-1988 Revocation Date: 28/12/1989</p>
5A	263	NW	311270 359280	<p>Address: QUARRYFIELDS, RUTHIN, ,</p> <p>Effluent Type: TRADE DISCHARGES - UNSPECIFIED</p> <p>Permit Number: CM0177301 Permit Version: 2</p> <p>Receiving Water: Status: CONSENT EXPIRED - TIME LIMIT Issue date: 29/12/1989 Effective Date: 29-Dec-1989 Revocation Date: 23/03/1998</p>
6	264	N	311445 359332	<p>Address: EFFLUENT TREATMENT SYSTEM @ RPC LTD, RUTHIN PRECAST CONCRETE LIMITED, QUARRYFIELDS, RHWEL, RUTHIN, DENBIGHSHIRE, LL15 2UG</p> <p>Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: EPRPB3893HX Permit Version: 1</p> <p>Receiving Water: Status: NEW ISSUED UNDER EPR 2010 Issue date: 27/02/2014 Effective Date: 27-Feb-2014 Revocation Date: -</p>
7	394	NE	311725 359332	<p>Address: HUW HOWATSON LTD, BRICKFIELD LANE, OFF DENBIGH ROAD, RUTHIN, DENBIGHSHIRE, LL15 1PE</p> <p>Effluent Type: TRADE DISCHARGES - SITE DRAINAGE</p> <p>Permit Number: CG0441201 Permit Version: 1</p> <p>Receiving Water: Status: NEW CONSENT (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 17/02/2006 Effective Date: 17-Feb-2006 Revocation Date: -</p>

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:

1

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

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
14B	18	NW	No Details	311369 359053	Approved	No Details	L E Jones Ltd, Brickfield Lane/Denbigh Road, Ruthin, LL15 2TN	No Details	Enforcement: No Enforcements Notified Date of Enforcement: Data requested, not received. Comment: Data requested, not received.

## 2.2 Dangerous or Hazardous Sites

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

1

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
12	156	NE	L E Jones (tattenhall) Ltd	L E Jones (Tattenhall) Ltd, Brickfield Lane Off Denbigh Road, Ruthin, LL15 1PE	Historical NIHHS Site	-

## 2.3 Environment Agency Recorded Pollution Incidents

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

1

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

ID	Distance (m)	Direction	NGR	Details
1	246	NE	311601 359247	Incident Date: 20-Aug-2001 Incident Identification: 25339 Pollutant: Oils and Fuel Pollutant Description: Diesel Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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**

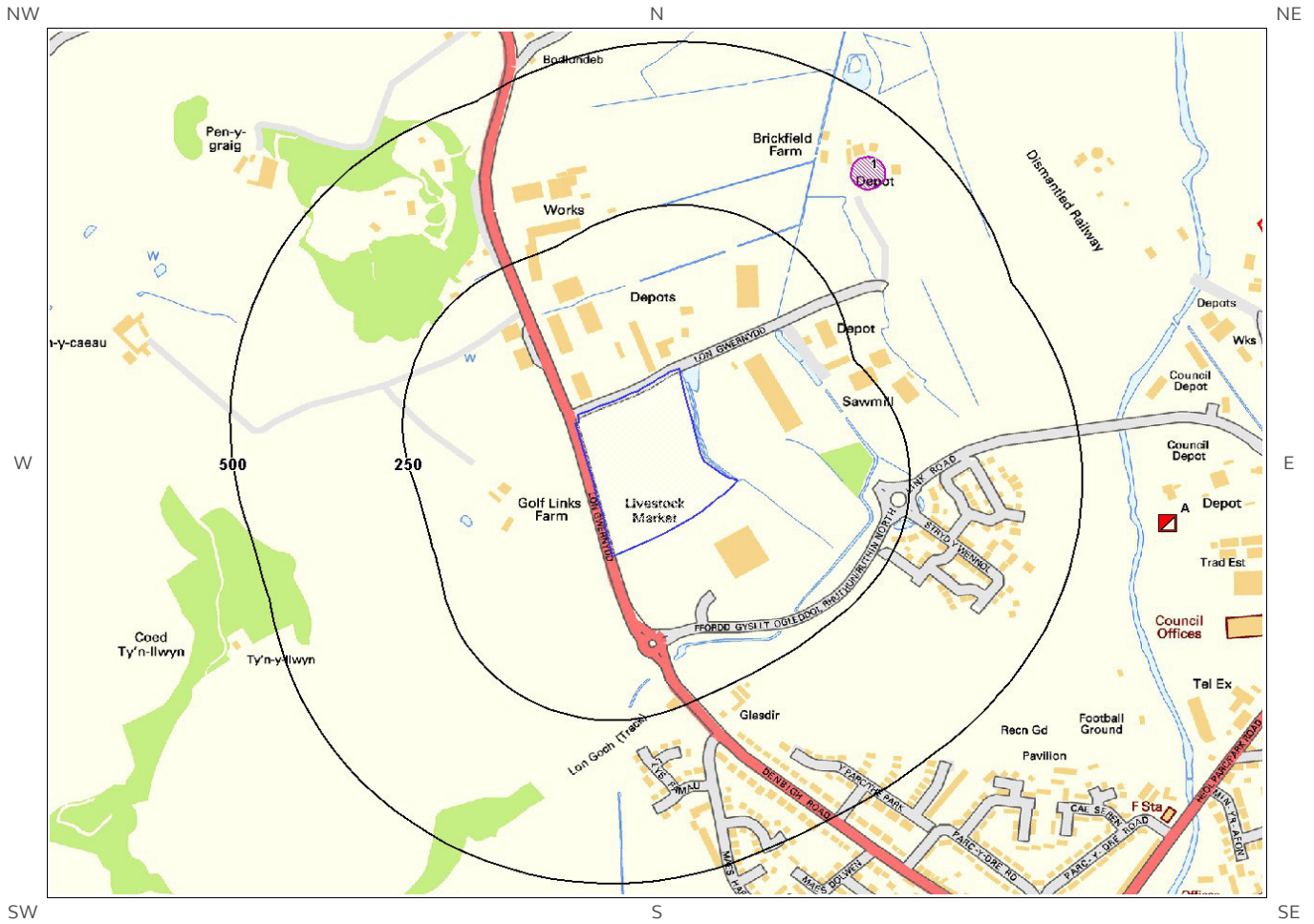
How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

0










Database searched and no data found.

---

# 3. Landfill and Other Waste Sites Map



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



# 3. Landfill and Other Waste Sites

## 3.1 Landfill Sites

### 3.1.1 Records from Environment Agency landfill data within 1000m of the study site:

0

Database searched and no data found.

### 3.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:

2

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

ID	Distance (m)	Direction	NGR	Details	
2B	794	E	312400 359200	Site Address: Con Parcwr, Ruthin Waste Licence: Yes Site Reference: NOW-302-L, L/1/29, L/1/33 Waste Type: Inert, Industrial, Commercial, Household, Special Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: The Pickeridge, Stoke Common Road, Fulmer, Buckinghamshire Operator: Glyndwr District Council First Recorded: 31-Dec-1944 Last Recorded: 17-Nov-1994
Not shown	974	N	311300 360200	Site Address: Ruthin Railway Line, Ruthin, Rhewl, Denbighshire Waste Licence: Yes Site Reference: L/1/4 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 20-Oct-1988 Licence Surrendered: Licence Hold Address: - Operator: H Howatson First Recorded: 31-Dec-1988 Last Recorded: 31-Dec-1993

### 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:

2

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
14B	796	E	312448 359231	Refuse Tip	1995 mapping	Polygon
Not shown	797	E	312339 359190	Refuse Tip	1968 mapping	Polygon

## 3.2 Other Waste Sites

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

1

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	381	NE	311706 359366	Type of Site: Recycling Facility Site Address: The Yard,Brickfield Lane, Denbigh Road, RUTHIN, Clwyd, LL15 2TN	Planning Application Reference: 02/2010/1569 Date: 09/07/2011	Further Details: Scheme comprises change of use from haulage yard to recycling facility. An application (ref: 02/2010/1569) for detailed planning permission was granted by Denbighshire B.C. A detailed planning application has been granted. Data Source: Historic Planning Application Data Type: Point

3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

10

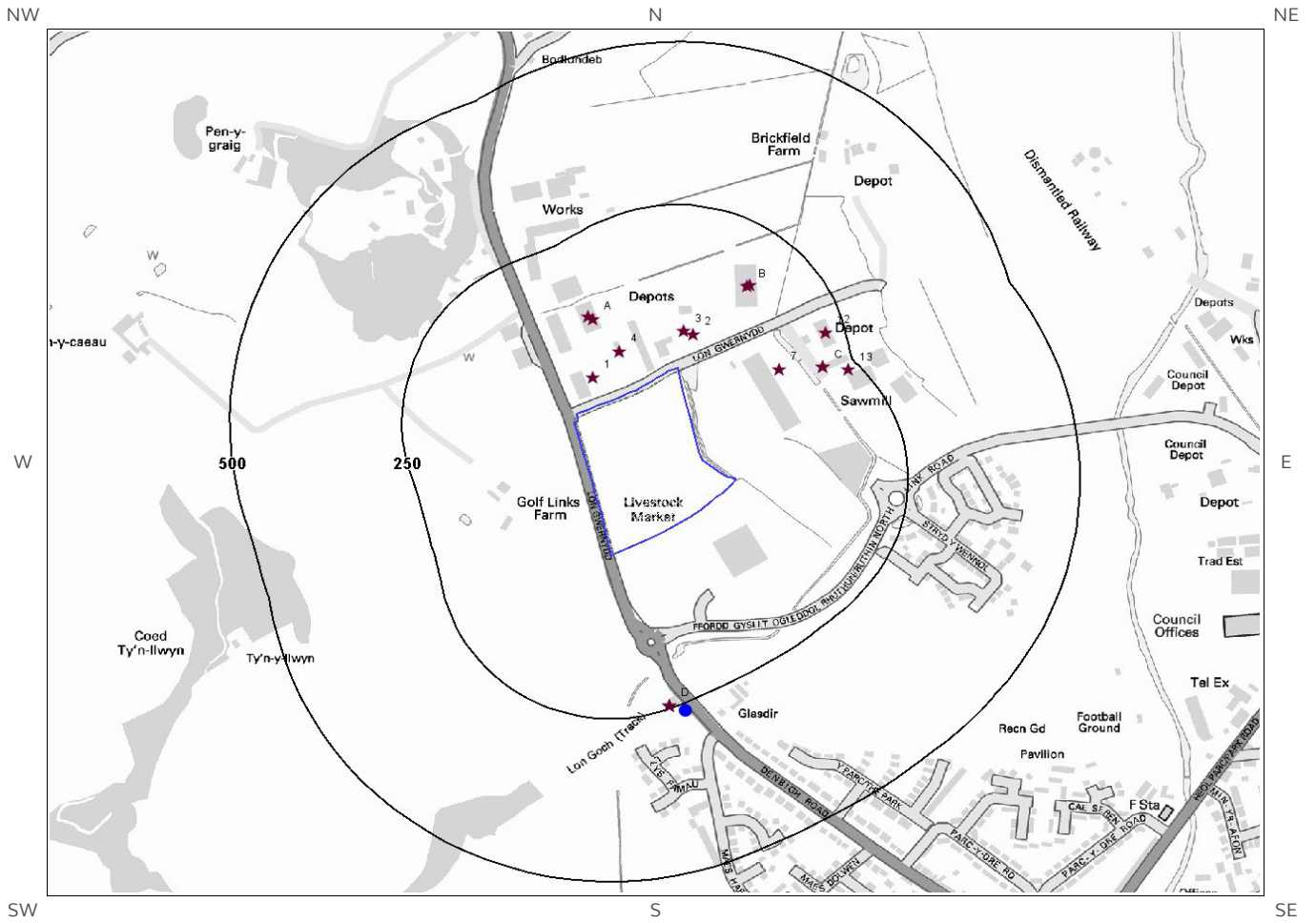
The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
4A	626	E	312140 358832	<p>Site Address: Min Y Clwyd, Hen Lon Parcwr, Ruthin, Denbighshire, LL15 1NA Type: Treatment of waste to produce soil &lt;75,000 tpy Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ITW002 EPR reference: EA/EPR/LB3135AL/A001 Operator: I T Williams Co Ltd Waste Management licence No: 104715 Annual Tonnage: 74999.0</p> <p>Issue Date: 03/10/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: I T Williams Ltd Correspondence Address: -, -</p>
5A	626	E	312140 358832	<p>Site Address: Min Y Clwyd, Hen Lon Parcwr, Ruthin, Denbighshire, LL15 1NA Type: Treatment of waste to produce soil &lt;75,000 tpy Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: ITW002 EPR reference: LB3135AL/A001 Operator: I T Williams Co Ltd Waste Management licence No: 104715 Annual Tonnage: 0.0</p> <p>Issue Date: 03/10/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: I T Williams Ltd Correspondence Address: -, -</p>
Not shown	772	E	312289 358875	<p>Site Address: Min Y Clwyd, Lon Parcwr, Ruthin, Denbighshire, LL15 1NA Type: Household, Commercial &amp; Industrial Waste T Stn Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WIL007 EPR reference: EA/EPR/BP3794FA/A001 Operator: I T Williams Company Ltd Waste Management licence No: 37018 Annual Tonnage: 24999.99</p> <p>Issue Date: 12/11/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Min Y Clwyd Yard Correspondence Address: -, -</p>
Not shown	772	E	312289 358875	<p>Site Address: Min Y Clwyd, Lon Parcwr, Ruthin, Denbighshire, LL15 1NA Type: Household, Commercial &amp; Industrial Waste T Stn Size: &gt;= 25000 tonnes &lt; 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WIL007 EPR reference: BP3794FA/A001 Operator: I T Williams Company Ltd Waste Management licence No: 37018 Annual Tonnage: 25000.0</p> <p>Issue Date: 12/11/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Min Y Clwyd Yard Correspondence Address: -, -</p>
Not shown	807	E	312289 359132	<p>Site Address: - Type: Household, Commercial &amp; Industrial Waste T Stn Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT007 EPR reference: - Operator: Sita Wastecare Ltd Waste Management licence No: 37054 Annual Tonnage: 0.0</p> <p>Issue Date: 12/02/1993 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Ruthin Civic Amenity Site Correspondence Address: -, Miners Road, Llay, Wrexham, LL12 0PJ</p>

ID	Distance (m)	Direction	NGR	Details
Not shown	807	E	312289 359132	<p>Site Address: Ruthin Civic Amenity Site, Land Off Lon Parcwr, Ruthin, Denbighshire, LL15 1NJ Type: Household, Commercial &amp; Industrial Waste T Stn Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAD022 EPR reference: BP3691ET/T001 Operator: C A D Recycling Ltd Waste Management licence No: 37054 Annual Tonnage: 20582.0</p> <p>Issue Date: 12/02/1993 Effective Date: 24/04/2009 Modified: 13/08/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Ruthin Civic Amenity Site Correspondence Address: -, -</p>
Not shown	807	E	312289 359132	<p>Site Address: Ruthin Civic Amenity Site, Land Off Lon Parcwr, Ruthin, Denbighshire, LL15 1NJ Type: Household Waste Amenity Site Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAD022 EPR reference: BP3691ET/T001 Operator: C A D Recycling Ltd Waste Management licence No: 37054 Annual Tonnage: 20582.0</p> <p>Issue Date: 12/02/1993 Effective Date: 24/04/2009 Modified: 13/08/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Ruthin Civic Amenity Site Correspondence Address: -, -</p>
Not shown	812	E	312305 359093	<p>Site Address: Ruthin Waste Transfer Station, Land Of Lon Parcwr, Ruthin, Denbighshire, LL15 1LY Type: Household, Commercial &amp; Industrial Waste T Stn Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 3CW004 EPR reference: CP3394FF/V002 Operator: 3 C Waste Ltd Waste Management licence No: 37122 Annual Tonnage: 21414.0</p> <p>Issue Date: 24/11/1994 Effective Date: - Modified: 09/01/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Ruthin Waste Transfer Station Correspondence Address: -, -</p>
Not shown	812	E	312305 359093	<p>Site Address: Ruthin Waste Transfer Station, Land Off Lon Parcwr, Ruthin, Denbighshire, LL15 1LY Type: Household, Commercial &amp; Industrial Waste T Stn Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS145 EPR reference: EA/EPR/TP3999VA/V002 Operator: Welsh Unitary Authority - Denbighshire County Council Waste Management licence No: 37122 Annual Tonnage: 25000.0</p> <p>Issue Date: 24/11/1994 Effective Date: 08/06/2011 Modified: 22/07/2014 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Ruthin Waste Transfer Station Correspondence Address: -, -</p>
Not shown	812	E	312305 359093	<p>Site Address: Ruthin Waste Transfer Station, Land Off Lon Parcwr, Ruthin, Denbighshire, LL15 1LY Type: Household, Commercial &amp; Industrial Waste T Stn Size: &gt;= 25000 tonnes &lt; 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS145 EPR reference: TP3999VA/V003 Operator: Welsh Unitary Authority - Denbighshire County Council Waste Management licence No: 37122 Annual Tonnage: 25000.0</p> <p>Issue Date: 24/11/1994 Effective Date: 08/06/2011 Modified: 04/02/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Ruthin Waste Transfer Station Correspondence Address: -, -</p>



# 4. Current Land Use Map



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-  Site Outline
-  Current Industrial Sites
-  Electricity Transmission Cables
-  Search Buffers (m)
-  Petrol & Fuel Sites
-  Gas Transmission Pipelines

# 4. Current Land Uses

## 4.1 Current Industrial Data

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

16

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	44	N	Depot	311308 359054	LL15	Container and Storage	Transport, Storage and Delivery
2	57	N	Dragon Drilling	311453 359120	Brickfield Lane, Denbigh Road, Ruthin, LL15 2TN	Cutting, Drilling and Welding Services	Construction Services
3	58	N	Depot	311440 359125	LL15	Container and Storage	Transport, Storage and Delivery
4	65	NW	Optical Tools for Industry Ltd	311346 359094	Brickfield Lane, Denbigh Road, Ruthin, LL15 2TN	Photographic and Optical Equipment	Consumer Products
5A	126	NW	Mona Tractors	311308 359143	Brickfield Lane, Denbigh Road, Ruthin, LL15 2TN	Agricultural Machinery and Goods	Industrial Products
6A	133	NW	Depot	311301 359148	LL15	Container and Storage	Transport, Storage and Delivery
7	143	E	Electricity Sub Station	311579 359067	LL15	Electrical Features	Infrastructure and Facilities
8B	162	NE	L E Jones Ltd	311532 359194	Brickfield Lane, Denbigh Road, Ruthin, LL15 2TN	Distribution and Haulage	Transport, Storage and Delivery
9B	164	NE	Depot	311536 359195	LL15	Container and Storage	Transport, Storage and Delivery
10C	206	E	Clifford Jones Fencing Ltd	311642 359069	Brickfield Lane, Denbigh Road, Ruthin, LL15 2TN	Fences, Gates and Railings	Industrial Products
11C	206	E	I W T Composites	311642 359069	Brickfield Lane, Denbigh Road, Ruthin, LL15 2TN	Glass Fibre Services	Industrial Products
12	221	E	Depot	311646 359123	LL15	Container and Storage	Transport, Storage and Delivery
13	235	NE	Saw Mill	311679 359066	LL15	Wood Products Including Charcoal, Paper, Card and Board	Industrial Products
14D	244	S	Dyffryn Service Station	311420 358551	Denbigh Road, Ruthin, LL15 1PE	Vehicle Cleaning Services	Personal, Consumer and Other Services
15D	244	S	Dyffryn Service Station	311420 358551	Denbigh Road, Ruthin, LL15 1PE	Petrol and Fuel Stations	Road and Rail
16D	245	S	Esso	311420 358550	Denbigh Road, Ruthin, LL15 1PE	Petrol and Fuel Stations	Road and Rail

## 4.2 Petrol and Fuel Sites

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

1

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
17D	260	SE	311443 358543	Esso	Dyffryn Service Station, Denbigh Road, Denbigh Road, Ruthin, Clwyd, LL15 1PE	No	Open

## 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

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

Lex Code	Description	Rock Type
MGR-MGRD	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

## 5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
ALF1	ALLUVIAL FAN DEPOSITS 1	SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]
ALV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]
PEAT	PEAT	PEAT [UNLITHIFIED DEPOSITS CODING SCHEME]
TILLD	TILL, DEVENSIAN	DIAMICTON

## 5.3 Bedrock and Solid Geology

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

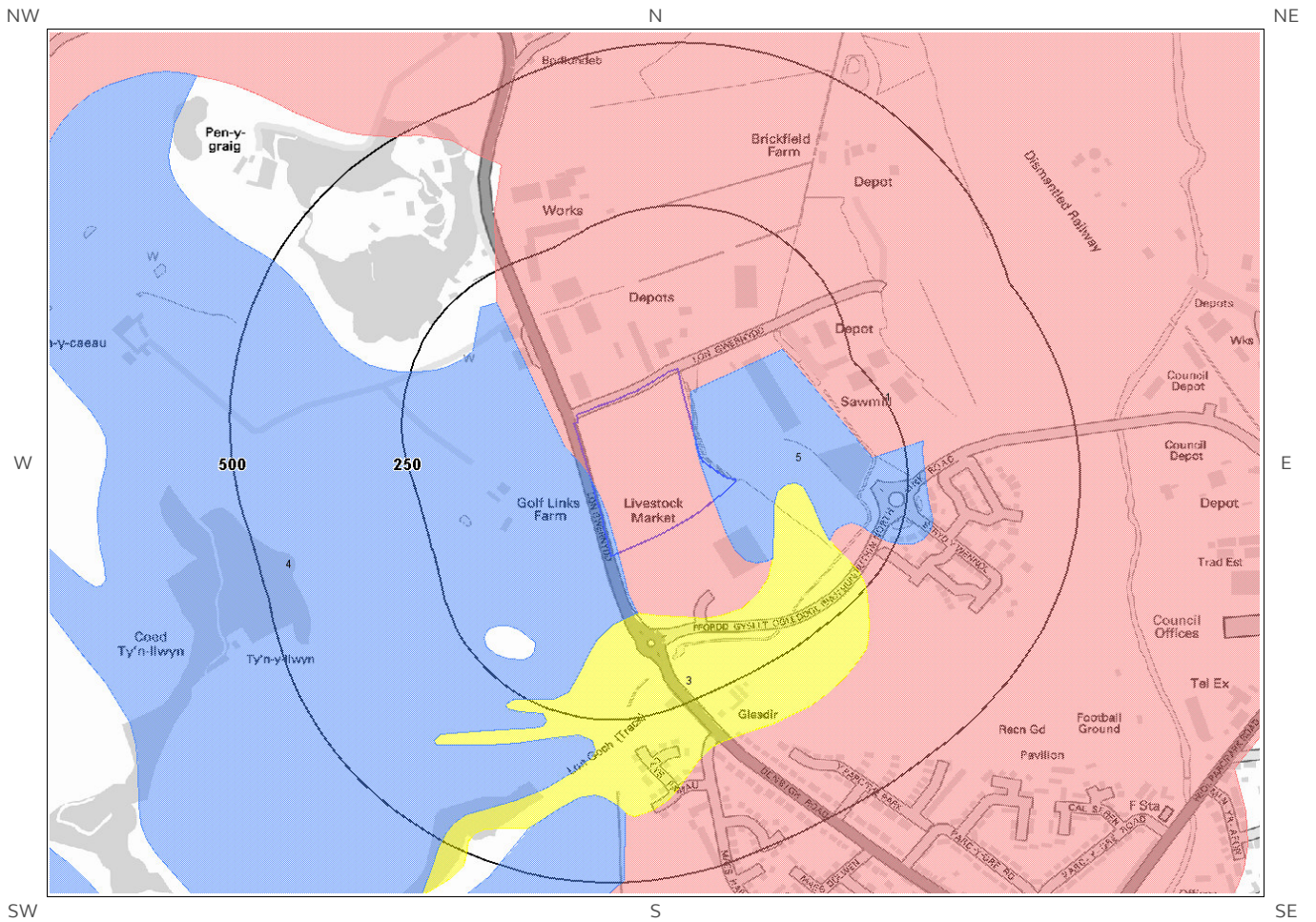
Lex Code	Description	Rock Type
KNSF-SDST	KINNERTON SANDSTONE FORMATION	SANDSTONE
KNSF-SDST	KINNERTON SANDSTONE FORMATION	SANDSTONE
KNSF-SDST	KINNERTON SANDSTONE FORMATION	SANDSTONE

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

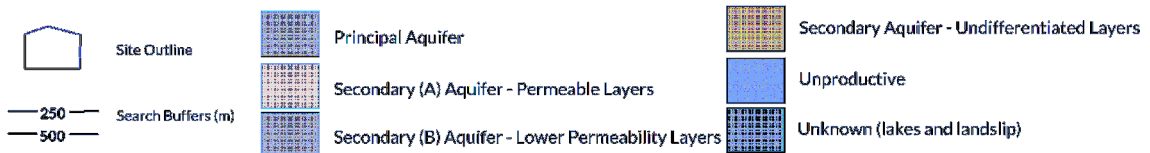


# 6 Hydrogeology and Hydrology

## 6a. Aquifer Within Superficial Geology

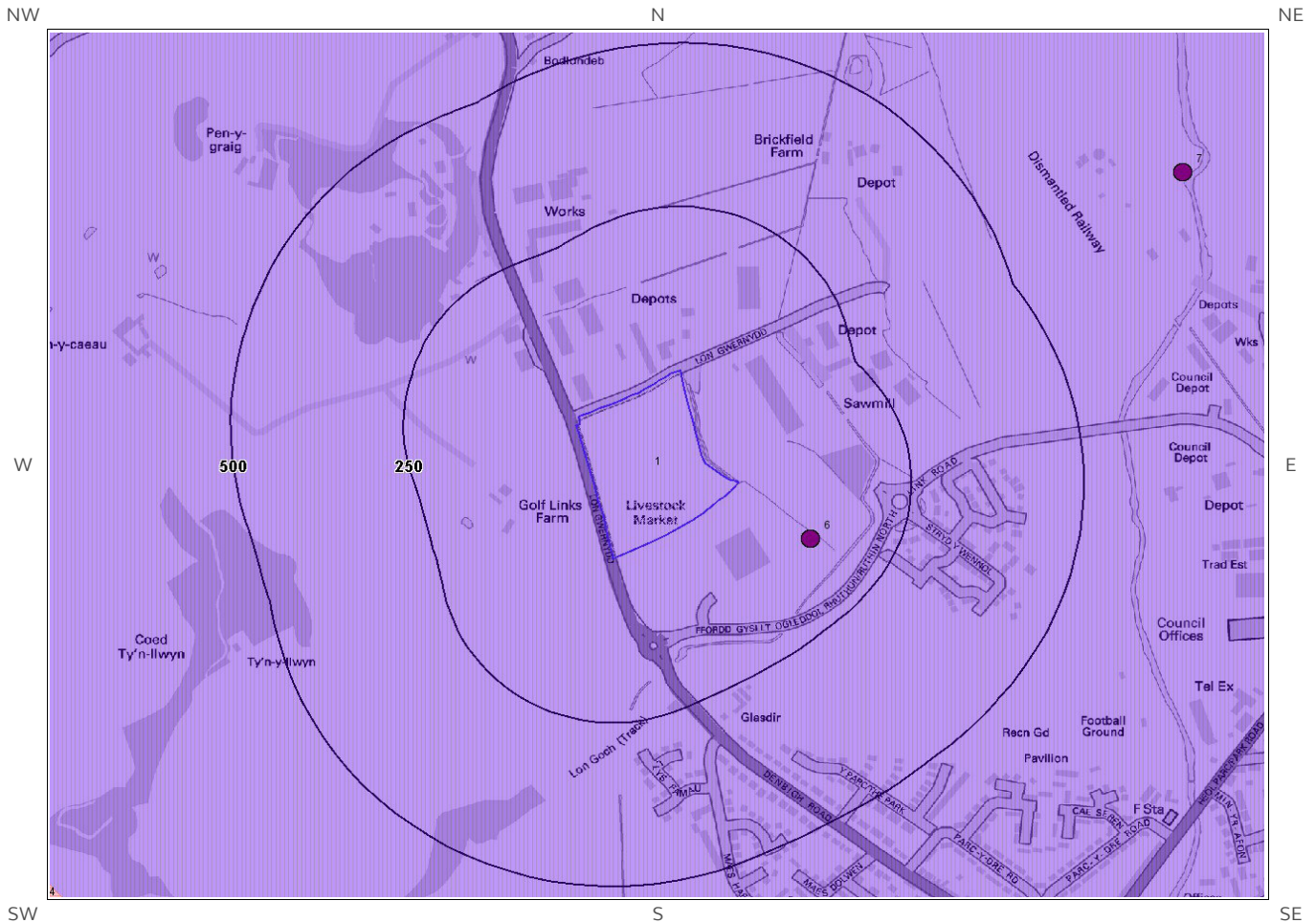


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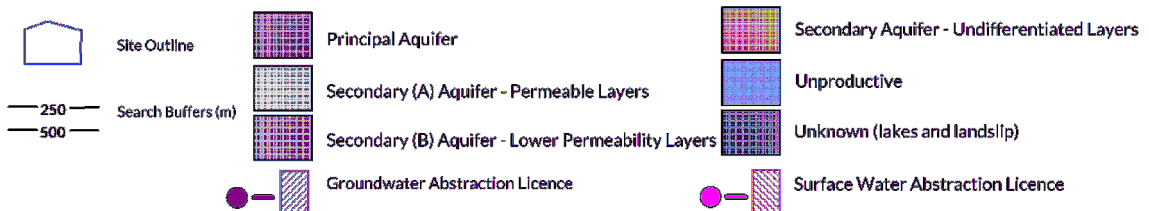




# 6b. Aquifer Within Bedrock Geology and Abstraction Licenses

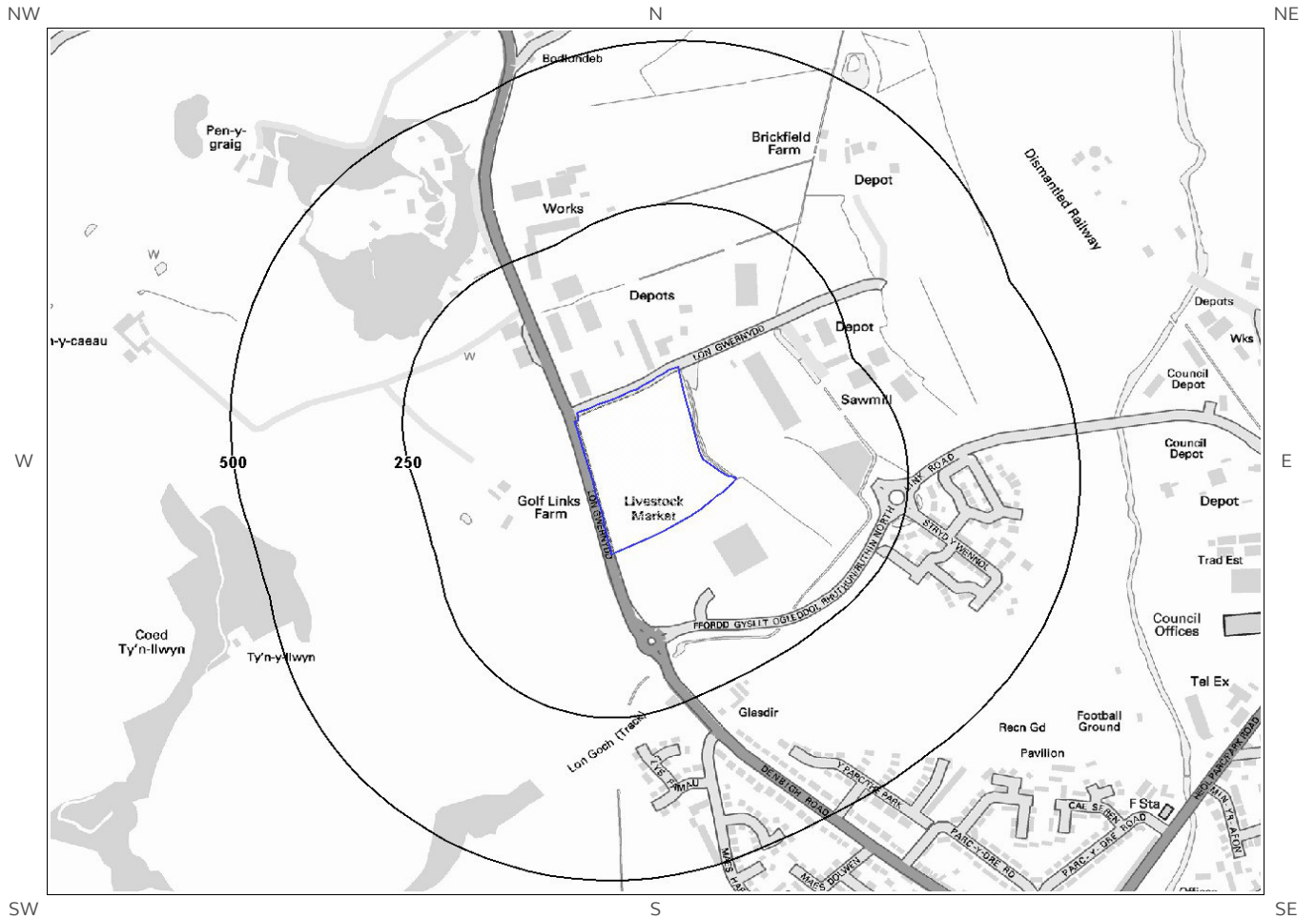


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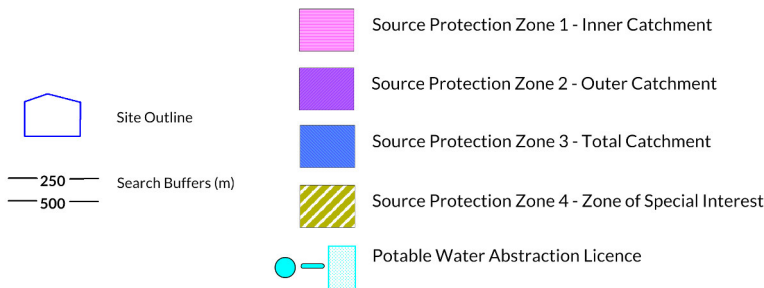




# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



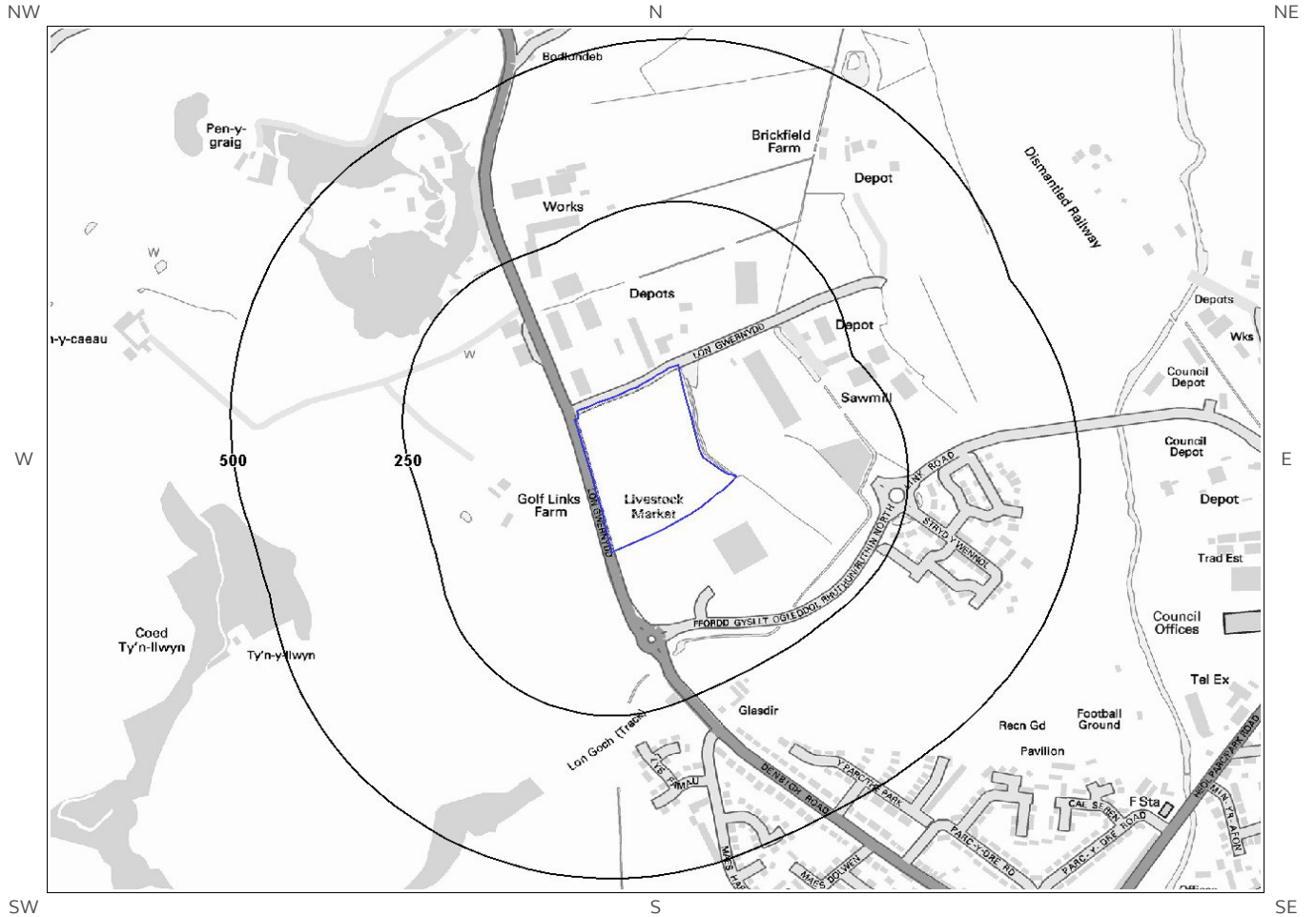
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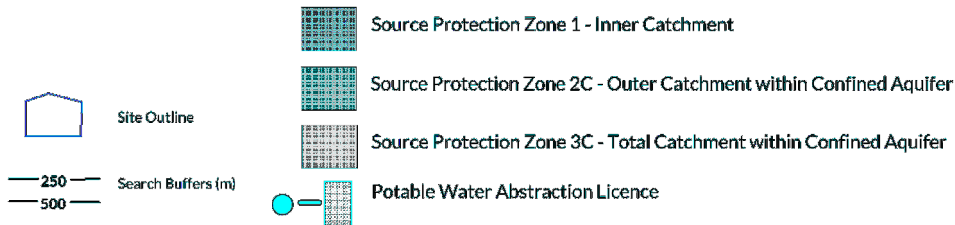




# 6d. Hydrogeology – Source Protection Zones within confined aquifer



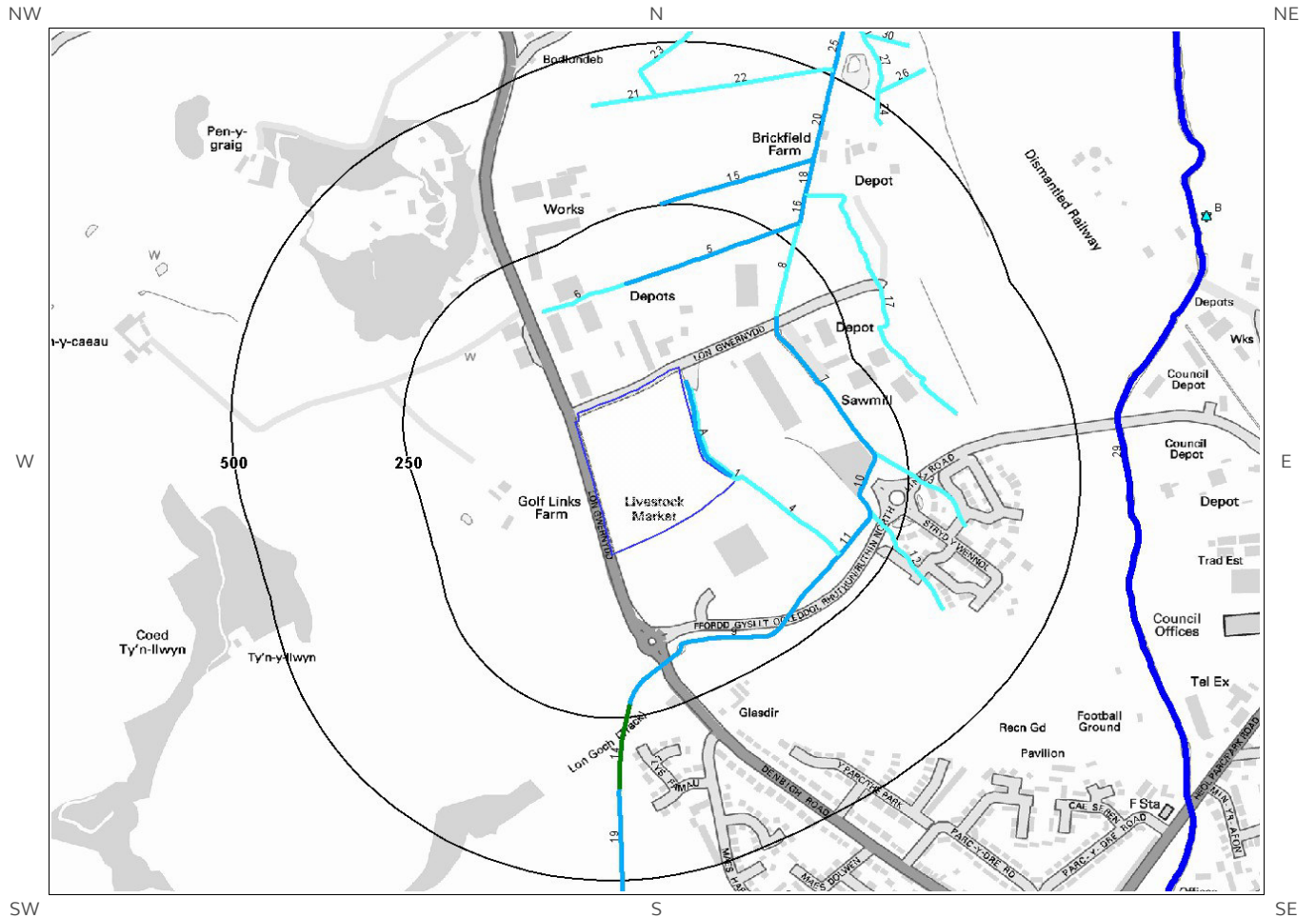
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# 6e. Hydrology – Detailed River Network and River Quality



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- |                        |                                       |                                     |
|------------------------|---------------------------------------|-------------------------------------|
| Site Outline           | Primary River                         | Canal                               |
| 250 Search Buffers (m) | Secondary River                       | Canal Tunnel                        |
| 500 Search Buffers (m) | Tertiary River                        | Culvert                             |
|                        | Lake/Reservoir                        | Multiple Channel Culvert            |
|                        | Underground River (inferred)          | Underground River (Potential Sewer) |
|                        | General Quality Assessment: Biology   | Underground River (local knowledge) |
|                        | General Quality Assessment: Chemistry |                                     |

# 6. Hydrogeology and Hydrology

## 6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency'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 Enviroinsight 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	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	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
5	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
3	62	E	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

## 6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency'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 Enviroinsight 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	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

## 6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Yes

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

ID	Distance (m)	Direction	NGR	Details
6	134	SE	311620 358810	Status: Active Licence No: 24/66/1/0045 Details: General Washing/Process Washing Direct Source: Eaw Groundwater Point: Borehole Data Type: Point Name: Ruthin Farmers Auction Co Ltd Annual Volume (m <sup>3</sup> ): 6250 Max Daily Volume (m <sup>3</sup> ): 50 Original Application No: C219/1703 Original Start Date: 8/10/1992 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2008 Version End Date:
7	788	NE	312160 359370	Status: Active Licence No: 24/66/1/0040 Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: Eaw Groundwater Point: Borehole 130 Metres Deep Data Type: Point Name: Dwr Cymru Cyfyngedig Annual Volume (m <sup>3</sup> ): 415959 Max Daily Volume (m <sup>3</sup> ): 2273 Original Application No: N198 Original Start Date: 1/9/1986 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2006 Version End Date:
Not shown	1733	SE	312370 357371	Status: Historical Licence No: 24/66/1/0002 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well Data Type: Point Name: Jones Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: 15 Original Start Date: 31/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 31/12/1965 Version End Date:

## 6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site?

Yes

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
Not shown	1092	SE	312070 357940	Status: Historical Licence No: 24/66/1/0034 Details: Lake & Pond Throughflow Direct Source: Eaw Surface Water Point: River Clwyd Data Type: Point Name: Glyndwr District Council Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Application No: N137 Original Start Date: 12/6/1974 Expiry Date: - Issue No: 100 Version Start Date: 12/6/1974 Version End Date:
Not shown	1101	SE	312070 357930	Status: Active Licence No: 24/66/1/0034 Details: Lake & Pond Throughflow Direct Source: Eaw Surface Water Point: River Clwyd Data Type: Point Name: Denbighshire County Council Annual Volume (m <sup>3</sup> ): 909200 Max Daily Volume (m <sup>3</sup> ): 4546 Application No: - Original Start Date: 12/6/1974 Expiry Date: - Issue No: 101 Version Start Date: 1/4/1996 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1689	S	311160 357100	Status: Historical Licence No: 24/66/1/0024 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Eaw Surface Water Point: Spring Data Type: Point Name: Ruthin Castle Ltd. Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Application No: - Original Start Date: 14/3/1969 Expiry Date: - Issue No: 101 Version Start Date: 4/9/2002 Version End Date:

## 6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details
Not shown	1689	S	311160 357100	Status: Historical Licence No: 24/66/1/0024 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Eaw Surface Water Point: Spring Data Type: Point Name: Ruthin Castle Ltd. Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 14/3/1969 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:

## 6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

## 6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

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

Is there any Environment Agency information on groundwater vulnerability and soil leaching potential within 500m of the study site?

Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.
0	On Site	Major Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
0	On Site	Major Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.
499	N	Major Aquifer/High Leaching Potential	H2	Deep, permeable, coarse textured soils which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential.

## 6.9 River Quality

Is there any Environment Agency information on river quality within 1500m of the study site?

Yes

### 6.9.1 Biological Quality:

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

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
43B	794	NE	312200 359300	River Name: Clwyd Reach: 1km D/s Ruthin Stw-o/f Ruthin Stw End/Start of Stretch: Start of Stretch NGR	C	C	C	C	C
44B	794	NE	312200 359300	River Name: Clwyd Reach: O/f Ruthin Stw -conf.afon Hesbin End/Start of Stretch: End of Stretch NGR	B	B	A	A	A
Not shown	1401	NE	312100 360300	River Name: Clwyd Reach: Conf.dwr lal -1km D/s Ruthin Stw End/Start of Stretch: Start of Stretch NGR	C	C	C	B	B
Not shown	1401	NE	312100 360300	River Name: Clwyd Reach: 1km D/s Ruthin Stw-o/f Ruthin Stw End/Start of Stretch: End of Stretch NGR	C	C	C	C	C

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

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
47B	794	NE	312200 359300	River Name: Clwyd Reach: 1km D/s Ruthin Stw-o/f Ruthin Stw End/Start of Stretch: Start of Stretch NGR	B	A	A	A	-
48B	794	NE	312200 359300	River Name: Clwyd Reach: O/f Ruthin Stw -conf.afon Hesbin End/Start of Stretch: End of Stretch NGR	A	A	A	A	-
Not shown	917	SE	312070 358160	River Name: Clwyd Reach: O/f Ruthin Stw -conf.afon Hesbin End/Start of Stretch: Sample Point NGR	A	A	A	A	-
Not shown	957	NE	312150 359700	River Name: Clwyd Reach: 1km D/s Ruthin Stw-o/f Ruthin Stw End/Start of Stretch: Sample Point NGR	B	A	A	A	-
Not shown	1401	NE	312100 360300	River Name: Clwyd Reach: Conf.dwr lal -1km D/s Ruthin Stw End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-
Not shown	1401	NE	312100 360300	River Name: Clwyd Reach: 1km D/s Ruthin Stw-o/f Ruthin Stw End/Start of Stretch: End of Stretch NGR	B	A	A	A	-

## 6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site? Yes

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distance (m)	Direction	Details	
1	0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
2A	1	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
3A	2	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
4	2	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
5	146	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
6	148	NW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
7	153	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
8	162	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
9	167	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
10	180	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
11	189	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
12	199	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13	203	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14	231	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
15	252	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
16	282	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
17	298	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18	321	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
19	360	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
20	374	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
21	416	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
22	417	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details
23	417	N	River Name: Drain Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
24	476	NE	River Name: - Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined

## 6.11 Surface Water Features

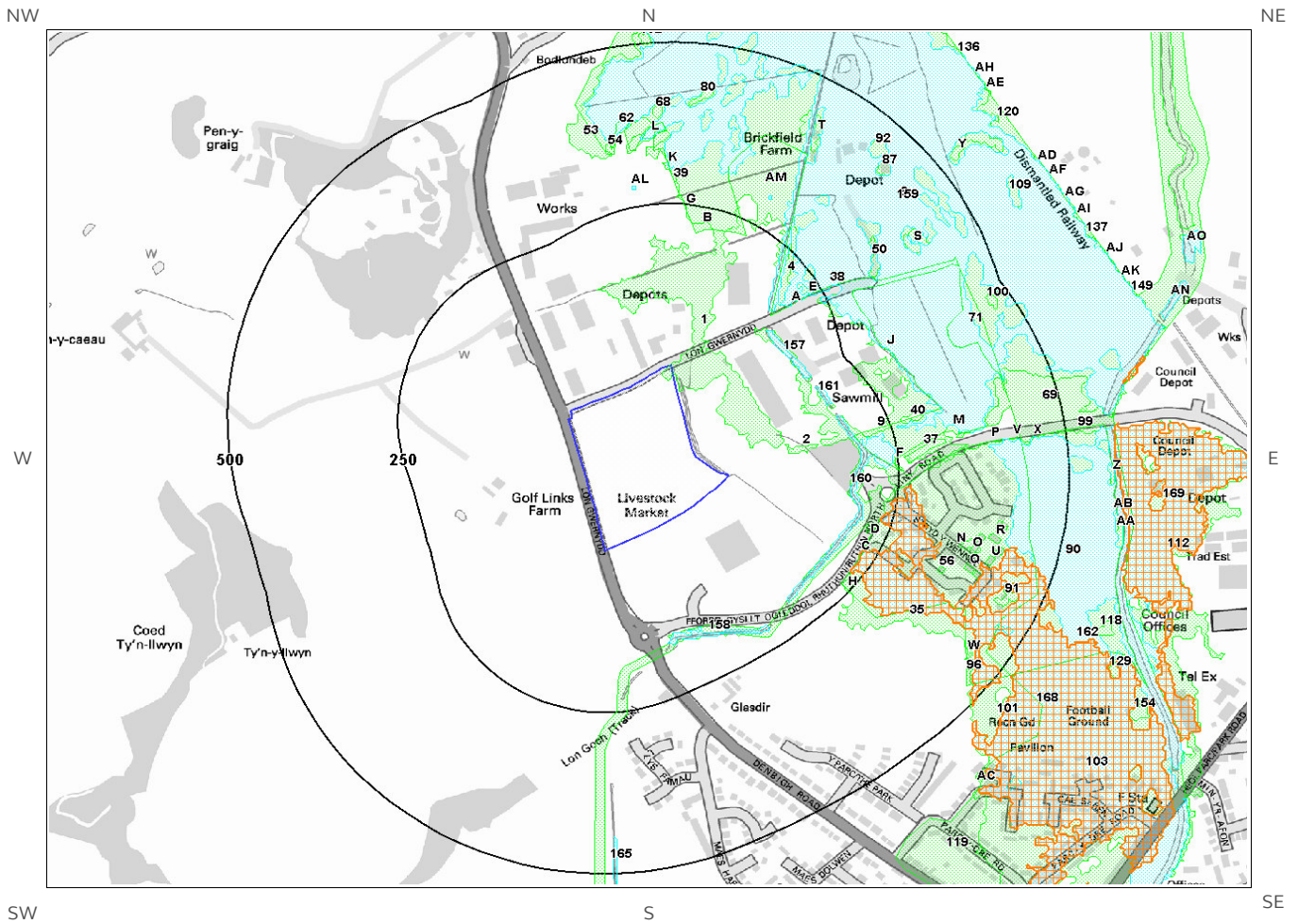
Are there any surface water features within 250m of the study site? Yes

The following surface water records are not represented on mapping:

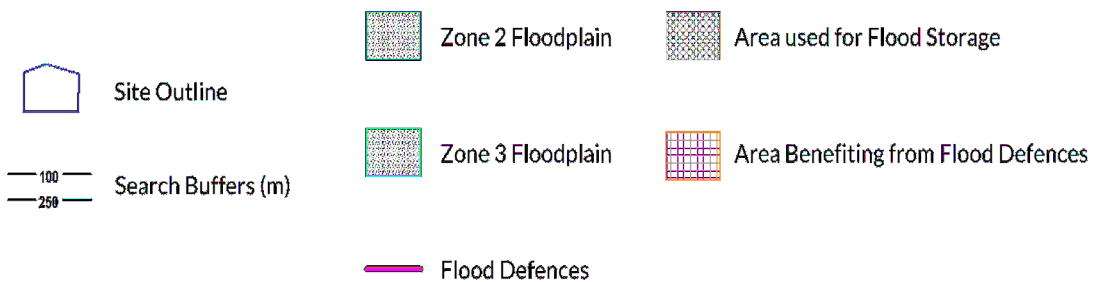
Distance (m)	Direction
2	N
99	SE
123	E
148	NW
149	E
162	NE
178	E
183	NE
206	E
236	E
250	NW



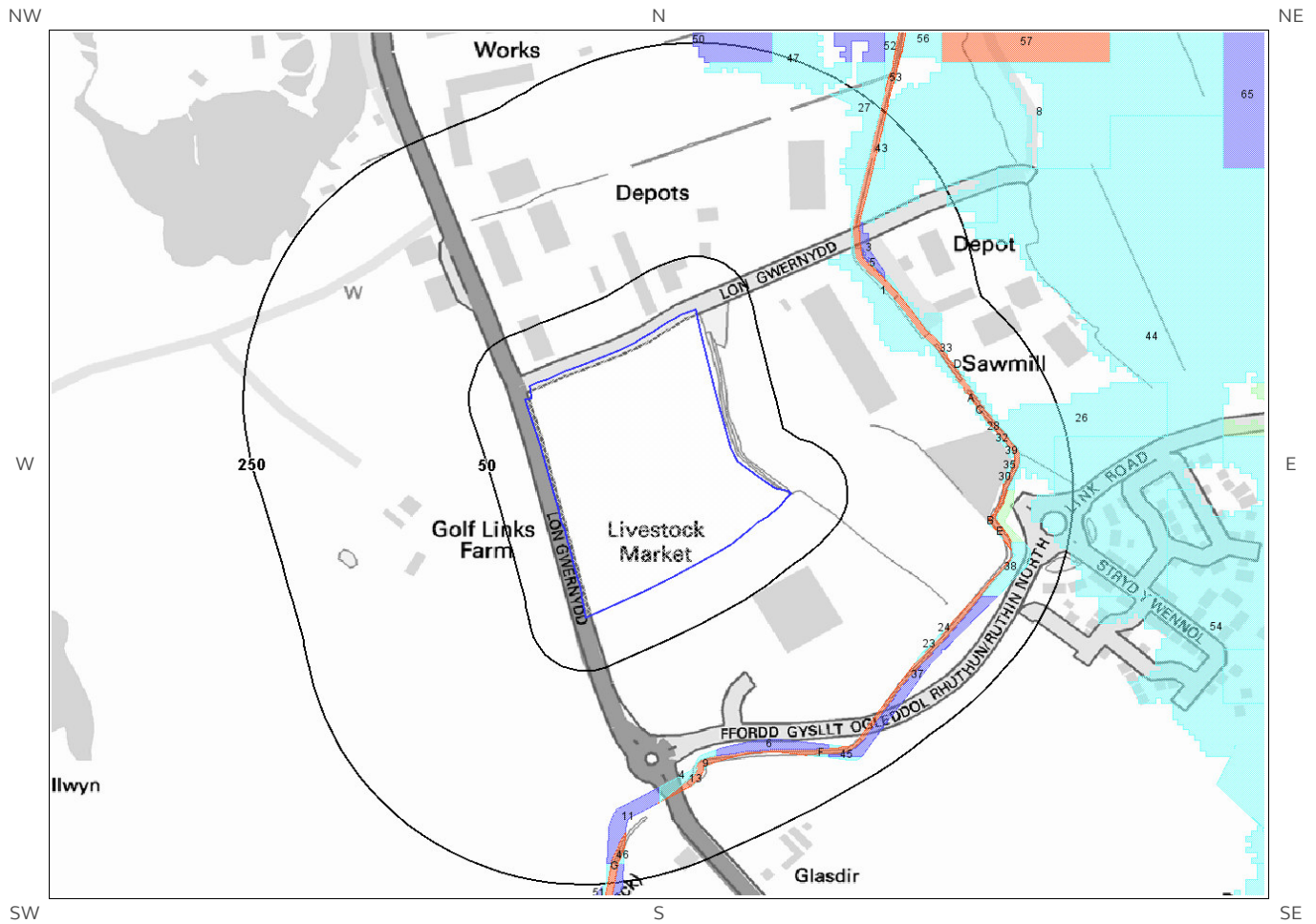
# 7a. Environment Agency Flood Map for Planning (from rivers and the sea)



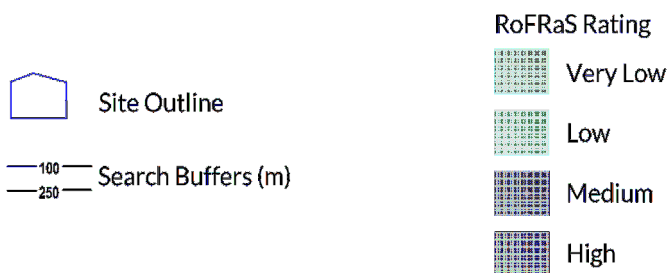
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# 7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency Zone 2 floodplain?

Yes

Environment Agency 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	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
2	94	E	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
3	133	E	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
4	165	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
5AM	166	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
6	171	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
7A	196	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
8A	200	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
9	205	E	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
10B	208	N	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
11A	212	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
12	223	N	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
13B	225	N	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
14C	226	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
15E	227	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
16D	227	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
17C	227	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
18D	227	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
19N	227	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)

20D	228	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
21E	228	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
22D	229	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
23	230	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
24	236	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
25G	240	N	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
26F	241	E	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
27H	241	SE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
28	242	NE	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
29F	245	E	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
30F	245	E	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)
31G	249	N	08-Feb-2016	Zone 2 - (Fluvial /Tidal Models)

---

## 7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency Zone 3 floodplain?

Yes

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	149	E	23-Feb-2016	Zone 3 - (Fluvial Models)
2	157	SE	23-Feb-2016	Zone 3 - (Fluvial Models)
3	166	NE	23-Feb-2016	Zone 3 - (Fluvial Models)
4	179	E	23-Feb-2016	Zone 3 - (Fluvial Models)
5AM	182	NE	23-Feb-2016	Zone 3 - (Fluvial Models)
6	228	SE	23-Feb-2016	Zone 3 - (Fluvial Models)

---



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

What is the highest risk of flooding onsite? Very Low

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

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

### 7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No  
Database searched and no data found.

### 7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? Yes

### 7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

### 7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding? Clearwater Flooding

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

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Potential at Surface

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



## 7.8 Groundwater Flooding Confidence Areas

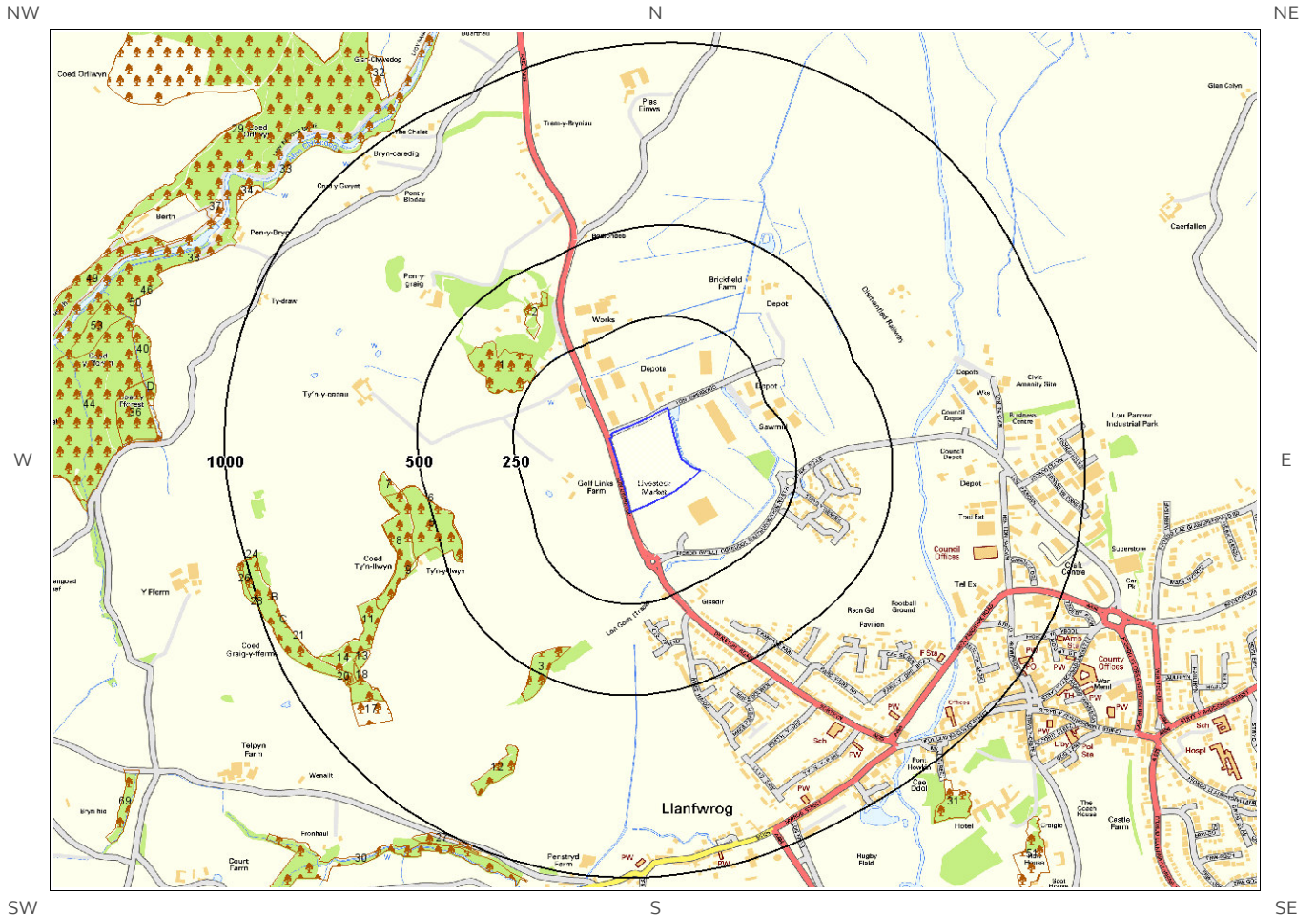
What is the British Geological Survey confidence rating in this result?

Low

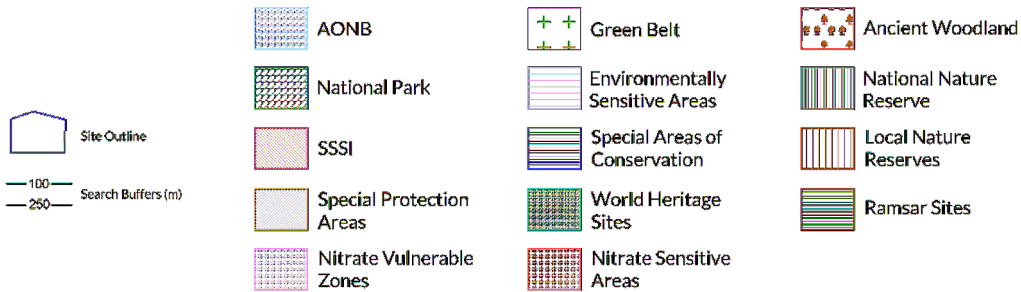
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

# 8. Designated Environmentally Sensitive Sites Map



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# 8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

---

## 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:**

120

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

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
1	251	NW	Unknown	Restored Ancient Woodland Site
2	326	NW	Unknown	Restored Ancient Woodland Site
3	399	SW	Unknown	Ancient and Semi-Natural Woodland
4	445	W	Unknown	Ancient and Semi-Natural Woodland
5	447	W	Unknown	Ancient and Semi-Natural Woodland
6	474	W	Unknown	Ancient and Semi-Natural Woodland
7	521	W	Unknown	Ancient and Semi-Natural Woodland
8	551	W	Unknown	Restored Ancient Woodland Site
9	562	W	Unknown	Ancient and Semi-Natural Woodland
10	583	W	Unknown	Ancient and Semi-Natural Woodland
11	614	W	Unknown	Restored Ancient Woodland Site
12	707	SW	Unknown	Ancient and Semi-Natural Woodland
13	775	SW	Unknown	Restored Ancient Woodland Site
14	785	SW	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
15A	815	SW	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
16A	816	SW	Unknown	Restored Ancient Woodland Site
17	819	SW	Unknown	Ancient Replanted Woodland
18	826	SW	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
19C	849	SW	Unknown	Restored Ancient Woodland Site
20	875	SW	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
21	907	SW	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
22B	955	W	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
23B	959	W	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
24	977	W	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
25C	980	W	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
26	994	W	Unknown	Ancient and Semi-Natural Woodland
27	1000	SW	Unknown	Ancient and Semi-Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
28	1002	W	COED GRAIG-Y-FFERM	Ancient and Semi-Natural Woodland
29	1010	NW	Unknown	Ancient and Semi-Natural Woodland
30	1017	S	Unknown	Ancient and Semi-Natural Woodland
31	1052	SE	Unknown	Restored Ancient Woodland Site
32	1088	NW	Unknown	Ancient Replanted Woodland
33	1105	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
34	1124	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
35	1163	W	Unknown	Ancient Replanted Woodland
36	1174	W	Unknown	Ancient Replanted Woodland
37	1178	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
38	1180	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
39D	1185	W	Unknown	Restored Ancient Woodland Site
40	1196	W	Unknown	Ancient and Semi-Natural Woodland
41	1213	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
42	1213	W	COED ORLLWYN	Ancient and Semi-Natural Woodland
43D	1214	W	Unknown	Ancient Replanted Woodland
44	1222	W	Unknown	Ancient Replanted Woodland
Not shown	1255	S	Unknown	Ancient and Semi-Natural Woodland
46	1258	W	COED Y NANT/FEDW ITHEL	Ancient Replanted Woodland
47	1259	NW	Unknown	Ancient Replanted Woodland
48	1266	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
49	1271	NW	Unknown	Ancient Replanted Woodland
50	1277	W	COED Y NANT/FEDW ITHEL	Ancient Replanted Woodland
51	1281	SE	Unknown	Restored Ancient Woodland Site
52	1291	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
53	1297	W	Unknown	Ancient Replanted Woodland
Not shown	1312	NW	Unknown	Ancient Replanted Woodland
Not shown	1318	NW	Unknown	Ancient Replanted Woodland
Not shown	1332	NW	Unknown	Ancient Replanted Woodland
Not shown	1339	S	Unknown	Restored Ancient Woodland Site
Not shown	1344	S	Unknown	Ancient Replanted Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1344	S	COED GALCHOG	Ancient Replanted Woodland
Not shown	1351	S	COED GALCHOG	Ancient Replanted Woodland
61	1371	W	COED Y NANT/FEDW ITHEL	Ancient Replanted Woodland
Not shown	1376	NW	Unknown	Ancient Replanted Woodland
Not shown	1388	S	COED GALCHOG	Ancient Replanted Woodland
64	1391	W	COED Y NANT/FEDW ITHEL	Ancient Replanted Woodland
Not shown	1394	S	COED GALCHOG	Ancient Replanted Woodland
Not shown	1402	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1440	S	COED GALCHOG	Ancient Replanted Woodland
Not shown	1455	S	COED GALCHOG	Ancient Replanted Woodland
69	1458	SW	Unknown	Ancient and Semi-Natural Woodland
Not shown	1475	S	COED GALCHOG	Ancient Replanted Woodland
Not shown	1487	S	Unknown	Ancient Replanted Woodland
Not shown	1489	S	COED GALCHOG	Ancient Replanted Woodland
Not shown	1505	S	Unknown	Restored Ancient Woodland Site
Not shown	1536	S	Unknown	Restored Ancient Woodland Site
Not shown	1538	S	Unknown	Restored Ancient Woodland Site
Not shown	1590	NE	Unknown	Ancient Replanted Woodland
Not shown	1605	W	Unknown	Ancient Replanted Woodland
78	1639	NW	Unknown	Ancient Replanted Woodland
Not shown	1669	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1669	S	Unknown	Ancient and Semi-Natural Woodland
Not shown	1670	S	Unknown	Ancient and Semi-Natural Woodland
Not shown	1694	S	Unknown	Ancient and Semi-Natural Woodland
Not shown	1702	S	Unknown	Ancient Replanted Woodland
Not shown	1719	S	Unknown	Restored Ancient Woodland Site
Not shown	1719	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1720	W	COED Y NANT/FEDW ITHEL	Ancient Replanted Woodland



ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1720	S	Unknown	Restored Ancient Woodland Site
Not shown	1723	S	Unknown	Ancient Replanted Woodland
Not shown	1724	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1725	S	COED GALCHOG	Ancient Replanted Woodland
Not shown	1727	SW	Unknown	Ancient and Semi-Natural Woodland
Not shown	1728	S	Unknown	Ancient Replanted Woodland
Not shown	1741	W	Unknown	Ancient and Semi-Natural Woodland
Not shown	1747	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1751	S	Unknown	Restored Ancient Woodland Site
Not shown	1755	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1771	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1785	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1805	W	Unknown	Ancient and Semi-Natural Woodland
Not shown	1813	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1823	W	Unknown	Restored Ancient Woodland Site
Not shown	1849	S	Unknown	Ancient Replanted Woodland
Not shown	1850	S	COED GALCHOG	Ancient Replanted Woodland
Not shown	1856	S	COED GALCHOG	Ancient Replanted Woodland
Not shown	1867	W	COED Y NANT/FEDW ITHEL	Ancient Replanted Woodland
Not shown	1867	SE	Unknown	Ancient and Semi-Natural Woodland
Not shown	1876	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1891	W	Unknown	Ancient and Semi-Natural Woodland
Not shown	1911	S	Unknown	Restored Ancient Woodland Site
Not shown	1914	W	Unknown	Ancient and Semi-Natural Woodland
Not shown	1914	S	GRAIG LOM WOOD	Ancient Replanted Woodland
Not shown	1931	S	Unknown	Ancient Replanted Woodland
Not shown	1940	S	Unknown	Ancient Replanted Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1947	W	Unknown	Ancient and Semi-Natural Woodland
Not shown	1949	SE	Unknown	Ancient and Semi-Natural Woodland
Not shown	1982	W	Unknown	Restored Ancient Woodland Site
Not shown	1989	S	Unknown	Restored Ancient Woodland Site
Not shown	1993	NW	COED ORLLWYN	Ancient and Semi-Natural Woodland
Not shown	1994	W	Unknown	Ancient Replanted Woodland
Not shown	1999	W	COED Y NANT/FEDW ITHEL	Ancient Replanted Woodland

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

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:**

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

# 9. Natural Hazards Findings

## 9.1 Detailed BGS GeoSure Data

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

### 9.1.1 Shrink Swell

What is the maximum Shrink-Swell\* hazard rating identified on the study site? Very Low

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

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

### 9.1.2 Landslides

What is the 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

What is the 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

What is the maximum Compressible Ground\* hazard rating identified on the study site? High

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

---

**Hazard**

Very 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 Ö consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property Ö probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.

---

### 9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks\* hazard rating identified on the study site? Very Low

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

---

**Hazard**

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

---

### 9.1.6 Running Sand

What is the maximum Running Sand\*\* 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**

Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build Ö consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property Ö no significant increase in insurance risk due to running sand problems is likely.

---

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

---



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





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

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

---

## 10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? No

Database searched and no data found.

---

## 10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No  
Guidance: No Guidance Required.

---

# Contact Details

**EmapSite**  
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sales@emapsite.com

**emapsite™**

**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](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries:  
[enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)



**Environment Agency**

National Customer Contact Centre, PO Box 544  
Rotherham, S60 1BY  
Tel: 08708 506 506

Web:[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Email:[enquiries@environment-agency.gov.uk](mailto: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](http://www.gov.uk/phe)

Email:[enquiries@phe.gov.uk](mailto: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](http://www.coal.gov.uk)



**Ordnance Survey**

Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505



**Local Authority**

Authority: Sir Ddinbych - Denbighshire County Council  
Phone: 01824 706 000

Web: <http://www.denbighshire.gov.uk>

Address: County Hall, Wynnstay Road, Ruthin, Denbighshire, LL15

**Getmapping PLC**

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





**Groundsure**

LOCATION INTELLIGENCE

**emapsite™**

Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data.

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This report has been prepared in accordance with the Groundsure Ltd standard Terms and Conditions of business for work of this nature.

## Standard Terms and Conditions

### 1 Definitions

In these terms and conditions unless the context otherwise requires:

**“Beneficiary”** means the person or entity for whose benefit the Client has obtained the Services.

**“Client”** means the party or parties entering into a Contract with Groundsure.

**“Commercial”** means any building or property which is not Residential.

**“Confidential Information”** means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by Groundsure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

**“Support Services”** means Support Services provided by Groundsure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

**“Contract”** means the contract between Groundsure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

**“Third Party Data Provider”** means any third party providing Third Party Content to Groundsure.

**“Data Reports”** means reports comprising factual data with no accompanying interpretation.

**“Fees”** has the meaning set out in clause 5.1.

**“Groundsure”** means Groundsure Limited, a company registered in England and Wales under number 03421028.

**“Groundsure Materials”** means all materials prepared by Groundsure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

**“Intellectual Property”** means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

**“Mapping”** means a map, map data or a combination of historical maps of various ages, time periods and scales.

**“Order”** means an electronic, written or other order form submitted by the Client requesting Services from Groundsure in respect of a specified Site.

**“Ordnance Survey”** means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

**“Order Website”** means the online platform through which Orders may be placed by the Client and accepted by Groundsure.

**“Report”** means a Risk Screening Report or Data Report for Commercial or Residential property.

**“Residential”** means any building or property used as or intended to be used as a single dwelling.

**“Risk Screening Report”** means a risk screening report comprising factual data with an accompanying interpretation by Groundsure.

**“Services”** means any Report, Mapping and/or Support Services which Groundsure has agreed to provide by accepting an Order pursuant to clause 2.6.

**“Site”** means the area of land in respect of which the Client has requested Groundsure to provide the Services.

**“Third Party Content”** means data, database information or other information which is provided to Groundsure by a Third Party Data Provider.

**“User Guide”** means the user guide, as amended from time to time, available upon request from Groundsure and on the website ([www.Groundsure.com](http://www.Groundsure.com)) and forming part of this Contract.

### 2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 Groundsure agrees to provide the Services in accordance with the Contract.

2.2 Groundsure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of Groundsure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, Groundsure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and Groundsure will have no liability therefor. In addition you acknowledge and agree that Groundsure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 Groundsure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by Groundsure. Groundsure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by Groundsure. Groundsure's acceptance of an Order shall be binding only when made in writing and signed by Groundsure's authorised representative or when accepted through the Order Website.

### 3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to Groundsure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to Groundsure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as Groundsure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable Groundsure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the Groundsure Materials, or use the Groundsure Materials in a manner for which they were not intended. The Client may make the Groundsure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that Groundsure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

### 4 Reliance

4.1 The Client acknowledges that the Services provided by Groundsure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by Groundsure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(i) the Beneficiary,

(ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),

(iv) the first purchaser or first tenant of the Site, and

(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by Groundsure. Any party considering such Reports and Services does so at their own risk.

### 5 Fees and Disbursements

5.1 Groundsure shall charge and the Client shall pay fees at the rate and



frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by Groundsure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to Groundsure in full without deduction, counterclaim or set off within 30 days of the date of Groundsure's invoice or such other period as may be agreed in writing between Groundsure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of Groundsure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

## 6 Intellectual Property and Confidentiality

### 6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the Groundsure Materials.

6.2 All Intellectual Property in the Groundsure Materials are and shall remain owned by Groundsure or Groundsure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the Groundsure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to Groundsure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the Groundsure Materials in order to advise the Beneficiary in a professional capacity. However, Groundsure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify Groundsure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

## 7. Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of Groundsure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by Groundsure or its employees, agents or

subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 Groundsure shall not be liable for

(i) loss of profits;

(ii) loss of business;

(iii) depletion of goodwill and/or similar losses;

(iv) loss of anticipated savings;

(v) loss of goods;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

(x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the Groundsure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the Groundsure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of Groundsure's internet ordering service.

7.5 Groundsure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 Groundsure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of Groundsure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against Groundsure in relation to the Services or other matters arising pursuant to the Contract.

## 8 Groundsure's right to suspend or terminate

8.1 If Groundsure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, Groundsure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 Groundsure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to Groundsure within 30 days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

## 9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon Groundsure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

(a) supplied to the Client's specification(s) and in any event

(b) by their nature cannot be returned.

## 10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) Groundsure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in Groundsure's possession or control; and

(ii) the Client shall pay to Groundsure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay Groundsure any additional costs incurred in relation to the termination or suspension of the Contract.

## 11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of Groundsure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to Groundsure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

## 12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through Groundsure.

12.3 Groundsure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of Groundsure.

12.4 No failure on the part of Groundsure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 Groundsure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

(i) the Client or Beneficiary's failure to provide facilities, access or information;

(ii) fire, storm, flood, tempest or epidemic;

(iii) Acts of God or the public enemy;

(iv) riot, civil commotion or war;

(v) strikes, labour disputes or industrial action;

(vi) acts or regulations of any governmental or other agency;

(vii) suspension or delay of services at public registries by Third Party Data Providers;

(viii) changes in law; or

(ix) any other reason beyond Groundsure's reasonable control.

In the event that Groundsure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then Groundsure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

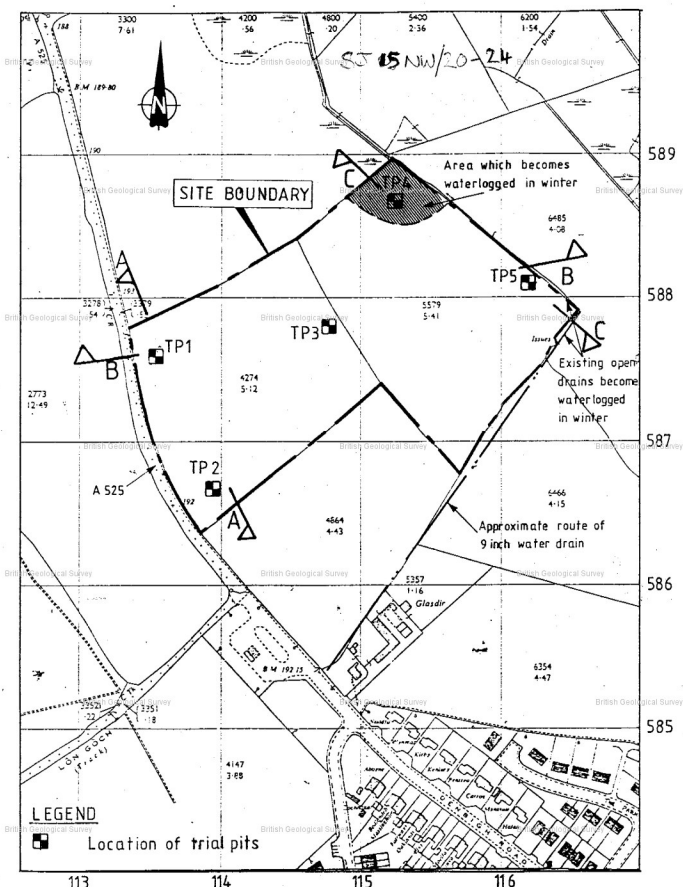
12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 Groundsure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at Groundsure who will respond in a timely manner. In the event you are not satisfied with Groundsure's complaints handling process or you are unable to resolve the complaint, at your discretion you may refer the complaint to The Property Ombudsman Scheme at the following URL/email: website [www.tpos.co.uk](http://www.tpos.co.uk) or email: [admin@tpos.co.uk](mailto:admin@tpos.co.uk)

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law. © Groundsure Limited June 2013

**APPENDIX D  
BGS Borehole Logs**



This Map is reproduced from the Ordnance Survey Map with the sanction of H.M. Stationery Office.

No. AL 549215

Scale 1:2500

## RUTHIN LIVESTOCK MARKET SITE LAYOUT

40389

FIGURE

**2**

LOG OF TRIAL PIT 1

40389/MML/30.8.89

Depth (m)Stratum

0 - 0.3

Firm dark brown sandy silty CLAY (TOPSOIL)

0.3 - 2.2

Very loose to loose red brown occasionally sandy SILT with some 10mm sized gravel pieces (ALLUVIUM)

Some lenses of soft grey silty CLAY below 1.1m

Below 2m, gravel fraction increases and size increases to cobble size particles.

2.2 - 2.4

Loose to medium dense grey rounded to sub-angular GRAVEL in a red brown sandy SILT matrix (ALLUVIUM)

NOTES

1. Base of pit at 2.4m
2. No seepage of water encountered



LOG OF TRIAL PIT 2

40389/MML/30.8.89

Depth (m)Stratum

0 - 0.3

Firm dark brown sandy silty CLAY (TOPSOIL)

0.3 - 0.55

Very loose red brown occasionally sandy SILT  
with some 10mm sized gravel pieces (ALLUVIUM)

0.55 - 1.4

Loose to medium dense red brown slaty angular  
GRAVEL and silty SAND (TERRACE GRAVELS)

1.4 - 2.4

Loose moist red brown silty SAND and slaty  
angular GRAVEL (TERRACE GRAVELS)} NOT AS  
EXPECTED  
FROM  
GEOLOGY  
MAP.NOTES

1. Base of pit at 2.4m
2. No water seepages noted

LOG OF TRIAL PIT 3

40389/MML/30.8.89

Depth (m)Stratum

0 - 0.4

Firm brown silty sandy CLAY with numerous rootlets (TOPSOIL)

British Geological Survey

British Geological Survey

British Geological Survey

0.4 - 0.9

Loose grey silty SAND and rounded to angular GRAVEL (ALLUVIUM)

0.9 - 1.5

Loose to medium dense moist red brown rounded to angular GRAVEL in a clayey SILT matrix with some cobbles (ALLUVIUM)

1.5 - 2.2

Loose to medium dense light brown moist rounded to angular GRAVEL in silty CLAY matrix with some cobbles (ALLUVIUM)

British Geological Survey

British Geological Survey

British Geological Survey

NOTES

1. Base of pit at 2.2m
2. Rapid seepage of water at 2.2m. Water level rose to and then remained at 1.8m after about 10 minutes.

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

LOG OF TRIAL PIT 4

40389/MML/30.8.89

Depth (m)Stratum

0 - 0.4

British Geological Survey

Firm brown silty CLAY with numerous rootlets  
(TOPSOIL)

British Geological Survey

British Geological Survey

0.4 - 1.2

Soft to firm grey silty CLAY with some pieces  
of gravel and rootlets (ALLUVIUM)

1.2 - 1.9

Loose to medium dense light brown/grey rounded  
to angular GRAVEL with some clayey silty SAND  
(ALLUVIUM)

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

NOTES

1. Base of pit at 1.9m
2. 0.4m square brick land-drain at 0.4m on eastern end of pit. Drain contained a trickle of water.
3. No water encountered except for that in land-drain.

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

SJ15NW/24

British Geological Survey

British Geological Survey

British Geological Survey

LOG OF TRIAL PIT 5

40389/MML/30.8.89

Depth (m)

Stratum

0 - 0.3

Firm dark brown silty CLAY (TOPSOIL)

0.3 - 1.0

Soft to firm mottled grey brown silty CLAY with some gravel and cobbles (ALLUVIUM)

1.0 - 1.4

Loose grey brown rounded to sub-angular GRAVEL in a silty clay matrix (ALLUVIUM)

1.4 - 1.7

Loose to medium dense light brown rounded to angular GRAVEL with some silty SAND (Alluvium)

NOTES

1. Base of pit at 1.7m
2. Moderate seepage at 1.55m
3. Water level in pit rose to and remained at 1.55m after 10 minutes

**APPENDIX E**  
**Risk Assessment Methodology**



## Contaminated Land Risk Assessment

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:

Hazard Identification ⇨ Hazard Assessment ⇨ Risk Estimation ⇨ Risk Evaluation

CLR11 outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process. Under CLR11, three tiers of risk assessment exist - Preliminary, Generic Quantitative and Detailed Quantitative.

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

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

- **High likelihood:** There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- **Likely:** There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- **Low likelihood:** There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term;
- **Unlikely:** There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.

The severity is also classified using a system based on CIRIA C552. The terms and definitions are:

- **Severe:** Short term (acute) risk to human health likely to result in ‘significant harm’ as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000);  
*Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse;*
- **Medium:** Chronic damage to human health (‘significant harm’ as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000);  
*Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve;*
- **Mild:** Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000). Damage to sensitive buildings, structures, services or the environment;  
*Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.*
- **Minor:** harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.  
*Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.*

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

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

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:

- **Very high:** 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 currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required;
- **High:** Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term;
- **Moderate:** It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term;
- **Low:** It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild;
- **Very Low:** 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.

**APPENDIX F**  
**Legislative Background**

## Legislative Background

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act;
- The Contaminated Land (England) Regulations 2000;
- The DETR circular 02/2000 Environmental Protection Act 1990: Part IIA Contaminated Land.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

- 1) Significant harm is being caused or there is a significant possibility of such harm being caused;
- 2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

- **Source** - substances that are potential contaminants or pollutants that may cause harm;
- **Pathway** - a potential route by which contaminants can move from the source to the receptor;
- **Receptor** - a receptor that may be harmed, for example the water environment, humans and water.

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused. The presence of a source does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm. The nature and importance of both pathways and receptors are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the SPR approach is 'suitable for use' criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

## Relevant Guidance Documents

This report has been prepared in accordance with the list of guidance below however the list is not exhaustive:

- CLR11 – Model Procedures;
- Contamination and Environmental Matters - Their implications for Property Professionals (2nd Edition RICS Nov 2003);
- Brownfields – Managing the development of previously developed land – A client's guide, CIRIA 2002;
- DEFRA and Environment Agency publications CLR7 – 10, supported by the TOX guides and SGV guides, dated March 2002;
- DETR Circular 02/2000, Contaminated Land: Implementation of Part IIA of the Environmental Protection Act 1990;
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002;

## Relevant Legislative Documents

The following is a non-exhaustive list of legislative framework documents that has been considered in the production of this report:

- The Environment Act (1995);
- The Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012);
- The Environment Protection Act (1990);
- The Contaminated Land (England) Act (2000);
- Contaminated Land (England) Regulations (2012);
- The Water Resources Act (1991);
- The Pollution Prevention and Control (England and Wales) Regulations (2000);
- The Landfill Regulations (England and Wales) Regulations (2002);
- The Landfill (England and Wales) (Amendment) Regulations (2004);
- Health and Safety at Work Act;



**APPENDIX H  
Limitations**

## **Standard Limitations**

This desk study report was conducted and has been prepared for the sole internal use and reliance of the Client, Aldi Stores Ltd. This report shall not be relied upon or transferred to any other parties without the express written authorisation of BSL. If an unauthorised third party comes into possession of this report they rely on it at their risk and the authors owe them no duty of care or skill.

The findings and opinions conveyed via the desk study are based on information obtained from a variety of sources as detailed within this report, which BSL believes are reliable. Nevertheless, BSL cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

Any recommendations made in this report should be confirmed with the Regulatory bodies and Planning Authority prior to implementation to ensure compliance.

No existing manhole covers were lifted or drainage runs inspected during the course of this ground investigation.

The site plans enclosed in this report should not be scaled off.